

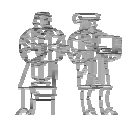
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UNIVERSITY OF
CAMBRIDGE
Department of
Applied Economics

Competition in Retail Electricity Supply

Stephen C. Littlechild



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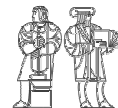
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CMI Working Paper Series

Competition in Retail Electricity Supply¹

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Israel Kirzner has made distinguished contributions to many areas of economics, including methodology, capital theory and the history of economic thought. His elucidation of the nature of competition and entrepreneurship must surely rank among his most important achievements. His writings in that area were influential in the development of my own thinking about privatisation, competition and regulation of the utilities. Subsequently, the regulation of the British electricity industry reflected his and other Austrian ideas. It is pleasing to see that such ideas have increasingly influenced regulatory policy internationally².

The present paper presents an analysis and defence of competition in retail electricity supply, including some account of its development in the UK. For all practical purposes such competition did not exist until a dozen years ago.³ Its development illustrates a number of the themes in Israel Kirzner's writing – for example, the nature of competition as a process over time, the entrepreneurial and learning nature of this process, the role of marketing in alerting customers, the role of competition in establishing market price and in discovering the services and suppliers that customers prefer, and the advantages of competition over regulation (Kirzner, 1973, 1985). It illustrates also the arguments of other Austrian writers to whose work Kirzner has drawn attention (e.g. Hayek 1948, Schumpeter 1950). A lack of familiarity with some of these ideas may have led to some

¹ This paper has been published in *Journal des Economistes et des Etudes Humaines*, September 2002. We are grateful to the publishers for granting permission to include it in the joint CMI Electricity Project/ Department of Applied Economics, University of Cambridge, working paper series.

² Beesley and Littlechild, 1989, Littlechild, 1999, 2001a,c, 2002a,b. See also the writings of the late Michael Beesley, e.g. "Practical regulation, I argue, must involve using Hayekian and Schumpeterian insights." (Beesley, 1997, 24)

³ In a few parts of the US and elsewhere there used to be competition between electricity companies, each providing its own generation and wires, but not competing across the distribution networks as discussed below. There was limited provision for the latter concept for a few large industrial customers in Chile a few years before it was systematically established in the UK.

scepticism about retail competition in the electricity sector. I hope this paper will facilitate a better appreciation of its merits.

I Introduction

Retail competition in electricity is the ability of a customer to choose a preferred retail supplier, sometimes called an electricity service provider (ESP). That retail supplier or service provider has the right of access to the local distribution network to which the customer is connected. The supplier typically generates its own electricity or buys it from a generator or trader or in an electricity Pool. The supplier pays the relevant transmission and distribution charges, typically on published, non-discriminatory and regulated terms. The supplier is typically responsible for meter-reading, billing, collection, complaint handling and possibly other services, and for setting its own retail price and other terms⁴.

Some degree of retail competition has been implemented in almost all countries that have introduced competition in generation. Most countries now allow large industrial customers to choose their supplier, and many countries have also allowed medium-sized customers to do so. The main discussion has arisen over whether and how retail competition should be extended to residential customers – what is sometimes known as “full” retail competition.

By the end of 2000 full retail competition had been implemented in the UK, Norway, Sweden, New Zealand, Germany and several States in the US. In March 2001 a draft European Union (EU) Directive proposed that it be implemented throughout the EU by January 2005.

There has been resistance in some countries. France vetoed the proposed EU Directive in April 2001, citing the problems in California. Arkansas, due to open its retail market in 2003, recommended delay or repeal. California itself, which had introduced full retail competition in 1998, repealed retail competition for all electricity customers in September 2001.⁵ However, the general trend continues. In January 2002 full retail competition was implemented in Australia (Victoria and New South Wales) and Texas, and is still scheduled for implementation in Holland in 2004. In April 2002 the EU agreed to open the market to all medium-sized customers - some two thirds of the total – by 2004, and it is expected that the issue of full retail competition will be reconsidered before too long.

In parallel with this political debate, there has been academic and other debate about the merits and effects of full retail competition. Some UK and US commentators have questioned whether the benefits of retail competition outweigh the costs, at least for smaller and residential customers.

⁴ The supplier might purchase some services such as meter reading from the local distribution company, and in some cases might be responsible for providing or servicing the meter. Certain network-related complaints and enquiries might be handled by the distribution company rather than by the supplier.

⁵ This was primarily to enable the State to recover the costs of the high-priced long-term contracts that it had entered into, rather than a rejection of retail competition per se. (Littlechild, 2002b)

In view of this scepticism, this paper explains in more detail the benefits of retail competition, particularly for residential customers. Experience in the UK, and the cost-benefit debate there, are used to illustrate the arguments. Parallel papers (Littlechild 2002a,c) provide a critique of regulatory policies in this area.

II The Nature and Benefits of Retail Competition

Retail competition in general

Some functions of the retailer are well understood. For example, Joskow (2000b) has suggested that retailers in general exist and prosper because they add value to what consumers would receive if they purchased directly in the wholesale market. Important ways in which they do this are by selling at convenient locations and times, providing complementary products and extensive inventories, providing point-of-sale and post-sale services, passing on in lower retail prices the benefits of wholesale buying power, reducing retailing costs, and developing a reputation for accurate information about quality and service.

That retailers do perform these important functions is not in dispute. However, a perspective that sees the wholesale market as central and pre-existing, and as determining price, with retailing relevant only to the extent that it can offer better quality service, will tend to underestimate the role of retail competition, particularly with respect to price. In practice, the retail market is the relevant one for customers. Direct access to the wholesale market is a marketing tactic used by some participants, but not the starting point for customers.

Retailers can help to create relevant products for manufacturers. For example, some retailers seek out and commission products at prices and qualities that they think will appeal to customers⁶. By offering different terms of payment, retailers can effectively introduce different products. They can enable customers to appreciate the existence of products and product variations, and terms on which these are available, that are likely to be attractive to them. They can stimulate the alertness of customers to the availability of better prices than they are presently paying, or likely to pay in future. In addition, active retailers can intensify competition between manufacturers.

Not all retailers are equally satisfactory. And which manufacturers offer best value is constantly liable to change over time, given uncertain and changing market conditions, changing product qualities and the entrance and exit of different producers. Retailers therefore add value by developing a reputation, not only for providing accurate

⁶ 7-Eleven's "more aggressive approach towards merchandising" is a nice example of entrepreneurial alertness by a retailer. "Recently the group spotted that customers who bought Kraft's Crystal Light powdered soft drinks were buying bottled water to mix it with. It suggested that Kraft make a bottled drink, and secured an exclusive deal to sell the 20oz bottles." (Edgecliffe-Johnson, 2001).

information and delivering on promises about quality, but also for consistently offering the best prices.

In sum, retailers are not just adjuncts to manufacturers. They play an integral part in the competitive market process that tends to deliver to customers the products and services they most want at the best prices that can be obtained from the most efficient producers and retailers at any time. (Cf. Kirzner 1973; Hayek 1948; Hayek 1978, 179-90)

How retailers provide value added in electricity

It has been suggested that there is less scope for retailing to add value in the electricity sector, given the special attributes of the latter. It is true that, at present, the costs of metering and the load-profiling rules necessary for retail competition limit the range of terms and services that can be offered. A review of experience to date (Joskow (2000a, 182) concludes that

The societal benefits of retail competition per se are more apparent so far for larger commercial and industrial customers than for residential and small commercial customers. Successful Electricity Service Providers (ESPs) are offering them [larger customers] a whole package of energy management and energy procurement services covering electricity, natural gas, on-site generation, and price and weather-risk hedging products.” [However,] “there is no evidence that ESPs are yet providing small customers with much, if anything, in the way of value-added services (such as real-time pricing)... The major value-added services being offered to small consumers are ‘green power’ (energy supplied from designated environmentally friendly generating technologies, such as solar and wind power) and bundling of electricity, gas, telephone, and Internet services (one-stop shopping). Perhaps new technologies will reduce the costs of marketing, billing, real-time metering, and control for smaller customers in the future.

These are indeed value-added services that retailers have brought to the market, and there are likely to be more in future. Whether the observed greater rate of switching by large customers is primarily due to the new services cited is another matter. It also, and perhaps mainly, reflects the better prices and other terms offered by competitors. It no doubt also reflects the levels of incumbents’ tariffs prescribed by the regulators, in relation to the costs of efficient provision, and the terms on which other retailers can participate in the market (not least the “shopping credits”)⁷.

Concerns that retail competition in electricity has initially focused on prices rather than “value-added services” seem misplaced. Such a focus is to be expected. It is not just that electricity is broadly homogeneous, so that the scope for adjusting the quality of the electricity itself is severely limited, at least in the short term. More importantly, a key function of retail competition is precisely to carry out the process of price formation in the market. That process has been suppressed or distorted by government and regulatory policies in all countries over the last fifty years or more. The obvious consequence of

⁷ For critiques of these, see Joskow (2000b) and Littlechild (2002c).

removing such policy constraints is to set into action the market's price formation process.

The social value of electricity retailing is that it establishes the prices that are the best that suppliers can offer at any time, and it identifies how these prices differ by product attribute, such as time of day and duration into the future. As a result, retailers and customers can make more informed decisions about, respectively, what to supply and what to consume. Generators in turn can make more informed decisions about what products and terms to offer to retailers, as illustrated below. Over the longer term the level and structure of prices established in the retail and wholesale markets inform generators' decisions on what kinds of plant to build and/or retire (e.g peaking or base load).

There may be concerns about the profitability of taking advantage of consumer ignorance and misperceptions.

'Green power' is sold to consumers who are willing to pay a premium because they want there to be more 'green power' generated. However, the amount being sold is less than the current amount of 'green power'. Thus, it doesn't increase the percentage of environmentally friendly power generation. Is this an economic improvement allowing the customer to get what he wants or is it a way to get money from the gullible?⁸

There is obviously a question whether purchasers of 'green power' do want there to be more such power generated. (If they simply want to assure themselves that their own purchases are 'green' the objection does not apply.) Setting this aside, the answer in brief is that the discovery of a new, valued and hitherto unappreciated attribute of an existing product constitutes an economic improvement from the customer's perspective. The competitive process is more likely than a regulated monopoly to ensure a) that such valued attributes are discovered and b) that (in the absence of barriers to entry) they are provided at prices that do not exceed the additional cost involved. If the price established in the market exceeded the cost of generating 'green power', a competitive market would indeed tend to increase the percentage of environmentally friendly power generation.

The same commentator wonders whether the market's price formation process "is merely a way to allow those with low transactions costs for switching to shift sunk costs on to those with high transactions costs for switching." It seems unlikely that electricity is more problematic in this respect than other markets, at least in the UK⁹. But if switching costs are high, this simply highlights the value to suppliers of a) discovering ways by which customers can realise where better prices are on offer without incurring such costs, and b) developing a reputation for offering reasonable prices. The latter is an important part of

⁸ These and some other later comments derive from an anonymous referee of an earlier version of this paper.

⁹ For example, "an independent MORI survey found that almost 90 per cent of people who have switched their gas and electricity supplier have found it easy or very easy. ... The current rate of switching (38 per cent in electricity and 37 per cent in gas) is higher than in any other comparable industry, including 6 per cent for current bank accounts, 11 per cent for fixed-line telephones and 2 per cent for mortgages, and second only to car insurance." Ofgem News Release PN 5, 18 January 2002.

the market process, which tends not only to identify the best prices on offer (and eliminate the worse ones) but also to identify the best retailers (and indirectly the best generators). As in any market, some may prosper temporarily by deception. However, those who best perceive and supply what customers want, on an economical basis, will tend to survive and expand. Those that are less efficient, or whose performance does not live up to its promise, will tend to disappear. Initially they may lose market share and/or profits, later they may be taken over.

III Examples from the UK electricity industry

The experience of Britain illustrates the process that, to a greater or lesser extent, has been observed in countries around the world when retail competition has been allowed and price restraints removed, particularly for larger and medium-sized customers.

The learning process

For the first time, customers who were not satisfied with what they got could go to another retailer. So for the first time in living memory, the incumbent utilities asked their customers what they wanted. Uniform fixed price, time of day or time of year prices, interruptible prices, Pool prices? All retailers including incumbent utilities could buy in the Pool, but this was only one aspect of the wholesale market. They asked what generators could offer in the way of hedges against uncertain future prices. (These were typically in the form of contracts for differences around Pool prices.) They discussed contracts for base load, mid-merit and peaking electricity, and back-to-back arrangements with customer load. They explored different contract durations, for a month, a year or a longer term. They translated these various costs into offers to customers, trying to match the best offers by other retailers in the market where they judged it economic to do so. They assessed customer response, and tried to put together portfolios of purchase contracts to match their projected sales to customers, with some judgements about exposure to risk and in the light of their underlying strategies about business policy and market share.

The customers, meanwhile, were also active. They needed to know what was on offer and to evaluate what would best suit them. They needed to estimate their likely electricity consumption, often aggregated over many plants, to work out load factors and seasonal variations, and their scope for load management at times of high prices. They needed to put competing offers on a common foundation, so as to evaluate them accurately. They needed to judge whether to buy at Pool price or on contract, whether to commit for one year or several, and whether to put all their purchases with one supplier or to spread them. They variously talked to industry associations, commissioned market intelligence and formed buying groups.

Initially, a great variety of types of deal were on offer. Retailers and customers were clearly seeking to establish how best to buy and sell electricity. Out of this process there gradually emerged a set of prices for a more or less standardised set of products. The process established which product attributes were most significant, and put numbers on

these. For example, the market established not just “the retail price of electricity”, but also whether location or size of each customer’s consumption were important, and how the price depended on load factor, the degree of cover, duration of contract, and so on. Of course, some customers initially chose types of contract that in retrospect were not as advantageous as other types. But the same was true of retailers¹⁰.

There was a parallel discovery process in the wholesale market. Generators and suppliers were both seeking protection against the risks of the Pool spot price. The Pool was not a market in the normal sense. Retailers and generators bought and sold there not because they chose to but because they were legally required to do so, and the price was determined by an administrative mechanism¹¹. Contracts for differences around the Pool price were the vehicles by which wholesale market competition took place (excluding the initial contracts facilitated by government). The nature and duration of these contracts gradually evolved over time. They were determined by the needs of the parties that, in the case of the retailers, were in turn determined by the requirements of the increasingly competitive retail market. So the retail market was an integral determinant of the products traded in the wholesale market.

Examples of improved services

The following are five examples of the retailers’ role in creating and discovering new and more attractive terms on which electricity can be sold, particularly with respect to price. The first two apply mainly to larger customers, though in principle are also applicable to smaller ones.

Before privatisation, certain “extra large” customers in Britain had received lower prices in return for signing interruptible contracts that in practice were never interrupted. After the competitive market was opened, retailers found that better-defined interruptible contracts provided an option midway between fixed price and uncertain Pool price. After some initial shocked protests this proved attractive to many customers.

For large customers, an early benefit of retail competition was the willingness of suppliers to offer greater flexibility of billing: either monthly or quarterly or, in principle, any other frequency; either site by site or aggregated; and with whatever degree of

¹⁰ A simple example will illustrate the learning process. One generator, new to the retail market, thought it prudent in the first year of competition to offer the same structure of charges as the distribution companies had offered before privatisation - a Standard Time Of Day or STOD tariff - but with a specified percentage reduction on each component. In the second year, in response to customer requests for simplicity, it offered a single all-in-one price per unit, covering energy cost, metering cost, charges for use of distribution and transmission system, with no separate elements for fixed charge or any distinction between night and day charges. This proved very popular. But the generator found, to its dismay, that the customers no longer had any incentive to restrain their usage at the expensive peak hours, and indeed its offer had appealed most strongly to precisely those customers who most wanted to expand usage at such hours. In the third year, severely burned, the generator reverted to a distinction between peak and off-peak prices.

¹¹ Pool price in each half hour was set equal to the marginal bid price in that half hour. However, there were complex rules as to which generating sets counted and which did not, and the algorithm for setting prices was not generally available. So there was some lack of transparency as to how Pool prices were actually set.

analysis of usage the customer wanted. Information about usage at individual sites, for example, has enabled the energy management centres of some supermarket chains to identify where faulty freezer equipment needs replacing.

For residential customers, a benefit of retail competition has been the willingness of some suppliers to offer tariffs without fixed monthly charges. It has long been a complaint of some small users that they have to pay regardless of whether they use any electricity. It may be that some costs are incurred even if a customer uses no electricity, and that customers have to pay for this in some other way. Rival suppliers are pointing this out in their advertising. But the point is that retail competition is delivering, as an option, a preferred way of charging that was previously refused¹².

Several suppliers have sought to develop services of particular relevance to disadvantaged customers. For example,

We, as a national player, decided that we were going to target all aspects of the public, not just the rich or more affluent. We wanted to be an energy supplier to everybody. This includes the poorer members of society, which also includes many elderly people. Many of these older people were the least comfortable with the opportunity to switch electricity supplier. So, we worked with Age Concern to develop a product that would help old people to switch, get better value for money day-to-day, and also provide them with fuel saving benefits during the winter, including cold weather payments.(Baldwin, 2000, 8)

In similar vein, Eastern/TXU has recently offered residential electricity at a fixed price per month, dependent on the size of family and type of house, but independent of the actual consumption. This has attractions for those customers for whom the uncertain and variable size of the electricity bill presents problems¹³.

IV Additional social benefits of retail competition

A successful retailing sector can create additional social value by improving the performance of other sectors of the market.

Stimulating competition in generation

¹² The referee mentioned earlier suggests that offering multiple price plans is a way to extract economic rent. But here the innovation is the offering of a single price plan. And whereas a monopolist may be able to extract rent in this way, in a competitive market the ability to do so is limited by the willingness of competitors to offer better terms.

¹³ The electricity is metered as normal, and such readings are used for charging generation and distribution costs to the supplier, but not for purposes of the supplier's bill to the customer. The supplier retains the right to revise the terms offered in the light of actual usage. The referee says "it is to be expected that the supplier will take advantage of customer inattention and inertia, raising the price for those who use more electricity but not lowering it for those who use less." However, the ability to discriminate in this way is limited by the need to maintain a credible reputation and by the ability of competitors to alert customers to any shady practice and to offer better terms.

Retailers can stimulate greater price responsiveness and/or greater forward contracting by customers, both of which can reduce the incentives for generators to withhold supply and drive up prices. A greater diversity of buyers in the wholesale markets can increase liquidity and increase opportunities for generators to lay off risks at competitive market prices (Cf. Joskow, 2000a, 22-4; Goulding et. al., 1999).

UK experience confirms this, and suggests that retail competition stimulates competition in generation to an even greater degree. The difference is between an active and a passive buying side of the market. A retailer exposed to competition knows that it has already lost customers and may lose more if its prices are not competitive. It knows that it has won customers elsewhere and can win more if its prices are competitive. It knows that the effectiveness of its buying strategy will be directly translated, not only into market share, but also into the bottom line profit and loss of its business. In contrast, a retailer with a monopoly over all or a significant part of its customer base¹⁴, with arrangements to pass through reasonable purchasing costs, is not exposed to any such risks on market share. It knows that (subject to the detail of regulatory process) its profit is broadly independent of its wholesale purchasing strategy.

The differences in strategy are manifest in various ways. Examples include the time and effort that a retailer will spend trying to find, negotiate for and secure the best price from a generator or trader; the willingness to take exposed positions if contract cover is not available on acceptable terms; the duration of forward contracts accepted; the imagination and effort put into designing and considering new contractual forms; the willingness or otherwise to accept non-price elements of deals, and so on. The differences are manifest, too, in a greater willingness to seek out generators with whom to trade, perhaps smaller ones or those embedded in local distribution networks or on-site generators, that it might not otherwise have been worth approaching. Importantly, there is a greater willingness by retailers to encourage new entrants into generation provided this offers competitive advantage to them, whereas monopoly retailers with generation pass-through arrangements may be indifferent to this (or may encourage uneconomic entry by their affiliates).

The net effect of all this is that opening up retail competition puts greater pressure on generators to offer better deals. There is a keener wholesale market, offering lower prices and greater responsiveness as a result of greater efficiency, greater participation by incumbents and new entrants, and greater need to innovate in response to customer demand.

Measuring this is not straightforward but some evidence from the UK may be relevant. During the four years 1994/5 to 1997/8, the average generation cost reportedly incurred by Public Electricity Suppliers to supply the monopoly franchise market was about 17% higher than Pool price. Part of this was attributable to contracts entered into before privatisation, or facilitated by the Government to assist the coal industry. The average ratio of cost to Pool price for such contracts was about 20%, compared to about 14% on the contracts entered into on a more commercial basis (OFFER, 1996; OFFER/Ofgem,

¹⁴ Residential and small business customers typically account for around half the total market demand.

1999). In contrast, the average ratio of costs to Pool price in the competitive non-franchise market was very much lower and often not much above Pool price.

The figures should not be taken too precisely. They reflect amongst other things the ratio of contract prices signed several years earlier to the subsequent course of Pool prices that could have turned out quite differently. They also reflect the allocation of contract costs between markets, which was no doubt influenced by the existence of a monopoly franchise and a pass-through price control. Nonetheless, they suggest that suppliers in monopoly markets are more subject to non-commercial influences and less keen to achieve the lowest available purchase prices. More broadly, retail competition makes it more difficult for a government to persuade market participants to act non-commercially at the expense of customers¹⁵.

Other social benefits of retail supply competition

A robust retail market is manifest in a more liquid wholesale market. This is partly due to the increased number and diversity of buyers in the markets, in the sense of more and different electricity retailers. More striking, in Britain and no doubt elsewhere, has been the growth of financial intermediaries (including subsidiaries of some retailers themselves) that have been willing to take risks, arbitrage positions, and put together attractive packages for retailers from disparate components offered by generators or other intermediaries. An important factor in the growth of these intermediaries has been the increased keenness of retailers' demand, stimulated by retail competition, for the products that financial intermediaries can offer.

Active retailers will seek to reduce costs at all stages of the supply chain. As noted, this includes the potential opportunities to reduce the costs of retailing per se, and to secure lower generation costs and risks. Active retailers will seek ways to reduce the costs of transmission and distribution too. Examples include encouraging on-site generation (to provide lower price as well as higher quality service) and combined heat and power plants¹⁶, installation of larger generation capacity than the on-site demand (to sell the balance to market), installation of direct links between local generation and local demand (by-passing the local distribution network), construction of (more) interconnections between adjacent systems, and so on. The social benefit of retail competition, in addition to the lower supply costs achieved, includes the greater pressure for efficiency put on transmission and distribution businesses - for example, in terms of new investment decisions, operating and construction costs, relating prices to costs, innovation, and attitude to customers.

¹⁵ The referee says "This is undoubtedly true. But is it a good thing? If the government is corrupt, it is. However, if the government is concerned with non-commercial aspects of the public good, it may well not be." The evidence on the results of government ownership and regulation is now quite extensive, and readers can form their own view. The recent repeal of retail competition in California in order to be able to recover the cost of the State's \$10 billion venture into electricity purchasing may not be an irrelevant piece of evidence.

¹⁶ In the US, the PURPA of 1978 required utilities to buy power from co-generators at avoided cost, which was not the case in the UK. However, in the absence of a competitive market there may have been a distortion of the extent of cogeneration in both cases.

The introduction and extension of retail competition has another indirect impact on pricing and efficiency even in monopoly sectors of the industry. It increases the political and economic pressure for improved cost allocation, both within and by the regulated utilities. It also provides more information as to what allocations of cost *do* reflect cost causality, than would be available from integrated utilities in the absence of competition. This better information stems, *inter alia*, from the performance of retail suppliers and distribution businesses trading as separate entities, from observation of the costs of new entrants into retailing and into other unbundled activities, and from the arguments put forward by a variety of parties with different interests and knowledge. Better information facilitates the setting of price controls on monopoly businesses such as distribution networks, which is conducive to both allocative and productive efficiency.

Long-term contracts

It has been argued (e.g. Watts, 2001) that retail competition precludes the signing of long term-contracts, which are “the best available cure for the bad effects of short-term price volatility and market power in the spot market.” It is widely agreed that contracts can indeed smooth prices to customers and curb market power in the spot markets. Analyses of California’s experience have generally recognised that an important part of the problem lay in the regulatory prohibition on such contracts (e.g. Joskow 2001). However, retail competition does not prevent either customers or suppliers from signing long-term contracts.

Watts says “I, as an individual residential consumer, cannot sign such long-term contracts. It would be too expensive to solicit them and almost impossible for whomever I might sign them with to enforce them.” However, there is no evidence that most customers wish to enter long-term contracts. Even large industrial customers typically sign one-year contracts. A disadvantage of retail monopoly is that utilities and regulators, who do not have to test their judgements in the market, are typically not well-placed to judge the costs and risks of long-term contracts. They can nevertheless force customers to enter such contracts and to bear the resulting costs and risks.

Watts also says “now that I have these choices [of retail supplier], my local utility can no longer safely sign a long-term contract for electricity because, if electricity costs go down, I am free to leave it for a cheaper supplier.” However, this should not be an obstacle to a confident utility: if the contract is really worth signing the utility could match any price reductions to customers and still come out ahead. A consequence of retail competition is that suppliers who wish to sign long-term contracts have to back their own judgements rather than pass the risk to customers; this is likely improve the quality of decision-making. Retail suppliers do in fact sign long-term contracts as well as shorter term ones. Some suppliers have purchased generating plant or the rights to its output, which can be thought of as a very long-term (lifetime) contract.¹⁷

¹⁷ A recent example is the following. “Centrica has entered into a 17-year tolling agreement with Intergen for the total capacity of the 860MW gas-fired plant to be built in Spalding, Lincolnshire. ... The arrangement will add further support to Centrica’s strategy of having a proportion of its retail electricity

V Retail Competition and Electricity Prices

There is a concern that retail competition could increase costs and prices rather than reduce them. This is because the scope for savings from competition is small but the scope for cost increases is significant.

Retailing costs (metering, billing, customer services, and the like) represent a very small part of the average customer's electricity bill – less than 5 per cent. ...Significant costs are associated with developing load profiles and settlements protocols to match up monthly metered consumption for individual consumers with wholesale market prices that vary hourly. ESPs must incur significant additional advertising, promotion, and marketing costs....Some smaller customers may actually be harmed by retail competition because the large advertising, marketing and billing costs that the ESPs incur must eventually find their way into the prices that retail customers pay for service. (Joskow, 2000b, 177, 181-2, 185)

Data on the components of turnover for the aggregate supply businesses of the 14 Public Electricity Suppliers (PESs) in Britain in 1995/96 show a similar figure of 5% for average supply business costs and profits. Later figures published in 1999 show a higher proportion (13%) for residential customers. At that time the regulator proposed a correction in cost allocation procedures that would increase the proportion to 17%¹⁸. This implies rather more scope for retail competition to reduce these costs.

Would retail competition be likely to increase customer service costs such as advertising, promotion and marketing, as suppliers compete to attract customers? The empirical evidence does not support this claim for large and medium-sized customers in the UK. There was apparently no increase in these costs from 1994/95 to 1996/97, after the market for medium-sized customers opened up in Britain. There was in fact a reduction in bad debt costs. (OFFER, 1997, 52-4, Figs. 11 a,b).

There was an increase in the supply business operating costs of the PESs after the market opened completely in 1998.¹⁹ Many of the suppliers were keen to retain or attract small business and residential customers and incurred significant costs in doing so.

demand met by its own sources. The deal will give Centrica the total plant capacity rights for a combination of fixed and market-related tolling payments. Centrica will source the gas and will be able to dispatch the plant flexibly, while Intergen will bear the operational risk. The deal also means that Centrica does not have to commit any capital. As a separate point, we note that deals such as this are allowing new power plants to reach financial close in spite of the low wholesale prices in the UK." Schroder Salomon Smith Barney, *Valuation Spreadsheet, European Utilities*, 27 May 2002, p. 2.

¹⁸ "Supply business costs and margins in 1998/99 accounted for about 13% of a typical domestic customer's annual bill. The proposed transfer of costs from PESs' distribution to supply businesses would increase this proportion to about 17%." (Ofgem, 1999, 62).

¹⁹ See Ofgem (1999, 66, Table 7.4). The average increase from 1997/8 to 1998/9 was 23%. This may have included one-off costs and is not necessarily a fair reflection of ongoing costs. It also reflects the companies' allocations of costs to the under 100kW and first-tier (within area) customers that may not have been unaffected by the ongoing price control review.

It would be wrong to suggest, however, that prices would simply rise to cover whatever retailing costs were incurred, on a sort of cost-plus basis. The direction of causation is the opposite. The amount that competitive retailers find it worthwhile to spend to keep or attract customers is limited by the margin they can derive from such customers, which in turn is constrained by the prices in the market. Crudely, it is worth paying up to the present value of the likely profit margin, calculated over a plausible time for which the customer might stay with that retailer. Re-evaluations of plans have been evident in the British market. Retailers who started out with ideas of TV advertising soon found that this was not justified by the prospective margins, and had to develop more cost-effective ways of attracting customers, initially by door-to-door selling (which was much criticised²⁰) and later by other methods.²¹

After several decades of cost-plus regulation and/or public ownership, with politically determined and fossilised market structures, it would not be surprising if prices were initially significantly different from costs. Prices might indeed be above the costs that an efficient competitive retailer would expect to incur. It would not be surprising to find unexploited economies of scale and scope in retailing²². By the same token, retailers might be willing to incur significant marketing costs to attract additional customers²³. These costs may reduce as retail competition intensifies, and as experience and innovation indicate more economic or satisfactory ways to attract customers.²⁴ Prices might of course rise if previous levels are not sustainable in a competitive market. Marketing costs will generally be above pre-competition levels. But is there any reason to believe they would be out of line with the levels that obtain in other competitive markets?

With retail competition, higher marketing costs could be offset by reductions in other components of cost. Joskow (2000a, 31, fn. 25) estimates that utility advertising expenses are less than 0.5% of retail service costs, and that sales costs (including advertising) are

²⁰ In the first year of electricity competition there were some 4,900 complaints about high pressure or misleading selling practices. However, that number was only about one complaint per thousand transfers. The proportion has now fallen to about half the previous level. Complaints about erroneous transfers is presently running at about three times that level (i.e. 1.5 per 1000 transfers), but it too has halved. House of Commons Select Committee on Public Accounts, Eleventh Report, Session 2001-02, 10 December 2001.

²¹ For example, "Only about 50% of [our] customers now come from door-to-door sales, originally it was 100%. We are looking to increase the internet and telemarketing to progressively reduce the door-to-door selling. Initially door-to-door was necessary to open the market up, giving people personal contact, but it is difficult to manage, leading to a number of customer complaints. ... For a customer-focussed company, you do not want to be mis-selling, you don't want to see high levels of complaints because people are not selling your product properly. It is much easier to manage and control via telemarketing, affinity schemes and the internet." (Baldwin, 2000, 8).

²² The referee says "if they exist, and they probably do, the regulated monopoly has them and non-monopoly retailers will have less of them." However, with monopoly utilities there is pressure to disallow mergers of what are typically vertically integrated entities. With retail competition there is less objection to mergers and acquisitions of the retail businesses. In fact, at present neither of the largest two electricity retailers in the UK is a former incumbent electricity utility.

²³ Cf. Demsetz (1969), Kirzner (1973, ch. 4). The critical treatment of marketing costs in some of the discussions is sometimes reminiscent of one side of the debates in the 1970s (e.g. Goldschmid et al. 1974).

²⁴ This includes by "dual fuel" provision (of electricity and gas) and other utility services such as water and telecoms, by wider joint marketing of other services, and by mergers and acquisitions of other supply businesses.

about 5% of such retail service costs²⁵. In turn, retail service costs are about 5% of total price and generation costs are about 50%. Even a doubling of retail sales costs, or a twenty-fold increase in advertising costs, would be broadly offset by a 10% reduction in retail service costs as a whole, or by a 1% reduction in the costs of purchasing generation²⁶.

Neither of these reductions is implausible as a result of competitive pressures. Final prices to all customers in the UK are down by about 25% to 35% in real terms since privatisation, though of course many factors have contributed to this. In particular, there have been significant reductions in prices to residential customers associated with the advent of full retail competition, as discussed below.

VI Benefits and costs of full retail competition in the UK

It is generally accepted that large and medium-sized customers in the UK have seen significant benefits from retail competition. There have been additional costs, principally those of installing half-hourly meters and communications equipment at customers' premises, and upgrading IT systems of suppliers. The benefits to these customers have outweighed their costs. The main debate has been whether it has been worthwhile to allow retail competition for smaller and residential customers. Much of the debate has been over whether it was worthwhile to incur the costs of load profiling and upgrading settlement systems to make retail choice possible for all customers. It would typically not be economic for an individual customer to choose another supplier unless such systems were in place.

Various attempts have been made to compare the costs and benefits of full retail competition in the UK. Cost-benefit analysis is difficult enough after a policy has been implemented and the consequences observed, let alone before it. This is particularly the case when the policy involves opening up the possibility of new choices and behaviour never available before. Nevertheless, the Parliamentary Select Committee insisted that OFFER make an assessment in February 1997 before the market opened over the period September 1998 to May 1999.

Design of the systems and the allowable extent of pooling, settlement and other IT costs was then under negotiation with the companies, whose estimates varied widely. OFFER (1997a) put the total undiscounted costs over ten years in the range £375 to £1355 million (£40 to £140 million a year). Illustrative total benefits were put in the range £6 to £8

²⁵ These retail service costs are separate from the costs of generation and of using the transmission and distribution systems. In the UK, data is available on the retail supply business operating costs divided into four components with the following average proportions: customer service and other costs including billing and customer records 58%, revenue collection 25%, bad debts 10% and advertising and marketing 7%. (OFFER, 1997, 43, para. 6.23). The last component may correspond to Joskow's 5% selling costs.

²⁶ To clarify the arithmetic, if total price to customers is 100, the two components discussed here are generation 50 and retail service costs 5. Contained within the latter are sales costs 0.25 and advertising 0.025.

billion over ten years (£600 to £800 million a year). These came mainly from more efficient purchasing and from greater competition in generation²⁷.

Green and McDaniel (1998), also writing before the event, agreed that there would be benefits to customers, which they put at over £300 million a year. However, they argued that these would be essentially transfers from electricity companies and the coal industry, with no net social benefit. Consequently the policy would have a net social loss roughly in the amount of the extra settlement and other costs.

The National Audit Office (NAO) (2001) carried out a study with data up to June 2000, when the domestic market had been open for just over a year. It noted that Ofgem had allowed the utility companies to recover some £850 million in additional costs (£121 million per year for seven years). It estimated that since the market opened, 6.5 million customers had switched supplier and seen their bills fall by £299 million, of which about half (£143 million) was attributable to competition and the other half (£156 million) to tighter retail price caps. The customers that had not switched supplier had benefited from the lower price caps but most had not seen further savings. The NAO concluded that domestic customers had benefited from competition.

MacKerron (2001) challenged this assessment, arguing that the £156 million price cap saving was irrelevant, that part of the £143 million savings attributed to competition reflected dual fuel and direct debit discounts that could have been achieved without it, and that customer transactions costs had been omitted. He doubted whether there was as much scope as the NAO and Ofgem hoped for future reductions in costs of retailing and generation purchasing. He concluded that the policy had probably made consumers worse off.

However, it is arguable that the price cap reductions are not irrelevant to the assessment of policy (Littlechild, 2001b). Both the NAO and MacKerron ignore the positive effects of extending retail competition on competition in the generation market, as reflected in lower Pool and contract prices. They also fail to credit full retail competition for the reductions in coal purchase prices that had previously only been sustained by virtue of the retail monopoly over smaller customers. Full retail competition also facilitated the reallocation and reduction of costs in setting tighter distribution price controls. All these cost reductions were reflected in tighter retail price caps that took effect at the time that the residential market was due to open. The proportion of cost reductions properly attributable to extending retail competition is necessarily debatable, but that is not to say it is zero or negligible. So, measuring the benefits of full retail competition in terms of price reductions compared to the tighter price cap is already to undervalue these benefits.

It seems implausible to assume that reductions in generation and coal prices are simply transfers that have no effect on the costs of producing these products. Costs are not given

²⁷ The relevant benefit here is the incremental effect on wholesale competition of extending retail competition to residential customers, given that it had already been implemented for larger customers. The impact would derive from competitive pressures across the board instead of half the buying side subject to cost-pass-through regulation.

exogenously: lower prices force competitors to improve or leave the market to those who are more efficient.²⁸ There is ample evidence of real cost reductions throughout the industry as a result of competition and tighter price controls.²⁹ Again, the appropriate proportions attributable to full retail competition are debatable, but not negligible.

As to the other benefits cited, most customers are indeed now able to change the way they pay for electricity without changing supplier. However, as the NAO said, suppliers' efforts to retain or win customers in the competitive market are likely to have contributed significantly to these further savings.

Shuttleworth (2001) responded on behalf of MacKerron. He reaffirmed their argument in the phrase "if you can do it under monopoly, it isn't a benefit of competition." He suggested that appropriate action by government and/or regulator could have achieved many of the benefits claimed for competition.

But how far is this true? Austrian and public choice economists have been arguing over the last quarter of a century that Governments and regulators typically do not have either the knowledge or incentive to do all these things. Competition is precisely a way of providing the relevant information and incentivising the market participants to use it to benefit customers.

VIII Removing the price control

It would be remiss to conclude this paper without noting the developments in retail competition that enabled the UK regulator to remove the transitional price cap there. I have elsewhere summarized the situation as follows (Littlechild, 2002a).

In November 2001 Ofgem (2001) came to review the control yet again. It considered a variety of factors. There was a high level of awareness of competing suppliers from various sources; general satisfaction with the service provided; and switching supplier was perceived to be easy. Around 100,000 customers had been switching supplier each week, slightly up on the previous year; net switching away from the incumbent had also increased slightly; nearly 40 per cent of all customers had switched supplier at least once, about double the level achieved a year earlier; and the pattern of switching was similar for all socioeconomic groups. The average proportion of customers retained by the incumbent supplier had fallen from 90 per cent two years earlier to 70 per cent.

Whereas only two incumbent companies had set their prices below the price cap two years ago, and then by less than one percent, now all but three offered a

²⁸ Green and McDaniel acknowledged that "this conclusion [a net social loss] might be reversed if competitive pressure leads to significant additional cost savings in future". Their estimates suggested that a supply cost reduction of 10% would suffice to do this. If I understand correctly, if even one third of all competitive price reductions in their model were translated into real savings, this would imply a net social gain from full retail competition.

²⁹ To take a simple example, manpower in the incumbent companies, both generation and distribution, is down by about two thirds on average since privatisation.

reduction, of up to about two percent. The median discounts available on the incumbent supplier's prices ranged from 5 to 13 per cent for the Standard Credit tariff, from 6 to 14 per cent for direct debit, and from 1 to 8 per cent for prepayment.

Ofgem reports that the range of tariffs and offers available to customers has continued to widen and become more innovative. For example, green tariffs, energy efficiency deals, offers targeted at disadvantaged customers, dual fuel tariffs, affinity deals and online services have been taken up by more suppliers. Suppliers have become more responsive to customer demands. Further innovations have emerged including loyalty cards, offers aimed at students, tariffs with no standing charge, "double the difference" offers, an offer to buy back excess solar energy generated by customers in their homes, tariffs including low energy light bulbs or a new fridge/freezer trade-in offer for disadvantaged customers, a Stay Warm tariff which allows customers aged over 60 to pay a fixed amount for their fuel throughout the year (irrespective of actual consumption and spread evenly over the year), insurance offers, and combined bills including gas, electricity and home telephone.

There have been mergers and acquisitions among suppliers, and there has been other entry and exit. The number of suppliers making offers has fallen, but there is still a reasonable spread of offers. There is evidence of a competitive market process at work: "Suppliers that were in October 2000 making price offers in excess of the local incumbent have now either left the market or reduced prices so as to offer a discount to the incumbent." (p. 62) More suppliers are now offering price discounts to prepayment customers.

Ofgem noted a few remaining barriers to entry, principally trading arrangements in Scotland and problems associated with access to prepayment meter facilities. These had not precluded competition, and Ofgem indicated the action it was taking to address the issues.

In view of this evidence of increasing competition, Ofgem proposed to eliminate the supply price restraints at the end of March 2002. It had already eliminated most restraints on gas supply prices a couple of years earlier.

Ofgem (2002) confirmed this proposal, and shortly afterwards removed the controls as scheduled.

VIII Concluding comment

Green and McDaniel (1998) conclude their evaluation of competition in electricity supply with the following remark.

There is also the Austrian view of competition as a process of discovery – no one can predict the new services which a new entrant might profitably provide. An

optimistic view might be that it is worth incurring the transactions costs and short-term losses in order to create these opportunities.

Credit is due to Israel Kirzner for elucidating and developing this Austrian view of competition as a process of discovery. His work has helped to give policymakers the confidence to create the opportunities for the competitive process to work in retail electricity supply. The present paper has provided evidence of innovative services in the UK, and argued that the benefits of competition do indeed outweigh any transactions costs and short-term losses involved. It is to be hoped that this will enable a better understanding of the benefits of retail competition in other sectors and countries too.

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