

Report on the impact of maintaining price regulation

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Terms of reference

I have been asked to provide a Report to the Australian Energy Markets Commission on the theoretical implications and practical experience in relevant countries of deregulated, competitive markets that have moved from the situation of having a regulated or standard offer price, particularly one which is higher than where competitive prices are expected to be, to effectively or workably competitive markets where price is unregulated.

The Report draws both on theoretical literature and on experience in other countries and other industries to address the questions of whether the existence of a benchmark price is likely to result in:

- the distortion or enhancement of pricing, innovation, competitive behaviour and the efficiency of market outcomes compared to those that would occur in competitive markets where price is unregulated or no benchmark or reference price exists;
- retailers charging prices which are lower or higher than they would be in the absence of a benchmark or regulated price; and
- consumers making more or less informed and beneficial price/service decisions than they would have made in the absence of a benchmark or regulated price.

In terms of scope, the Report focuses chiefly on the experience in markets:

- for goods or services provided to the mass market or small consumers and regarded as ‘essential’, particularly retail energy supplies; and
- which have moved from the situation of having a regulated or standard offer price, to the situation of effective or workable competition where price is unregulated.

In this regard, the Report references the experience of deregulated retail energy markets in the United Kingdom, the USA and continental Europe. Recent UK policy developments in the air transport industry and in telecoms are also covered briefly.

The Report is based upon relevant theoretical and empirical economic studies, including analysis and reports published by academic and other independent institutions and public agencies.

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PART 1 Introduction

1.1 The general context: the transition from regulated to competitive markets

The application of market opening and liberalisation policies to previously monopolised economic sectors such as communications and energy has now been pursued in many jurisdictions around the world. Although each case has its own distinctive features, a common process is also involved, which can be most simply characterised as a transition from regulated, monopolistic supply to deregulated, competitive markets.

This transition typically involves steady changes in the structure of the relevant markets, although the pace of change has shown considerable variation from case to case. As will be discussed below, whilst there have been various exercises in labelling the particular states or staging posts along the way from monopoly to effective competition, it is usually only the end states of the transition that have clear, well-defined characteristics.

International differentiation in the process of transition has typically been greatest in the opening phase, largely because a variety of approaches to the regulation of monopoly have been taken by different countries. Examples of broad approaches include:

- Public ownership, which can be viewed as a form of regulation which relies heavily upon the delegation of relevant objectives.¹
- Alternative geographic definitions of the scope of a particular monopoly franchise, from national/federal to regional/state to city/local.
- The establishment of ‘independent’ authorities to regulate privately owned monopolies, and in some cases also to regulate public-owned monopolies (for example Postcomm in the UK, which regulates the publicly owned Royal Mail).

Each of these broad approaches contains a range of variants, depending upon the particular institutional arrangements adopted – arrangements which in turn have reflected the wider institutional and political traditions of the relevant country or jurisdiction.

International differences in market governance have tended to reduce somewhat as liberalisation proceeds, although there remains scope for significant policy and institutional differentiation throughout the process. For example, different electricity systems can have different rule-books for the operation of wholesale markets, whilst gas market characteristics may be influenced by the significance of gas as a fuel in the relevant economy. Nonetheless, there has tended to be significant policy convergence

¹ See Chapter 2 of J. Vickers and G. Yarrow, *Privatization: An Economic Perspective*, MIT Press: Cambridge Mass, 1988.

on a number of key regulatory principles, including regulatory withdrawal from direct² controls on market conduct/outcomes (such as price controls) and the allocation of a significantly greater role to general competition policy and law.

1.2 Public policy objectives and the promotion of consumer interests

The objectives that have motivated market opening and liberalisation have also differed to some extent from country to country. Where the starting point has been public ownership, it has often been dissatisfaction with the efficiency performance of the enterprises concerned that has been the main driver. Inefficiency in the relevant circumstances does not necessarily translate directly into harm to consumers, since public enterprises may be subsidised in order to keep prices down and levels of service up. Taxpayers may, therefore, bear a substantial percentage – possibly in excess of 100% – of the costs of inefficiency.

Increasingly however, the emphasis of liberalisation has been on the promotion of consumer interests. Thus, whereas regulation has rightly been seen as reasonably effective in holding average prices of private monopolies at levels close to costs, there has been increased awareness that, in many cases at least, the costs of monopolists have, for want of external pressures, been significantly higher than they could feasibly have been. The result has been excessively high prices, attributable to excessive costs rather than to the excessive mark-ups that might be associated with unregulated monopolies.

In cases where liberalisation has led to significant increases in productivity and reductions in costs, the notion of promoting consumer interests was often relatively straightforward in the early stages of the transition. Over time, however, regulators have increasingly come to recognise the importance of a number of trade-offs that need to be resolved when translating general statements of policy into operational policy procedures. For example:

- Consumers have obvious interests in factors such as reliability of supplies and quality of service, as well as in low prices. For so long as price controls or similar regulatory influences on prices remain, this can give rise to difficult informational problems for regulators, who ideally would like to know what weights consumers assign to these non-price elements of the package that is supplied to them.
- Consumers as a group have longer term interests, as well as shorter-term interests, in matters such as price and quality of service. Promotion of consumer interests might, therefore, require policies that lead to higher prices

² Regulation may continue to have major, indirect influences on the market, most usually via the role that it might play in the making and enforcing of market rules. Typically, market rules become more extensive and more complex in liberalised markets – see S.K.Vogel, *Freer Markets, More Rules: Regulatory Reform in Advanced Industrial Countries*, Cornell University Press, 1998 – and the regulatory function may, depending upon market governance arrangements, increase in significance as a result. The policy shift is therefore based less upon a reduction in regulation and more on a refocusing of regulatory tasks, away from determining market *outcomes* and towards facilitating effective market *processes*. At the risk of over-simplification, it might be said that regulation becomes less executive, and more judicial and more legislative, in character.

today, if the effect is to promote investment and innovation that can be expected to deliver better value for money in the future.

- In the energy sector the notion of consumer interests is under re-examination as a result of the increased priority being given to environmental policy in general, and to climate change policy in particular. If there were a fully market-based approach to greenhouse gas emissions, it could be argued that environmental issues raise no new problems: carbon would be priced, the environmental costs would be reflected in energy prices, and energy consumers would take them into account when making their decisions, just as they do with all other costs of supply. But no economy is anywhere close to this position, and an immediate question arises: how, if at all, should environmental externalities be factored in by regulators with duties defined in terms of consumers and competition? There are no very simple answers to this question.
- Consumers are not homogeneous, and sometimes their interests come into conflict. Distinctions that recur frequently in policy debates include: industrial and commercial (I&C) compared with residential; urban compared with rural; reasonably affluent residential compared with low income or otherwise socially vulnerable residential. Indeed, although economics textbooks tend to present the case for regulated monopoly in sectors such as electricity as being based upon the existence of natural monopoly conditions, with the modern twist that natural monopoly conditions reside only in transmission and distribution networks (and not in generation and supply), in reality regulated monopoly has been extensively used as an instrument for redistributing economic resources among different groups of consumers. A classic pattern is geographic averaging of prices, which tends to cross-subsidise consumers with high costs to serve, often in rural areas, at the expense of consumers with low cost-to-serve, often in urban areas. Another pattern of cross subsidisation that has been favoured in the past by a number of European economies is cross-subsidisation of industrial consumers at the expense of residential consumers.

It will be clear that each of the above points identifies an issue, or a set of issues, that lies at the heart of policy debates in the energy sector, including: security of supply, incentives for investment and innovation, environmental impacts and how to account for them, and fuel poverty and social tariffs. Although some of these issues are often discussed as if they were something apart from consumer protection, such an approach can be misleading. An over-arching emphasis on consumer interests will, properly interpreted, have to address all these issues: it cannot reasonably ignore them.

Given the terms of reference for this Report, the most important of the points is the second, concerning investment and innovation, which can be generalised to encompass all those aspects of market conduct that will affect supply conditions in the relevant energy markets. The reason for its significance is that transitional policies, which start from a position of regulated or publicly owned monopoly, understandably tend initially to view or 'frame' consumer protection policy as an exercise in which the prevention of excessive pricing is the central, key element. It is therefore

important to recognise that consumers can also be harmed as a result of under-pricing, because under-pricing tends to restrict the supply-side of the markets: certainly in the longer-term by discouraging investment and innovation, and possibly also in the short-term by reducing reliability and security of supply.

This is far from being a theoretical point, of academic interest only. Soviet Type Economies (STEs) spent decades during the twentieth century applying policies that sought to hold down prices below what would have been market clearing levels, across a whole range of economic sectors. The impacts on the supply-sides of markets in such economies are matters of economic history. In consequence of those supply-side impacts, they were not good places to be a consumer.³

I will return to these points below, but for the moment simply signal that, once markets have evolved to a stage where competitive constraints really start to bite on suppliers, the risks (of harm) associated with setting regulated prices at unduly low levels tend to become a very major policy issue.

1.3 Key issues arising during the transition

As noted in section 1.1 above, the transition from regulated monopoly to effective competition is a process in which market structure evolves through a number of different states. One example of an attempt to categorise the main staging posts in the process was developed a few years ago by Ofgem, the British gas and electricity markets regulator, with the assistance of Professor Michael Beesley (who, with Professor Stephen Littlechild, first developed RPI-X regulation for newly privatised UK utilities). I stress that this categorisation was meant as a sort of ‘Rough Guide’, to help policy makers think about the relevant issues, not as a rigorous or precise exercise.

The market circumstances and their (very approximate) characteristics were identified as follows:

The pre-entry stage

In the ‘pre-entry’ phase no competition has occurred. Incumbents maintain 100% market share in all relevant markets, protected by either statutory or other sources of high entry barriers.

In the utility sectors this stage has usually been ended by the relevant government removing the statutory monopoly in parts of the market, often starting with the industrial and commercial segments. Until incumbent companies face the threat of the removal of a statutory monopoly there will be no incentives to engage in behaviour to create strategic barriers to entry.

³ In much more recent times the Position Paper on price regulation of the European Regulators’ Council for Electricity and Gas referenced at footnote 27 below expresses serious concerns that regulation is currently leading to under-pricing in a number of EU Member States. See also some of the material presented in Part 3 of this Report, for example the discussion of market liberalisation in Illinois.

Pre-competitive markets

Entry occurs at this stage. The incumbents tend to continue to enjoy substantial inherited advantages: e.g. an established brand name and customer base in retail markets. The market positions of incumbents might, therefore, be classed as ‘super-dominant’, as that term has been used in European competition law, or more generally as positions of very substantial market power.

The activities of entrants tend to have only limited effects upon customers. Although entrants do begin to place some curbs on the incumbents’ market power, the market scope of the effects tends to be limited. Behaviour of an incumbent in this phase might be defensive, focused chiefly on market protection tactics. The range/variety of competitive offers tends to be heavily influenced by incumbents’ existing offers. New offers by both rivals and incumbents are limited, and biased toward ‘me-too’ options rather than toward more innovative offerings. Consumer awareness of the alternatives to incumbents’ offers may likewise be limited.

Of particular significance in terms of policy implications, incumbents in pre-competitive markets can expect to be able to price up to any caps that might be imposed by regulators.

Established competition (alternatively, ‘emerging competitive markets’)

The market development phase characterised as ‘established competition’ can be of critical importance for policy development.

Entrants who have survived begin to gain (or have gained) established reputations, in particular by winning the trust of large numbers of consumers in the market. Incumbents’ market power is significantly reduced, although incumbents would still be judged to be dominant, and possibly strongly dominant, under competition law. Competitive constraints are sufficiently strong as to afford a significant degree of protection to customers with respect to the level and range of prices and services offered. Innovative offers feature more prominently in the marketplace.

The activities of incumbents and challengers in responding to one another through offers and new tariffs tend to promote a much higher level of consumer awareness of the alternatives on offer. The potential proliferation in rival offers may, however, create some confusion in circumstances where consumers are, because of past history, relatively unfamiliar with competition in the relevant market. Consumer information issues therefore tend to rise in relative importance on the policy agenda.

Crucially, when competition is ‘established’ market conditions (e.g. substantial excess capacity) may emerge in which incumbents are no longer able to price up to caps set by regulators.

Effective competition (alternatively, 'competition developed fully')

Competition is deemed to be effective when rivalry among suppliers is intense, exerting strong constraining effects on the behaviour of all firms within the market.

As the market structure evolves, so does the appropriate policy mix/stance. The public policy aim in such circumstances is to match the policy to the changing market structure. Thus, alongside the categorisation of the different stages of the transition, Beesley/Ofgem developed a more comprehensive matrix showing a possible mapping between market structure and policy (see below).

It is this mapping between market structure and regulatory policy that is the central focus of all that follows, but one point is worth emphasising at the outset. It can be noted that, in the matrix, the withdrawal of price controls is linked to the staging post labelled 'established competition', which occurs before the development of effective competition. As will be explained in Part 2 below this is how things proceeded in the UK, with price controls lifted ahead of the emergence of effective competition.

The underlying economic case for such sequencing is straightforward. Under EU and UK law, a company is prohibited from abusing a dominant position in a market. The existence of a dominant position implies, by definition, that competition may not be fully effective, or that, if it is, that the effectiveness of competition is at risk from certain types of conduct by the dominant firm. *Nevertheless, it is not normally considered appropriate to apply price controls in markets simply because a dominant position exists.*⁴

Excessive prices may be judged to be abusive under competition law, but simple excessive pricing cases, where there is no exclusionary effect of the conduct, are rare, particularly in recent history. This reflects a view of the balance of risks involved when regulating prices (about which see the detailed analysis below). In summary it can be said that *effective competition is generally viewed as a sufficient, but not a necessary, condition for withdrawal of price controls.*

Price control therefore tends to be judged appropriate only for market structures in which incumbent firms might, in the terminology of competition law, be referred to as super-dominant or close to super-dominant⁵. In the matrix below, this is the stage referred to as 'Established Competition'.

⁴ The EU and Australian approaches to these issues are broadly similar. Under section 46 of the Australian Trade Practices Act (1974) a corporation is not prohibited from holding a position of substantial power in a market, rather it is the *taking advantage* of that power which is prohibited.

⁵ The notion of 'super-dominance' was first discussed in: *Compagnie Maritime Belge SA (C-395/96 P) and Dafra-Lines A/S (C-396/96 P) v Commission of the European Communities* [2000] ECR I-01365. para [112]-[119].

Market structure	"Pre-Entry"	Phase 1: "Pre-Competitive Markets"	Phase 2: "Established competition" (emerging competitive markets)	Phase 3: "Effective competition" (Competition developed fully)
Market Assessment	<p>No competition.</p> <p>No statutory opportunity for competition.</p> <p>Incumbents have 100% market share in all relevant markets.</p>	<p>Entry occurs.</p> <p>Incumbents have substantial information superiority and established reputation, and are able to use established scale/integration advantages.</p> <p>Incumbents retain super-dominance/very substantial market power. Entrants' behaviour does not limit the incumbents' market power. Rivals' offers are insufficient to protect the interests of many consumers.</p>	<p>Incumbents no longer have substantial information superiority. Surviving entrants gain established reputations.</p> <p>Incumbents' dominance and market power modified by rivals. Incumbents' behaviour increasingly circumvented by rivals' responses. Competition protects customers with respect to price and services offered. New markets created.</p>	<p>Competition protects consumers and promotes efficiency and innovation.</p>
Market Conduct	<p>Either entry completely blocked, or barriers to entry are very high.</p>	<p>Rivals' offers are set to overcome the inertia of targeted customer groups. Customer awareness of options dependent on initial marketing tactics. Limited variety of offers by competitors. Incumbents adopt market protection tactics.</p>	<p>Incumbent(s) respond(s) to rivals with counter offers and new tariffs. Competition maintains high customer awareness. Proliferation in rival offers and (non-price) differentiation in services.</p>	<p>Complaints, where focussed on a particular market participant or participants, may trigger investigation. If so triggered, market power and conduct reviewed as in Phase 2.</p>
Regulatory Strategy	<p>Incumbents' price and service standards determined by Regulator. Regulation starts to address known entry barriers. Regulator negotiates licence framework for competition.</p>	<p>Price controls and standards of service maintained. Complaints relating to incumbents' abuse of dominant position. Control on incumbent(s)' ability to respond to entrants' moves. Regulator monitors/addresses:-</p> <ul style="list-style-type: none"> ◆ Abuse of dominance ◆ Strategic entry barriers to entry incumbents. ◆ Entrant interest in preserving barriers selectively. 	<p>Price regulation withdrawn from relevant markets. Specific standards of service universally required in licences. Regulatory safeguards directed to abuse of survivors' market power retained.</p>	<p>Assess possible re-emerging dominance. Operation of the market may make specific regulatory safeguards unnecessary, leading to sole reliance on competition law.</p>

PART 2 Price control and regulatory price influence in the transition from monopoly to competition

2.1 Effects of price control and regulatory price supervision

As a general matter it is trite to say that, from the perspective of the consumer interest, the benefits and costs/risks of price control or of other regulatory interventions intended to influence prices (e.g. via required standard offer prices) will depend upon the particular market context. For example, the relevant trade-offs are different when the market is monopolised than when the market is competitive.

It is also the case that there are various different approaches to price control, whose relative advantages and disadvantages will also depend upon the structure of the relevant market. Thus, the very extensive cost-based assessments that might be judged appropriate when dealing with a supplier close to being a pure monopolist might be judged disproportionate in circumstances where the market power of suppliers stands at less elevated levels.

The issues that I am asked to address concern the balance of advantages and disadvantages, or balance of risks, from different policies in circumstances in which the relevant markets have been judged to be effectively competitive. By ‘risks’ I here (and subsequently) mean ‘risks of harm’, rather than simply something that is probabilistic.

It will, however, be useful first to consider the relevant trade-offs in monopolistic markets, for two reasons. First, these contexts have been much more fully explored by economists, who have collectively produced a substantial body of thinking and results on the key issues and trade-offs. Second, this body of thinking and results contains a number of elements that are directly informative in relation to issues that arise in more competitive contexts.

This discussion of the monopoly case is followed in section 2.3 by a review of the analysis of price controls in perfectly competitive markets, which sets the scene for the subsequent consideration of price regulation in markets in the later stages transition from monopoly to competition.

2.2 Monopoly regulation

By definition, when dealing with pure monopoly the imposition of price controls will introduce no risks to competition, since there exists no competitive process capable of being harmed. This distinguishes pure monopoly from contexts in which public policy intervention in relation to price setting might potentially affect the structure of competition in a market. The existence of pure monopoly therefore tends to simplify the requisite economic analysis.

2.2.1 Classic cost of service regulation

Classic cost of service regulation determines allowed prices on the basis of estimates of the costs to serve particular consumer demands, where costs are defined to include a reasonable rate of return on capital. This prevents the monopolist from exploiting

the relatively constrained substitution possibilities available to consumers by setting prices that are substantially in excess of costs. Such excessive prices would be to the direct disadvantage of consumers, and would also have negative effects on economic efficiency by restricting output.⁶

What analysis of cost-of-service regulation shows are the various possible adverse consequences that can arise from the imposition of price controls. They include:

- Excessive costs generally, because the monopolist's expectation that any reduction in costs, including from innovation, will lead quickly to a reduction in the allowed price implies that there will be only weak incentives for such cost reduction.
- Excessive costs due to 'over capitalisation', to expand the capital base from which allowed profits are calculated (by application of the allowed rate of return on capital).⁷
- Gold plating of service quality which is capable of expanding demand, the costs of which will be recovered from a higher regulated price.
- Distortions in tariff structures (where the detail of price structures is left unregulated) – for example, peak prices may be set unduly low (relative to off-peak prices) in order to increase demand at the peak so as to justify additional investment and (hence) additional allowed profit.⁸

This is not an exhaustive list, but there is a common principle at work in each example, which is also of relevance in other, more competitive market contexts. It is that the fixing of a price by public intervention changes the incentives faced by the regulated firm when making all those other business decisions that are not directly controlled by regulation. Stated generally: *price control can be expected to have significant effects on supply-side incentives.*

Of course the existence of these risk factors does not mean that price control is unwarranted, since the likely adverse effects might well be judged to be less than the benefits of intervention. The more important point here is that their existence has provided a challenge to policy makers to develop more effective policies, which might be capable of delivering consumer benefits at lower costs. The two main strands of the policy response have been:

- The development of 'incentive regulation'.

⁶ The basic argument here is that, if price is in excess of incremental cost, there must be customers who would be willing to pay something close to the prevailing (monopoly) price for extra output, and hence who would be willing to pay more than it would cost to produce that extra output. An immediate implication is that there are potential gains from trade that are unrealised, which is what is meant by economic inefficiency (an efficient outcome is one in which, other things equal, there are no opportunities for further gains from trade).

⁷ H. Averch and L. Johnson, "Behavior of the Firm under Regulatory Constraint", *American Economic Review*, Vol. 52, 1962.

⁸ E.E. Bailey and L.J. White, "Reversals in Peak and Offpeak Prices", *Bell Journal of Economics*, Spring 1974.

- Liberalisation and market opening, where feasible.

2.2.2 RPI/CPI – X and its derivatives

The development of RPI-X regulation in the UK in the 1980s – first for telecoms and then for gas, airports, water, electricity, railways and postal services – is an example of incentive regulation. The idea was to provide strong incentives for cost reduction – an issue of considerable importance in a context where privatised companies were, because of the history of public ownership, believed to be operating at inefficiently high levels of costs.

When originally proposed by Stephen Littlechild for telecoms⁹, RPI-X was considered to be a transitional economic instrument in that it was expected that price control would be withdrawn relatively quickly, as competition developed. However, once it came to be applied to services with more enduring monopolistic characteristics, such as energy and water networks, it quickly became clear that RPI-X also had potentially distorting effects on supply-side incentives.¹⁰

Identified risks in this case include:

- Under-investment, since in providing less explicit guarantees than cost-of-service regulation as to future recovery of capital expenditures, including recovery of a reasonable return on capital, investors may fear that future regulators will, influenced by pressures from consumer interests, set prices at below cost-recovery levels (the ‘policy credibility’ problem).
- Reduced product or service quality: if costs can be cut by reducing quality then, since (unlike for cost-of-service regulation) price will be unaffected, this can be a quick route to higher profits.

Although the practical experience with RPI/CPI–X regulation has been generally positive, the risks associated with these potential problems concerning investment and product/service quality has tended to lead regulators to develop the approach in ways that are somewhat at variance with original intentions. Specifically, regulators implementing the approach have pursued a variety of paths that have tended to increase complexity. For example:

- Not least because of successes in promoting cost reduction, it was recognised that, if RPI/CPI-X was to be implemented on a continuing basis, it would be necessary to engage in quite major review exercises that sought, periodically, to realign prices and costs. Given the objective of providing protection to consumers, it would be difficult to justify policy indifference to outcomes in which prices could be observed to be substantially in excess of costs. The conduct of such regulatory reviews takes RPI/CPI-X back in the direction of cost-of-service regulation, and indeed it can, in the new circumstances, be

⁹ S.C. Littlechild, *Regulation of British Telecommunications Profitability*, London: HMSO, 1983.

¹⁰ D. Helm and G.Yarrow, “The Regulation of Utilities”, *Oxford Review of Economic Policy*, No. 4, 1988.

regarded as having evolved into something very similar to cost-of-service regulation with regulatory lag.¹¹

- Substantial intervention has developed in relation to the setting of service standards and to providing incentives for maintenance or enhancement of service quality.
- Various attempts have been made to provide greater incentives for efficient capital expenditure.

As a result of this process, a hybrid form of regulation has developed which takes ideas and elements from a number of different sources, and is constantly being adjusted and adapted. It is in no sense ‘light touch’, and the development has served to reinforce the view that regulation should not be regarded as a good substitute for competition.

2.4 Price control in competitive markets

Participants in energy markets tend to have perspectives on price control that are heavily influenced by the kinds of applications discussed above, in which the central concern of policy is to protect consumers against monopoly pricing. Price control policies have, however, frequently been applied to competitive markets and, given that the current issues with which the AEMC is concerned relate to markets that have been found to be effectively competitive, experience drawn from these other, non-monopolistic circumstances is highly relevant.

The normal rationale for the application of price controls in *competitive* market situations is to redistribute income between producers/suppliers and consumers. This is, of course, also a factor motivating regulation of monopoly, but the difference in that case is that price control may also increase economic efficiency (see footnote 6). In contrast, price control in competitive market situations generally harms economic efficiency. That is, to provide benefits to one set of market participants, other market participants are harmed to a greater extent.

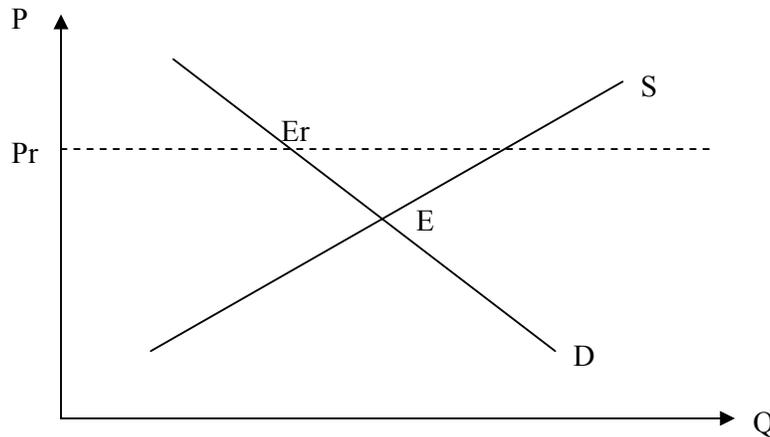
2.4.1 The two cases

There are two textbook cases, depending upon whether the price controls are intended to favour suppliers or to favour customers.

Figure 1 shows a situation (“case 1”) in which the aim is to provide support to suppliers, as might happen in the case of a system of agricultural protection. The regulated price *floor* P_r is above the market clearing level, and the market equilibrium occurs at E_r . There is excess supply and the traded volume in the market is ‘restricted’, meaning suboptimally low (the volume traded at E_r is lower than the volume traded at the competitive equilibrium E). The size of the market is limited by willingness to pay.

¹¹ Regulatory lag refers to a situation in which prices are re-set only periodically, so that in the intervening periods and even for cost-of-service regulation there may be significant divergences between prices and costs.

Figure 1



In situations where the quality of the product or service can be varied, the high regulated price might be expected to produce tendencies to gold plating, similar to cost-of-service regulation. In the monopoly case the higher quality induces a higher price; in the competitive case being considered here the higher quality might induce a higher level of demand/volume. Since price is above cost, any extra sales will be profitable.

It is also worth noting that the effects of this type of price floor regulation are akin to the effects of cartelisation in a market, which also serves to hold prices above competitive levels. Moreover, for reasons that will be explained in section 2.4.2 below, even if the price intervention takes the form of a price ceiling rather than a price floor, the existence of intervention can help promote supra-competitive prices by facilitating tacit co-ordination.

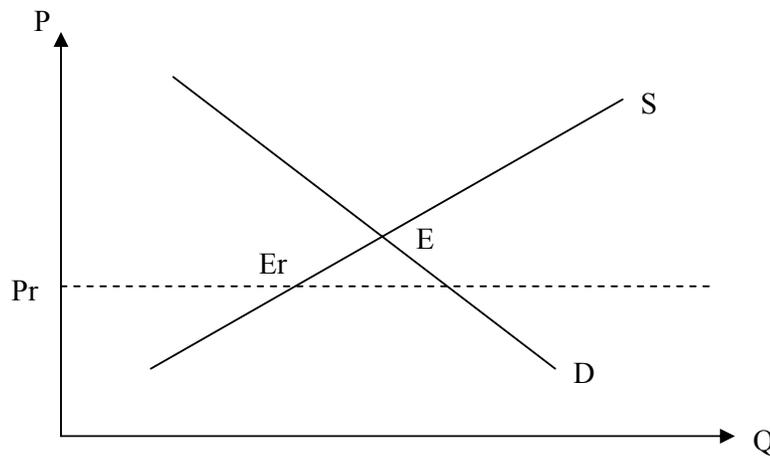
In contrast, figure 2 shows the situation (“case 2”) in which the aim is to provide cheaper products or services to consumers. The regulated price *cap* Pr is below the market clearing level¹², and the market equilibrium is shown as Er . There is excess demand, and the traded volume in the market is again ‘restricted’, being less than the volume traded at the competitive equilibrium E . In this case the size of the market is limited by willingness to supply.

If the quality of the good or service can be varied, the tendency in this case is toward degradation of quality so as to reduce costs (and compare with RPI-X regulation for monopolies). In the diagram this would result in a downward shift in the supply

¹² The motivation for price control in this case is similar to the motivation for price regulation in the market conditions reached in the later stages of transitions from monopoly to competition, namely to exert a downward influence on prices paid by consumers. However, in transitional conditions such as those of the retail energy markets in Victoria price caps will be set at values intended to be *above* competitive market clearing levels. The implications of this are examined in section 2.4 below.

curve, and hence to an expansion of output of the now lower-quality product and to higher returns. Although lower quality could also be expected to lead to a contraction in demand, this factor plays no role since, as can be seen from the diagram, movements in the demand curve D do not affect the equilibrium E_r , which is determined by the regulated price and supply-side factors only.

Figure 2



2.3.2 *Effects of deregulation in the two cases*

The textbook diagrams are a useful means of getting first sight of some of the likely consequences of deregulation. The first, and most obvious point, is that what subsequently happens to prices will depend heavily upon which of the two sets of circumstances pertain.

In case 1, where regulation is used as a protectionist device for suppliers, to hold prices up, deregulation can be expected to lead to price reductions and to an expansion of the market (higher volume traded). If there has been gold-plating of product or service quality, it is likely that there will also be some reduction in average quality.¹³ The overall expectation is therefore: lower prices, higher output, and possibly some reduction in average quality. Thinking in more concrete terms, this is the kind of pattern that frequently emerges following airline deregulation.

In case 2, where a price ceiling or cap has been adopted to keep prices low for consumers, deregulation can be expected to lead to increases in prices, increased volume, and, if quality degradation has occurred in consequence of regulation, to improvements in average quality. In concrete terms, this is the pattern of effects typical of deregulation of markets in Eastern Europe following the collapse of communism.

¹³ The textbook reasoning assumes that there is only one variety/quality of product/service. In practice, there are often many qualities of product/service on offer.

In case 2, although the objective of the price control may be to keep prices low, it can be seen – either from the economic theory or from practical experience – that it is not necessarily the case that consumers are better off as a result of regulation. Total benefits to consumers, or consumers’ gains from trade, can be measured by the amount that they would in aggregate be willing to pay for the volume traded in the market and the amount that they do actually pay. The problem is that, although prices are kept low by regulation, and hence there is a greater consumer benefit for each unit actually traded, the total volume of output exchanged is lower than at the competitive equilibrium.

Inspection of figure 2 indicates that one of the factors affecting the overall impact on consumers is the elasticity of supply, since if the supply curve is relatively flat, any attempt to hold down prices will lead to substantial reductions in volume available to the market. Although the illustrative diagrams are static in nature, it is relevant to note at this point that supply elasticities tend to be greater in the longer term than in the shorter term. Thus, a typical time profile of effects of price control on aggregate consumer welfare is one in which initial benefits may be substantial – for example because supply is not greatly affected in the short-term by virtue of the existence capital assets inherited from past investment decisions – but in which those benefits subsequently shrink, and then turn into consumer harm, as a result of lack of new investment and the consequential, increasing restrictions of supply (i.e. the equilibrium E_r moves to the left over time).

2.3.3 *Comments*

The underlying points in all this are both very basic and, in policy terms, very important. First, the common factor in both cases is that *deregulation tends to lead to an expansion of economic activity*. Second, regulating prices at below market clearing levels can be expected to damage supply-side incentives, and the negative effects of the resulting incentive effects are liable to accumulate over time.

As already noted, STEs provide examples of the effects under discussion. Many basic commodities in these economies, including energy and transport, were supplied at very low prices, and there can be no doubting that, other things equal, there were resulting benefits to consumers. The problems lay in the fact that other things were not equal: supply-side incentives were poor, and overall supply was restricted. These concrete examples also serve as a reminder that the restrictive effects are felt not just in terms of the volume of products and services traded, but also in terms of their quality.

The implications of the points for expectations concerning the likely effects of deregulation are, I think, equally clear. Whether prices will rise or fall will depend upon the starting position (is it case 1 or case 2?). In both cases it can be expected that economic activity will expand and economic efficiency will increase, although the effects on different market participants (consumers and suppliers) can be expected to be much more mixed.

2.3.4 *Effects of uncertainty*

The general position in energy markets, like in other utility sectors, is not one in which price controls were applied to a competitive market and public policy is now contemplating deregulation. Rather, competition has developed in what were previously conditions of monopoly. Thus, although the ‘regulation of competitive markets’ points developed above are relevant in the later stages of the transition from monopoly to competition, there are one or two additional, highly important points to be taken into account.

In particular, since the policy history is one in which there has been a long period of price control *there will likely be significant uncertainty concerning the (competitive) market clearing level of prices, and about whether any current, regulated (or standard offer) price is above or below the market clearing level.*

To illustrate, starting from cost-of-service price levels for a monopoly supplier, it might be expected that, since costs tend to become inflated/padded in conditions of monopoly, competitive market clearing prices will be below the regulated price. Indeed this is frequently one of the major motivations for market opening. However, in circumstances in which input costs are rising regulated prices may come to be below market clearing levels, for one or both of two principal reasons:

- Regulatory lag may mean that it takes some time for rising costs to be translated into higher, allowable prices.
- In periods of rising costs/prices, any political influences on regulatory decision making will typically lead to pressures not to allow price hikes that are fully commensurate with increases in costs.

If, then, a price ceiling is maintained in conditions in which a market is competitive, but in which there is uncertainty about the changing (over time) market clearing price level, we might expect, as a first approximation¹⁴, to find that:

- When the price cap is *above* market clearing levels it will be non-binding, and hence it will have no short-term influence on pricing outcomes, and
- When the price cap is binding, and therefore has an immediate influence on market prices, it is because the cap is *below* market clearing levels.

The implication is that there will be case 2 outcomes in some sets of circumstances/periods. Further, given regulatory lag and potential political influences, price controls can be expected to bite when market clearing prices are high, and to bite harder the higher market clearing prices become.

Although price controls (or price influence) may not be constraining in many circumstances/periods, the circumstances/periods in which they *do* have influence are precisely those in which, depending upon the type of market under consideration, (a)

¹⁴ Further complications, in particular the prospect that the existence of a price cap might actually lead to *higher* prices, will be discussed below.

the profits of competitive suppliers would normally tend to be relatively high or (b) the margins of competitive suppliers would normally be at their most vulnerable. Retail energy supply corresponds to the second of these alternatives, in that the margins of retail suppliers tend to be most at risk during periods of unexpectedly large increases in wholesale energy prices.

In consequence of these effects, supply-side incentives can be seriously distorted/damaged by the presence of price regulation, even if there are long periods in which price controls are not actually binding. When controls do bite it will tend to be in market conditions and at times that are particularly significant for the recovery of capital costs, and hence for investment incentives. And if investment is chilled, restricted supply in the future may lead to outcomes in which price caps eventually become binding in more periods (because market clearing prices are increased by poor supply-side performance) – an example of the kind of adverse dynamics that tend to be associated with this type of interventionist policy.

2.4 Transitional price regulation in conditions of uncertainty

The discussion this far has considered the impacts of price regulation in the two end states of the transitional process associated with liberalisation, and it will be clear from what has been said that there is generally little to be said for the application of caps to hold down prices in fully competitive markets. They will tend to distort supply side incentives and reduce the level of economic activity.

In practice, therefore, the case for retention of some or other form of price regulation is generally cast in terms of addressing problems arising from market power. Notwithstanding the economists' model of perfect competition, the vast majority of real world markets, including many that would reasonably be categorized as competitive or effectively competitive, are characterised by the existence of some degree of market power. Indeed, the dynamics of competitive processes can be seen in terms of competition for temporary positions of market power, obtained by gaining advantages that cannot, at least immediately or very quickly, be fully matched by rivals – a point recognised as far back as the *Wealth of Nations*, in which Adam Smith explains that it is *permanent* or *persistent* monopoly that is likely to give rise to problems of inefficiency, not temporary monopolies.

It is therefore appropriate to consider the implications of price regulation in markets characterised by a mix of competition and market power. Clearly, the mix will be tilted toward market power in the early stages of a market opening transition, and toward competition toward the end. Since the latter mix/balance is the more relevant for assessment of the position in retail energy markets in Victoria, the remarks that follow are directed chiefly at this state of the market. However, a number of the points that will be made have a more general validity.

2.4.1 The general problem identified

To restate what has already been said, price caps or ceilings in market economies are usually motivated by a desire to protect consumers against excessive pricing arising from the exploitation of market power. Since the significance of market power tends

to decline as liberalisation proceeds, the requirement for protection also tends to decrease.

There may, however, be policy concerns about residual market power, even in circumstances in which markets have moved beyond the ‘pre-competitive’ stage identified in section 1.3. In particular, there may be fears that, given the inevitable uncertainties about market evolution, the scope for exploitation of market power may have been under-estimated, or that market developments may quickly lead back to situations in which significant market power is again a factor. Such fears can lead to arguments for ‘precautionary price caps’ (PPCs) or similar forms of price supervision such as standing offer prices.

In theory the desired effect of such price regulation is that it will not constrain or otherwise impede competitive conduct, but that it will constrain the exploitation of (residual) market power. In practice, achieving this degree of precision in the targeting of public policy intervention is an impossible task, and, as a practical matter, it is important to recognise that impossibility.¹⁵

The underlying problem is the difficulty in specifying *ex ante* forms of price control that can distinguish between market prices that are ‘high’ due on the one hand to normal competitive factors, and on the other hand to the exploitation of market power. In order to be able to do this, what in effect is required is a form of price regulation that indexes the controlled price to the competitive price. However, that is a far, far more difficult exercise than regulating prices in a way that links them with costs, in the manner of traditional monopoly regulation. And it can safely be said that regulators, no matter how wise and no matter how well resourced, could be expected to make significant mistakes – because the problem has to do with information. The determination of a competitive price is a process that (implicitly) makes use of huge amounts of information, of such scale and scope as can not feasibly be processed by a single decision making unit such as a regulatory agency.¹⁶

To give a concrete example of the problem, suppose that a PPC is set on an inflation-adjusted (RPI or CPI basis) for a period of years, at a level that is intended to sit above competitive market clearing prices by about 10%. Once the cap is set, it might turn out that market conditions change in ways that lead to increases in (competitive) prices of over 10% relative to previous forecasts. In those circumstances, the cap will become binding, even though the price hike has nothing to do with market power. The resulting outcome will therefore be of the case 2 type described above: prices will be constrained to less than market clearing levels, with the adverse effects on supply-side incentives and on the level of economic activity in the market which have been identified.

¹⁵ Note that this policy targeting problem does not arise in relation to the regulation of monopoly, although it has echoes in the problems that can arise when forward-looking costs rise to levels considerably above historic costs.

¹⁶ See F. von Hayek, “The pretence of knowledge”, Nobel Memorial Lecture, published in the *American Economic Review*, December 1989. A competitive price is something that is discovered by a competitive process operating in a particular economic context, and the ability of regulatory agencies to forecast what is yet to be discovered by such a process in yet to be encountered economic contexts is, quite manifestly, highly limited.

In the hypothetical circumstances the distortions caused by price regulation are the result of a chance outcome (albeit an outcome whose possibility could be easily anticipated). However, it is also appropriate to recognise that the very existence of a mechanism of regulatory intervention is liable to create biases that increase the risks of the identified distortions in supply-side incentives. Specifically, whilst it may be reasonably straightforward for regulators to agree to price caps that are above market clearing levels when market prices are relatively low and falling, that position can be much more difficult when there are strong, upward pressures on market clearing prices, and when there therefore tend to be stronger political pressures for intervention to hold prices down.

In other work I have pointed to what might be viewed as a ‘Say’s law of regulation’, whereby supply creates its own demand.¹⁷ That is, if regulators have powers to act in certain ways, that itself will tend to create demands, by interested parties who stand to benefit, for those powers to be used. Thus, for so long as price control powers are retained there will tend to be demands that they be used; and if price controls are not biting, those demands will tend to be for tougher controls that do bite.

Similar issues were recognised in relation to the privatisation of utilities. One of the arguments for private ownership was that it provided barriers to the kinds of political interventions in markets that were all too easy under public ownership.¹⁸ Thus, the creation of new rights and new interest groups was arguably central to successful policy, although, where monopoly and a requirement for continued regulation were involved, it was also essential that constraints be placed on regulatory authorities, for example by giving them relatively focused and limited duties, and by ensuring that they could fulfil those delegated duties in ways that were substantially independent from general government.

When price controls are maintained in markets that are becoming increasingly competitive, there is therefore a risk that they will be used for rather more than providing long-stop protection against the exploitation of substantial market power; and it should be obvious from the earlier remarks that the risks of misuse are increased by uncertainty. Thus, when prices are rising and when it is difficult precisely to attribute the increases to particular causal factors, it is all too easy to argue that the higher prices are attributable to market power, and that they therefore call for public intervention to prevent further exploitation of consumers.

2.4.2 *An additional market power problem*

Up to this point, the analysis has relied upon economic frameworks in which a regulated price that is set above the market clearing level will have no influence on market outcomes, and this may very well be the case when competition is particularly robust. Competitive markets can, however, be at some risk from tendencies towards collusion or co-ordination of conduct, even when they are relatively unconcentrated. As Adam Smith famously pointed out in the *Wealth of Nations*:

¹⁷ See for example Tim Keyworth and George Yarrow, *Toward an intelligent design for energy and environmental regulation*, Oxford: Regulatory Policy Institute, 2007.

¹⁸ D.E.M. Sappington and J.E. Stiglitz, “Privatization, Information and Incentives”, Washington DC: National Bureau of Economic Research, June 1988.

“People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices.”

Later economists have added to this old wisdom by showing, analytically, how co-ordination can arise in the absence of ‘meeting together’, via explicit signalling or via non-cooperative/tacit collusion. The general policy instruments for addressing these issues lie in the domain of competition policy, which is concerned with collusion and cartelisation as well as with other potentially harmful uses of market power. Today, therefore, competition authorities routinely rely on the outputs of this economic research when considering the kinds of market conditions in which such tacit co-ordination or ‘non-cooperative’ collusion might arise.¹⁹

The specific retention of a direct public policy influence on prices therefore amounts to the use of a second policy instrument, over and above the enforcement of competition law and policy, to what may be termed a ‘belt and braces’ approach. In general, at least if public policy is to be consistent and coherent, this will tend to be justifiable only in circumstances in which there exist potential market power problems that are perceived to be beyond the effective reach of competition policy.

More significantly, regulation of prices is itself a necessarily monopolistic activity – prices are imposed across the market by a single economic agent (whether government department or regulatory agency). In one sense, therefore, a market can never be fully competitive whilst this monopolistic influence remains. Thus, even if the motivations for such intervention are wholly benign – which, as the cumulative research on the effects of regulation has shown, is a very large ‘if’ indeed²⁰ – it is necessary to recognise all the risks and limitations associated with the intervention of a monopolistic agency.

A gedankenexperiment

Suppose that a price cap is set at levels that are intended to be above average market clearing levels, as a precautionary measure to limit any potential for exploitation of market power. Now forget for a moment the motivation for this intervention and simply consider the factual situation: a monopolistic entity has caused prices to be posted in the market which are above the competitive level. Looking at this situation through the lens of competition policy and law, there would be an immediate suspicion of one or more of the following:

¹⁹ For example, *Market Investigation References: Competition Commission Guidelines*, London: Competition Commission, June 2003.

²⁰ Surveys of empirical research on economic regulation are fairly clear about some of the basic results. For example: “*As a positive theory of regulation, the normative theory of welfare economics [i.e. the public interest theory of regulation] is obviously incorrect.*”, P.L. Joskow and R.G. Noll, “Regulation in theory and practice: an overview”, in G. Fromm (ed.), *Studies in Public Regulation*, London: MIT Press, 1981; “*The effects of economic regulation often differ considerably from the predictions of “public interest” models, which assume that regulation is intended to ameliorate market imperfections and enhance efficiency*”, P.L. Joskow and N.L. Rose, “The effects of economic regulation”, in R. Schmalensee and R. Willig (eds.), *Handbook of Industrial Organization, Volume II*, North-Holland, 1989.

- Price leadership, whereby the posted prices facilitate generally higher prices across the market.
- A collusive or co-ordinated equilibrium, in which the posted prices serve as focal points for co-ordinated behaviour.

In both cases the implication is that the regulated price, which is imposed via a monopolistic policy process, can actually create market power where ‘but for’ the price control market power would not exist, or would be at a significantly lesser level.

2.4.3 Implications of focal points

One of the standard results of economic theory is that, where companies compete with each other on a similar, repeated basis, it is possible that any of quite a wide range of prices could be sustained as a ‘tacitly collusive’ equilibrium – i.e. companies would not wish unilaterally to deviate from their pricing strategies because of the anticipated future consequences of so doing – provided that the rivals do not discount the future very heavily. The result is generally referred to as the ‘Folk Theorem’.²¹ Given the multiplicity of potential equilibria, the obvious question to ask is: is there any way of predicting which of the outcomes are more likely to occur? This leads to the question of how companies might co-ordinate to reach a particular pricing position (from which, once established, they will be reluctant to depart).

Like many economic issues, the problem is one of information, and one major strand of thinking in this area is based on the notion of ‘focal points’, first popularised among economists by Thomas Schelling.²² Schelling gives the example of a co-ordination problem in which two people, who are not in contact with one another, have each to choose a location in New York to visit, with the intention of meeting the other person involved in the exercise. In the abstract, there are thousands upon thousands of possible locations. In practice, thinking of New York, subjects will tend to make use of a relatively small list of locations – the Empire State Building, the Statue of Liberty, Time Square, etc. – and the chance of meeting is much higher than might be expected.

²¹ There are numerous variations of the Folk Theorem. In a classic paper, Friedman presented one of the first (and most commonly understood) versions where the future is discounted and the game is played infinitely. Aumann, Shapley and Rubinstein examine the Folk Theorem where there is no discounting, but where a hierarchy of punishments is used. Fudenberg, Levine and Maskin extend the analysis to games of moral hazard, and specifically examine the case in which players can only observe public information about other players actions. Fudenberg and Maskin examine the Folk Theorem in games of finite length and incomplete information about the possible actions of their opponents. See J.W. Friedman, “A Non-cooperative Equilibrium for Supergames” (1971), 38, *Review of Economics and Statistics*; R.J. Aumann and L.S. Shapley “Long-Term Competition – A Game Theoretic Analysis” (Economics Working Papers No 676, UCLA September 23 1992) and A. Rubinstein, “Equilibrium in Supergames with the Overtaking Criterion” (1979), 21, *Journal of Economic Theory*; D. Fudenberg, D.K. Levine and E Maskin, “The Folk Theorem with Imperfect Public Information” (1994), 62, *Econometrica*; D. Fudenberg and E. Maskin, “The Folk Theorem in Repeated Games with Discounting or with Incomplete Information” (1986), 54, *Econometrica*. More generally, see: J. Tirole, *The Theory of Industrial Organization*, Cambridge Mass: The MIT Press, 1988 or D.M. Kreps *Game Theory and Economic Modelling*, Oxford: Clarendon Press, 1990.

²² T.C. Schelling, *The Strategy of Conflict*, Cambridge Mass: Harvard University Press, 1960.

Similar lines of analysis appear in the ‘Heuristics and Biases’ stream of economic/psychological work stimulated by Daniel Kahneman and Amos Tversky.²³ This shows, via careful empirical studies, the importance for final outcomes of the various pieces of information from which decision makers *start* when addressing a problem. In traditional expected utility theory (EUT) this starting point or anchor, which is an aspect of the way the decision maker ‘frames’ the problem, plays no role in determining outcomes, but a substantial body of empirical work now rejects that implication of EUT.

If, then, there are obvious focal points in a market, there is clear risk that, by inducing similarity among market participants in their starting points for assessment, the effect of price regulation is to achieve a co-ordination of behaviour that would be impossible ‘but for’ the policy-induced focal points. One attempt to test this hypothesis is set out in a paper by C.R. Knittel and V. Stango²⁴, who analyse data from the American credit cards market in the 1980s. Knittel and Stango describe their research as follows:

“In this paper, we empirically test the hypothesis that a nonbinding price ceiling may lead to higher prices, by serving as a focal point for tacitly collusive price setting. We test the focal point hypothesis using data from credit card issuers during the 1980s. During our sample period, most credit card issuers face state-level price ceilings that could plausibly serve as focal points. These price ceilings vary across and within states; there is also a group of states with no ceiling.”

They found that tacit collusion at nonbinding state-level ceilings was prevalent during the early 1980’s, but that national integration of the market reduced the sustainability of tacit collusion by the end of the decade, and they concluded as follows:

“The finding that a nonbinding price ceiling may facilitate tacit collusion has important policy implications. For example, price caps recently have been imposed in the electricity industry to curb prices during peak demand periods. However, the high day-to-day variance of electricity demand implies that these price caps frequently will be nonbinding. Our results imply that any welfare analysis of the caps should consider the possibility that firms might use them to facilitate tacit collusion. This is particularly important given the degree of distortion in market outcomes that we observe as a consequence of ceilings; they affect not only pricing, but also patterns of entry.”

The reference to price caps in electricity is specifically to the wholesale price caps imposed in systems such as California and PJM (Pennsylvania, New Jersey, Maryland). Nevertheless, the general point is clearly also applicable to retail markets.

2.4.4 Information, transparency, consumer protection and tacit collusion

The basic rationale for price caps is to protect consumers against potential exploitation of market power but, particularly as competition develops, another

²³ See, for example, D. Kahneman, P. Slovic and A. Tversky, *Judgment under Uncertainty: Heuristics and Biases*, Cambridge: Cambridge University Press, 1982.

²⁴ C.R. Knittel and V. Stango, “Price Ceilings as Focal Points for Tacit Collusion: Evidence from Credit Cards”, *American Economic Review*, December 2003.

argument that appears is that such caps provide consumers with relatively simple and clear information that they can use when evaluating alternative tariff offers. In this way, so the argument goes, consumers are less likely to get bamboozled by the plethora of different tariffs available, and therefore less likely to be over-charged.

The argument is an old one, and appeared nearly fifty years ago in what became a notorious UK Restrictive Trade Practices case, *Black Bolts and Nuts*, in which cartelists managed to persuade the Restrictive Practices Court (since abolished) that their common tariff reduced search costs for their customers, and that the fact that customers did not have to ‘go shopping’ conferred benefits sufficient to merit an exemption from the application of the general prohibition on anti-competitive agreements.

The judgment was subject to withering criticism from the outset, and Professor Dennis Swann’s comments are typical of many²⁵:

“The court’s arguments seem like an inversion of antitrust logic, which would regard intelligent but no doubt selective shopping around on the part of purchasers as an indispensable feature of the competitive system! The court seems to have had at the back of its mind the extravagant assumption that competition would only work if all potential offers were considered; ...”

Swann’s comments of more than a quarter of a century ago point to the relevant issues, which concern the acquisition, transmission, processing, interpretation and use of information, but there is now a much greater body of both theoretical and empirical work on the implications of different ‘information conditions’ in markets. The basic fallacy in the *Black Bolts and Nuts* case arises from a failure to analyse the impact of a change information conditions, such as might be caused by a price cap or by a requirement for standard offers, on the economic equilibrium as a whole.

It is true that standardisation in prices, whether by cartelists or by regulators, can reduce consumer uncertainty and search costs. However, that is only one, relatively direct effect of standardisation. Standardisation, by definition, reduces variety, and in other circumstances it would be obvious that a reduction in variety might be considered a detriment. Somehow, however, this point seems to get lost when the commodity in question is information, and there can be an unthinking hankering after situations in which more or less everyone knows the same things. Even economists are not immune to the tendency, particularly where they have been taught by static theorists to consider ‘asymmetric information’ to be a source of market failure when, in fact, the ability of competitive markets to work with, and make effective use of, highly dispersed information is one of their greatest strengths relative to monopolistic alternatives.

In the particular case of price caps and standard offers, there seems to be an element of “let’s reduce the amount of information the consumer does not know by reducing the amount of information that there is to be known”. Although unintended, the consequence is likely to be that, as a result of standardisation, the consumer knows less, simply because the market is impoverished and there is less to know. One of the

²⁵ D. Swann, *Competition and Consumer Protection*, Penguin Modern Economics Texts, 1979.

ways in which such impoverishment might occur is if competitive offers are framed by comparison with a price capped or standard offer, implying a bias toward ‘me too’, less innovative alternatives (albeit priced at a discount, and therefore providing some customer benefits).

In any market, then, policy that changes information conditions needs to concern itself with a range of potential effects that can occur. Further, any policy that is intended to change information conditions should, as a matter of conformity with best practice regulatory principles, consider alternative ways in which the policy aims can be achieved. Given these points, and in relation to the application of precautionary price caps or standing offers, the following are some of the major considerations that should properly be taken into account:

- As indicated earlier, price caps or standard offers set above market clearing price can act as focal points for pricing co-ordination, to the detriment of consumers. More generally, it should be recognised that, in changing information conditions for consumers, such ‘standardising’ public intervention would also change information conditions for suppliers, and, as is well recognised, pricing transparency can facilitate tacit collusion, even when it does not (as it would for price caps or standard offers) create focal points.²⁶
- If the aim is to reduce customer information acquisition costs, there are obvious alternative ways of doing so *without constraining prices*. Indeed, constraining prices in order to improve customer information would appear to be a manifestly ill-targeted approach to policy. The strangeness of the logic can be illustrated by translating it into another context: if, for example, it were considered that consumers lacked information about the range of cars on offer, and about their various prices, it would, I think, be considered odd to argue that the way forward would be for each of the suppliers to make a standard offer, at similar prices. Rather, the approach would be to consider whether there were ways that could usefully be used to collect and disseminate information about what was available in the market.
- Since constraining prices can, for reasons set out above, be expected to have distortionary effects on competition, alternative means of encouraging greater information flows to consumers would, with high likelihood, have less restrictive effects on competition. In that event, the restrictions on competition could be said to be not necessary, or not indispensable, for the achievement of the (informational) policy objectives.
- Similar points apply in the event that the price cap or standing offer prices are motivated by a desire to protect vulnerable customer groups. In this circumstance, the confusion and the associated risk has been well identified in

²⁶ M. Ivaldi, B. Jullien, P. Rey, P. Seabright, and J. Tirole, *The Economics of Tacit Collusion*, Report for DG Competition, European Commission, March 2003. A number of empirical case studies have also concluded that statutory requirements to publish firm-specific prices or rates may have facilitated tacit collusion including: S. Albæk and P. Møllgaard and P.B. Overgaard “Government-Assisted Oligopoly Coordination? A Concrete Case” (1997), *The Journal of Industrial Economics*., and J. Schmitz and S.W. Fuller, “Effect of Contract Disclosure on Railroad Grain Rates: An Analysis of Corn Belt Corridors” (1995), *Logistics and Transportation Review*.

a recent position paper of the European Regulators' Council for Electricity and Gas (ERGEG)²⁷:

“... protecting vulnerable customers should not be confused with maintaining regulated energy prices for all (or certain categories) of customers. ERGEG considers regulated energy tariffs to be distortionary and should be abolished.

It is ERGEG's view that any policy aimed at protecting vulnerable customers be brought into line with market conditions. It is of utmost importance that any wish and attempt to protect vulnerable customers does not hinder the efficient functioning of a competitive market.”

- Account also should properly be taken of the potential for crowding out of private information processing activities. Apart from reducing search and discovery activities by consumers themselves, public intervention may crowd out information provision services offered by other bodies, including consumer magazines, more general magazines and newspapers, and price-comparison web-site types. The discovery capacities of markets would be reduced in consequence.
- Finally, there is the rather serious problem that price caps and standard offers may actually be misleading to consumers. I noted earlier that, because of the history of the energy sector, most consumers might be expected to ‘frame’ the idea of public intervention in pricing in terms of protection from the risk of monopoly prices. Whilst it remains true that the motivation for the retention of public price influence in more competitive markets continues to be based upon protection of consumers against the exploitation of market power, it is generally less well understood that a precautionary price cap or standard offer is, by design and because of the changed market context, intended to be set at *above* market clearing levels. To the extent that the intention is achieved – and I have earlier stressed the difficulties surrounding estimation of market clearing prices and the resulting risks of getting it wrong – the capped or standard offer price might be considered a *bad deal*. Customers should be able to do better than this, and many no doubt will. However, the fact that the price is ‘endorsed’ by reputable public bodies could plainly lead to it being considered to be a reasonable deal, such that there is no point searching for anything much better. Similarly, in framing the evaluation of alternative tariffs relative to a standard offer, consumers may falsely believe that they are getting a very good deal if the alternative offers a significant discount, when in fact the discounted tariff may still be above a market clearing level. In these ways the policy could harm the very people it is intended to assist.

2.5 Assessment of the trade-offs in the transition to competition

As discussed above, public policy needs to balance the various risks or hazards associated with price regulation and deregulation. In the context of relevance to the AEMC these risks are principally:

²⁷ “End-user energy price regulation: an ERGEG position paper”, 18 July 2007, ERGEG, Brussels.

- Exploitation of market power, to the detriment to consumers.
- Hindrance of competition and of the development of more effective competition, via two principal mechanisms:
 - Inadvertent/unintended facilitation of the creation and exploitation of market power, typically when the regulated price cap is set above market clearing levels, and
 - Distortion of supply side incentives which serves to restrict the level of economic activity (volume, investment, innovation, etc.) in the relevant market.

The balance of risks/hazards depends upon the particular market context of the day and, in a transition from monopoly to competition, this context will likely be changing relatively rapidly.

The required matching of public policy to the changing market context was introduced via the illustrative matrix of section 1.3, and a number of points can be brought together by reference to a combination of that matrix and the subsequent discussion.

2.5.1 The early stages of the transition

In the early stages of the transition, incumbent suppliers can be expected to continue to enjoy substantial market power. The key defining feature of these early stages is that, assuming a reasonably conscientious regulator has set a price cap based upon a cost of service or RPI-X approach, suppliers have sufficient market power to price up to the cap, unilaterally, for any realistic expectation about market evolution through the pricing period. That is, the price cap is always binding.

In these circumstances, it is clear that relaxation of the price cap will lead to higher prices to consumers. On the other hand, the risks/hazards to effective competition are limited, for the simple reason that competition is weak. Specifically:

- The risk of facilitating coordination is largely irrelevant, since suppliers have sufficient market power unilaterally to price up to the cap.
- Whilst regulation inevitably creates some distortions to supply side incentives – the traditional trade-offs of monopoly regulation are unavoidable – provided that the price cap is set at a level that allows recovery of efficiently incurred costs, including a reasonable return on capital, the harmful effects are likely to be less severe than those that occur when prices are constrained to be below market clearing levels.

2.5.2 Established competition

As competition develops, the trade-offs change – and complexity tends to be added by the tendency for competition to develop at different rates in different parts of the market. The key, inter-related changes that occur are:

- A price cap set according to established regulatory principles may no longer be binding in some states of the market that might be considered ‘realistic possibilities’.²⁸
- The price cap may be set at below competitive levels in some states of the market.

The changes are inter-related because, if competition has developed to a level where, in some market circumstances and periods, rates of return fall below ‘normal’ levels, then there will be other market circumstances and periods in which rates of return will have to be above normal.²⁹

Another way of putting the points is to say that competitive constraints mean that, in certain market circumstances, prices will be below levels sufficient to cover average total cost (ATC), where costs are defined to include a normal rate of return on capital – for example, because of excess capacity or position building by new entrants. If, in classic fashion, a price cap were set at a level close to ATC (including a normal return on capital), the effect would be that an efficient supplier would necessarily earn a less than normal rate of return, with damaging implications for investment and innovation. In terms of profits, the supplier would see an upside that was truncated by regulatory controls alongside a downside that was increasing in significance as competitive constraints grew. To avoid highly damaging incentive effects, any price cap in this stage of competition must be set significantly above ATC, so as to allow suppliers an above normal rate of return on capital in at least some market circumstances. That is, any cap must be above the level at which it would be set for a monopoly with the same cost structure.

In terms of effects on consumers, when price caps are set in this way there is clearly less direct protection. Thus, in states of the market where suppliers can price up to their caps, the degree of consumer protection is less than would have been achieved by traditional cost of service regulation. But that, of course, is how it should be, since the whole purpose of the transition is to shift from reliance on regulation to reliance on competition; and it is the ‘established competition’ stage of the transition that significant benefits from competition are starting to flow.

In consequence of the above points, the regulatory task in setting price controls is potentially subject to a step-jump increase in difficulty. Traditional utility regulation is heavily focused on cost assessments: setting price controls during the established competition stage of a transitional process must also be based upon an assessment of uncertain, changing and increasingly competitive market conditions. Whilst few who have been involved in cost-based price control processes would judge them to be easy

²⁸ The emphasis here is on the word ‘possibility’. Whether or not such outcomes are considered more likely than not is a different question. The point is simply that things change when a business, looking at its plans over the pricing period, starts to factor in the possibility that, because of growing competitive constraints, it might not be able to price up to the cap.

²⁹ It may be useful to recall that the concept of a normal rate of return on capital relates to an average or mean or expected rate of return. In competitive markets, rates of return will sometimes be above average and sometimes below average, depending upon the particular balance of supply factors and demand factors at the relevant time.

and straightforward, that fact only highlights just how difficult it is to strike an appropriate balance of risks in more competitive market conditions.

In nutshell, the policy position might be described as follows:

- As competition develops, the risks of consumer detriment due to exploitation of market power decrease, and the risks to competition and consumers arising from price controls increases.
- Since the risks of ill judged price interventions starts to increase rapidly when competition reaches an intensity where pricing below the caps starts to occur, there is a strong argument for getting through the transitional stage, to full deregulation, quickly.

The reason that speed is important here is that, if suppliers believe that the transition to deregulation will be made quickly, then even if price controls are set inappropriately the effects on longer-term supply side decisions (e.g. in relation to investment and innovation) will be muted, since the latter will be driven more by expectations of what will happen following full deregulation. Credible commitments to speedy deregulation can, therefore, be highly effective in strengthening supply side incentives, even before the arrival of effective competition.

On the other hand, expectations that transitional price controls will be maintained for a protracted period can be expected to cast a blight on the market. Since there are no general principles for price setting in the relevant market contexts, and since the international, evidential record is one of failure rather than success, it cannot be expected that the resulting business risks and uncertainties will have anything other than chilling effects on market development.

2.5.3 Effective competition

When competition is effective, the risks of high prices due to market power become no higher than those in other sectors of the economy (where competition policy is considered to provide a sufficient set of safeguards), whilst the risks of harm from price control remain, and tend to be greater than during the earlier stages of the transition. There is therefore a compelling case against price controls.

Taking these points together with the discussion in the previous sub-section, it is to be expected that the withdrawal of price controls will be most appropriate *before* competition has become fully effective, in periods when the risks/hazards of the alternative courses of action are more evenly balanced.

PART 3 International experiences of deregulation in the transition from monopoly to competition

Having considered some of the general economic issues relating to the effects of price caps or of other forms of regulatory price influence in markets that are becoming increasingly competitive, I now turn to look at some of the recent international experience from relevant markets which have moved, or are in the process of moving, from price controls or required standard offers to unregulated pricing. The material is split into three chapters, dealing respectively with retail electricity and gas deregulation in the UK, examples of electricity market deregulation in the USA and Scandinavia, and, finally and briefly, recent developments in UK telecoms and airport regulation.

UK retail energy market developments are given the most attention, both because the UK was an early-mover in removing price controls (the US measures discussed are much more recent) and because the market and institutional arrangements are closer to those of Australian energy markets than is the case for Scandinavian markets. UK markets have also been the subject of a considerable amount of ongoing analysis, which provides a basis for assessing both the historical experience itself and, given that experience, the strength of the economic reasoning set out in Part 2.

In contrast, there is less basis in the US cases for confident inferences that might bear on the issues set out in the Terms of Reference of this Report: the relevant developments are very recent, and much else (in addition to retail price controls) has been changing. The US material should, therefore, be interpreted as being more tentative in nature.

3. Retail energy market deregulation in the UK³⁰

3.1 A brief history of market development

Liberalising measures to allow large end users of electricity and gas to purchase their requirements from suppliers other than the incumbent, publicly owned monopolists date from the early 1980s in the UK. There was, however, little interest in new entry until after the major privatisations, which occurred in 1986 for gas and 1990 for electricity.

The process of ending statutory monopolies for the residential supply of gas began in 1996, via a geographic roll out starting in the South West of England. The process was completed (i.e. the last regional monopoly franchise was ended) in 1998. In electricity, residential market liberalisation began in 1998 and was completed in 1999.

Market opening was accompanied by a loosening of price caps, and by certain other technical adjustments in the controls. For example, the traditional price cap in gas had been expressed as a maximum value for average revenue per therm or kWh, where the average was across all supply. As market opening proceeded the cap was disaggregated according to tariffs based upon methods of payment (direct debit, pre-payment, etc.), so as to prevent what was expected to be the more rapid development of competition in some tariff types (particularly direct debit) from leading, in effect, to looser price caps for customers on other tariffs, such as pre-payment (which tends to be used by poorer and more vulnerable groups).

This initial loosening of price caps was quickly followed by removal of price caps. Direct debit tariffs in gas were removed from the price control in the spring of 2000. A year later, remaining controls on levels of prices were removed, although there continued to be constraints on the relative prices of different tariffs for one more year. Deregulation in retail electricity markets, which had been opened up later than the gas market, occurred slightly later in Spring 2002.

This was, by any standard, a remarkably swift transition. In the UK, for example, retail telecoms markets were subject to price controls until very recently, even though BT had been privatised in 1984 and market opening had begun in 1981. The pace of change was not without opposition, although Ofgem was clear that any attempt to maintain retail price controls in circumstances where wholesale prices were deregulated, and were potentially subject to volatile influences³¹, would likely create major risks.

³⁰ Historically, the UK had three electricity systems – England and Wales, Scotland and Northern Ireland – but the England & Wales and Scottish systems were integrated in 2004. Northern Ireland remains a separate system, and, together with gas supply in the province, it is separately regulated from the rest of the UK (i.e. from Great Britain (GB)), where markets are supervised by the Gas and Electricity Markets Authority (GEMA) and the Office of Gas and Electricity Markets (Ofgem).

³¹ An interconnecting gas pipeline between England and Belgium became operational in 1998 and, since that date, UK gas prices have been much more closely linked with continental European prices than previously. Given that (a) continental prices are heavily influenced by the oil price indexation provisions of long-term supply agreements and (b) by the late 1990s combined cycle gas turbines accounted for a substantial fraction of UK electricity generating capacity, both gas and electricity wholesale prices have been much more sensitive to world oil prices since 1998. The problems that started to emerge in the Californian electricity system in 2000 only strengthened Ofgem's view that

3.2 Setting the transitional price caps

A particular policy concern during the three-year transitional periods for gas and electricity was that price caps not be set so low as artificially to discourage new entry into the market or to hinder the subsequent expansion of new entrants. The general issue here is that discussed in section 2.4.1 above in relation to precautionary price caps, but there are one or two particular characteristics of the transition to competition in retail energy markets that gave the issues a particular flavour in the UK.

The most important of these was the recognition that, given the brand recognition of incumbents and initial lack of consumer information about entrants, entrants would need to offer significant discounts on incumbents' prices in order to induce consumers to switch in large numbers. A price cap that was set too low would not allow sufficient margin for entrants to be able, profitably, to offer the required discounts. The regulatory documents of the time were, therefore, much concerned about the 'headroom' between the price caps and the estimated costs of entrants.

The issue was regarded as particularly important because, if supply side incentives for entry were unduly squeezed, the prospect was that competitive entry and expansion would be limited, the transition to competition would be protracted, and that policy would be stranded in a no-man's land – between regulation of monopoly and supervision of competitive markets – for an extended period of time. In this context it is to be remembered that Ofgem was, in the period leading up to full deregulation, watching the Californian electric system, with its mish-mash of competition and regulatory fixes, first unravel and then collapse. The policy priorities were therefore to get through the risky transitional period as quickly as possible and, perhaps just as important, to convince market participants that the transition would be short, so that the effects of any regulatory mistakes in the short-term would be mitigated by expectations that they would be short-lived.

3.3 Consumer information, switching, and tariff innovation

Ofgem publishes regular reviews of the GB retail electricity and gas markets, and developments since market opening can be tracked in detail through those reports. One of the most important was the review published in November 2001³², ahead of the completion of deregulation on 1 April 2002 (as noted, the level of retail gas prices was already deregulated at the time, but there was a residual constraint on *relative* prices). On the basis of commissioned survey work, it reported continuing, high levels of switching (on a cumulative basis, 38% of household for electricity and 37% for gas, higher than in other sectors such as telecoms) and high levels of consumer satisfaction.

Given concerns about vulnerable customer groups, findings with important implications for the development of policy included:

regulating retail prices when wholesale markets are deregulated was not a policy position that could safely be maintained for any significant period of time.

³² *Review of domestic electricity and gas competition and supply price regulation: Evidence and initial proposals*, Ofgem, November 2001.

- Customers on lower incomes were switching to cheaper suppliers at similar rates to those on higher incomes.
- The great majority of customers who had switched found it to be a relatively straightforward process.
- There were no significant differences between the experiences of customers using pre-payment meters and those on standard credit terms.
- Although older people had switched less than the average, their active participation in the markets was still considerable (a cumulative 30% had switched, compared with a market average of around 37% - 38%).
- 73% of gas and 81% of electricity consumers reported that they were aware of competing suppliers.

In concluding at the time that price regulation was no longer justified, Ofgem also made it clear that it would continue to be active in promoting consumer interests, in ways that would include the following:

- Using Competition Act powers to tackle any anti-competitive conduct that might be identified.
- Various measures under the Ofgem Social Action Plan to help vulnerable and low income customers suffering fuel poverty.
- Continuing work with Energywatch and others to make it easier for customers to choose and change supplier.
- Enforcement of suppliers' licence requirements.

In later years, there developed a concern that switching rates might be declining, such that incumbents' market share would fall toward an asymptote characterised by market power and higher prices in relation to those sub-sets of the population with lower propensities to switch. In the event, this concern has proved unfounded in that, in changed market conditions in which rising wholesale prices, and hence rising costs to retail suppliers, started to drive retail prices upwards, switching rates accelerated again, and there has been greater price convergence than in the earlier period.

It has also been a feature of the later period that there has been greater innovation in tariff options. By way of examples, Ofgem's latest review of the retail markets (June 2007)³³ highlights three types of tariffs which have become increasingly popular:

- Price guarantee tariffs, which offer more certainty over future bills, and which include fixed price, capped price, and tracker deals.
- Online tariffs.

³³ *Domestic Retail Market Report*, Ofgem, 2007.

- Green tariffs.

There are also indications that, in the face of global trends in energy prices, suppliers are beginning to compete by offering energy services to consumers which are targeted at helping households to *reduce* their consumption. An example is a scheme offered by one of the major suppliers whereby customers can earn credits by reducing their consumption, or by choosing electronic billing. The credits can then be used to buy more energy efficient appliances or loft insulation, or get discounts from their bill.

The current market position is perhaps best described by Ofgem's latest review, which provides the following overview (cited here in full):

“There has been a lot of political and media debate about how competitive the market for domestic gas and electricity is. Concerns include: the size and speed of suppliers' price cuts in response to falling wholesale prices, customer service levels and whether the market adequately protects vulnerable and fuel poor customers.

Our analysis shows that all segments of the market remain highly competitive and not just for customers who pay by direct debit or online. The key findings are:

- *Vigorous price competition between the big six suppliers for all customers - the spread between prices has shrunk and the most expensive suppliers have been forced to become more competitive to stem customers losses*
- *Suppliers are innovating to retain and win customers - there has been rapid growth in: fixed and capped price deals that shield customers from rising wholesale prices; cheaper online deals; and green tariffs. They now account for roughly 20% of the market*
- *Customer service is improving: suppliers are investing huge sums to improve their systems and 5 suppliers have cut the number of unresolved complaints*
- *Annual customer switching rates are at the highest in 4 years*

Customer switching in response to poor service or uncompetitive prices helps to keep the market competitive. We will continue to make sure that all customers - including the vulnerable and fuel poor - have access to good information to enable them to make the right choice for them and switching remains simple and hassle free.”

3.4 Retail prices and deregulation

3.4.1 Domestic/residential and I&C markets

The policy issues faced by Ofgem in relation to deregulated energy supply markets have, over recent years, been heavily concentrated on supplies to domestic/residential customers. Industrial and commercial (I&C) markets were liberalised at significantly earlier dates, there has been a much longer period of active competition among suppliers, and there has been a wide consensus that the I&C supply market has not manifested substantial failures of competition. By way of supporting evidence for this, it can be noted that the substantial wholesale price reductions consequent on the

introduction of New Electricity Trading Arrangements (NETA) in 2001 were quickly translated into retail price reductions to I&C customers of commensurate magnitudes.

I&C prices therefore provide a simple benchmark against which movements in retail prices to domestic/residential consumers can be assessed. Such prices do, of course, include elements of distribution and transmission costs, although these are, on a per kWh basis, lower than for domestic consumers. Supply costs per kWh are also lower than for residential customers. Thus, it is to be expected that fluctuations in wholesale prices will be associated with larger fluctuations in I&C prices than in domestic prices. Percentage rates of change in the latter can be expected to exhibit much more damped responses to percentage rates of change in wholesale prices.

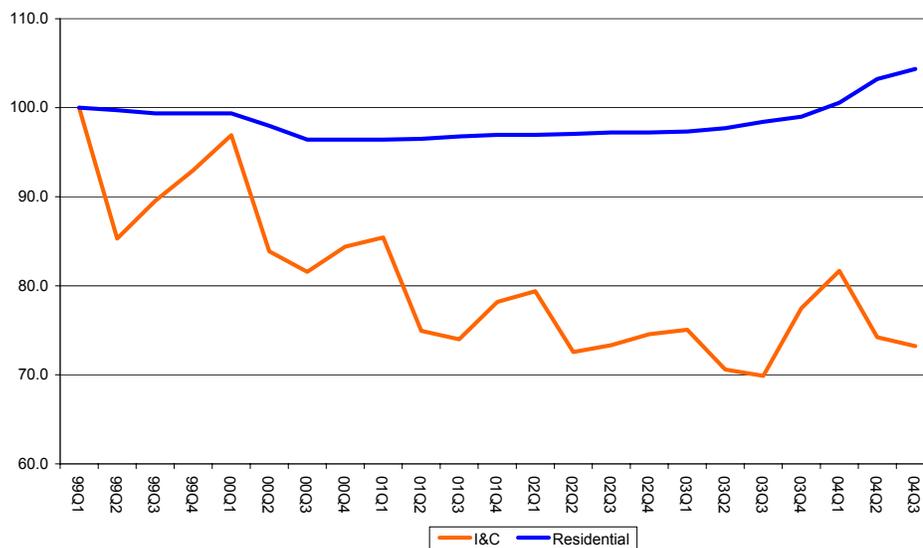
Quarterly data for both I&C customers and for domestic consumers are published by the Department for Business, Enterprise and Regulatory Reform (DBERR), formerly the Department for Trade and Industry (DTI). The I&C data are provided for various end user size bands, of which the 'large' category will be shown in what follows. As noted above, market opening was completed in 1999 for electricity (a year earlier for gas), and withdrawal of price controls (for gas) started in the second quarter of 2000.

3.4.2 Electricity prices

Chart 1 shows pre- and post-deregulation electricity price movements, with data indexed to 100 in Q1 of 1999. Prices here are in nominal terms (i.e. not adjusted for general inflation). The following immediate observations can be made:

- Retail domestic prices were relatively flat over the period. There was a step movement downward in Q2 and Q3 2000, followed by a very gently rising trend that accelerated around the later part of 2003. In real terms, prices fell

Chart 1: I&C and residential electricity prices



- significantly over the period as a whole. However, given falling wholesale prices, which are reflected in the I&C prices, it might have been expected that real prices would have fallen more.
- The fall in domestic prices in Q2 and Q3 2000 is largely attributable to the introduction of the revised pricing formula for distribution charges in April 2000, which was at least partly passed through into retail prices.
- There is no very clear linkage between domestic retail and I&C prices until late 2003, when the effects of upward pressures in wholesale prices start to be felt across retail markets as a whole.

3.4.3 Gas prices

Chart 2 is the gas equivalent of Chart 1 for electricity, and again prices are shown in nominal terms. In this case we see a very different pattern, which, in the earlier part of the sample period, is something like a mirror-image of the movements in electricity. Thus, although there is little movement in domestic retail prices, this is accompanied by a very large *increase* in I&C prices. Further, the surge in I&C gas prices (Q4 2000) is almost contemporaneous with the start of the sharp fall in I&C electricity prices (Q3 2000).

The increase in I&C gas prices at the end of 2000 was driven by a sharp upward movement (or shock) in the wholesale market. It is therefore immediately evident that, in the case of gas, whilst there was again, initially, very little linkage between domestic retail prices and wholesale prices, the effect was, at least for a period, to protect domestic consumers against the wholesale price shock. There must, by implication, have been considerable downward pressure on the gross margin for gas sales at the relevant time.

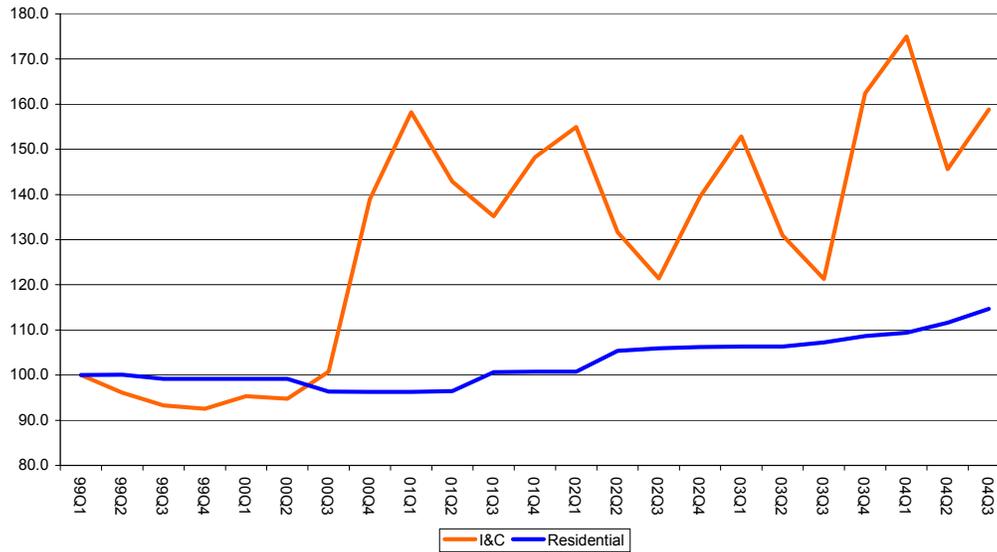
It is of particular note that the downward adjustment in domestic prices in Q3 2000 occurs just before a very large increase in I&C prices, driven by movements in wholesale gas prices. This was a period in which direct debit tariffs had been withdrawn from the price control, and in which suppliers were looking forward to the imminent arrival of full deregulation.

It is also notable that, when controls on the level of gas prices were removed in 2001, there was no major, upward adjustment in domestic gas prices to reflect the higher wholesale costs.

Overall, the data suggest that there was, eventually, an adjustment in domestic retail gas prices in response to the wholesale price changes that drove I&C prices sharply upward at the end of 2000: However,

- The domestic price movements lagged well behind the underlying movements in supply costs, and

Chart 2. I&C and domestic gas prices



- The effect was heavily damped – the increase in domestic retail prices remained, even at the end of the sample period, much smaller than might be expected on a cost pass-through basis.

3.4.4 Combined gas and electricity prices

Given the contrary movements of wholesale electricity and gas prices at the end of 2000, it is of interest to ask about the relationships between domestic and I&C/wholesale prices for the two commodities taken together.

For this purpose, I have constructed a domestic retail energy index, based on a weighted average of the two DTI indices. The weights have been taken from the relative expenditures of households on electricity and gas respectively, as reported in the 2000 Family Expenditure Survey. This gives slightly more weight to electricity prices than to gas prices (53.7% as compared with 46.3%).

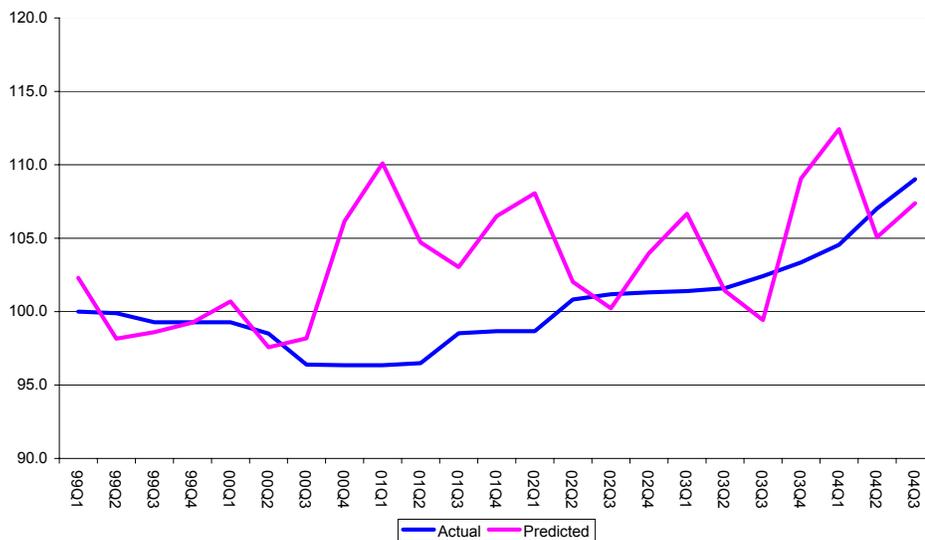
An index based on the same weights has been constructed for the I&C data. However, rather than simply compare these indices, one further step has been taken by asking: what would the domestic energy index have looked like if there had been full cost pass-through of cost changes emanating from the evolution of wholesale prices for the two commodities?

This gives a benchmark against which to compare the actual evolution of energy prices. In terms of counterfactual assessment, it is a benchmark that likely underestimates the level of regulated prices in the event that controls had been retained for a longer period. That is because, for reasons given in Part 2 of this Report, increasing competition would have been associated with a further loosening of price caps, so that there would have been allowance for a widening of the margin between retail and wholesale prices.

Chart 3 shows two indices: the actual domestic energy price index and the values of that index that would be predicted on the basis of 100% pass through of wholesale price changes. The ‘predicted’ index shows the expected seasonal variation, reflecting the seasonal variation in I&C and (behind that) wholesale prices.

The results are, to say the least, extremely interesting. It appears that, for this electricity plus gas index, there was closer tracking of (domestic) retail prices and I&C/wholesale prices, particularly at the beginning and the end of the sample period. The exception to this occurred for a period starting around Q4 2000 and running through to around Q2 2002, the period of deregulation. Over this period, domestic retail prices are significantly *lower* than might have been expected on a cost pass-through basis, reaching over 10% lower in some quarters.

Chart 3. Domestic energy price index: actual and predicted



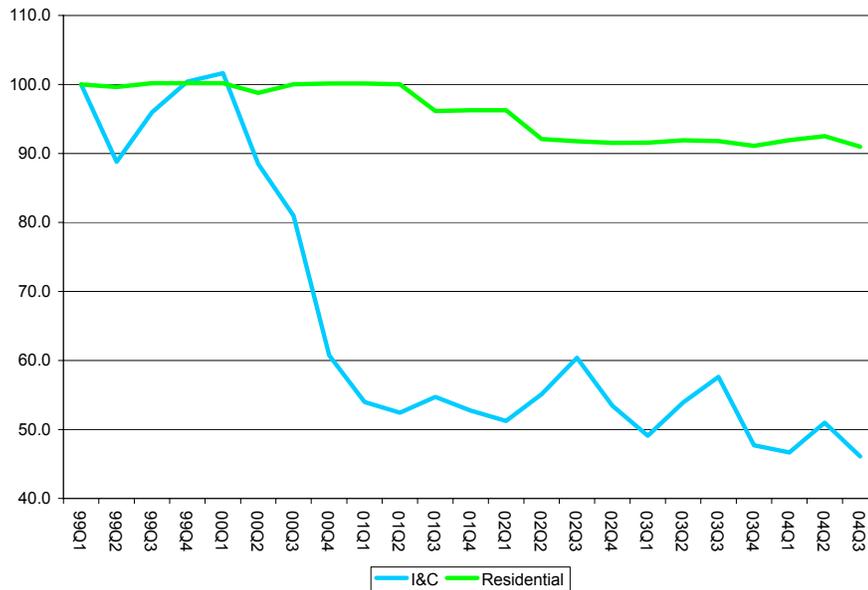
Putting these results another way, they imply that residential customers did well from deregulation, particularly in the period around the time of withdrawal of the price caps but also later too: as Chart 3 shows, the out-turn has been favourable to a benchmark based upon full wholesale cost pass-through, which itself may be a little lower than prices that would have been allowed if price regulation had continued.

3.4.5 Understanding GB retail energy markets

What then was going on? There was clearly a lagged reaction to the wholesale price changes in late 2000, and the lag was quite a long one. This can be most clearly seen by looking at the response of the relative price of the fuels in the domestic market to changes at the wholesale level that fed through very quickly into I&C prices. Chart 4, for example, shows indices of the relevant electricity-to-gas price ratios for I&C and domestic customers. The relative price of I&C electricity falls dramatically at the end of 2000, partly due to NETA effects and partly (the larger part) due to rising

wholesale gas prices. The relative price at the domestic level falls much later, and by a much smaller amount.

Chart 4. Price of electricity relative to gas



Starting from the position in 1999 and armed with knowledge of subsequent wholesale price movements and of the likely effects on supply costs of price review decisions, it would appear to be possible to predict, with fairly good accuracy, the overall level of domestic retail energy prices in 2003 on the basis of a hypothesis that supply cost changes are fully passed through to domestic customers (consistent with the existence of effective competition in supply, although the pass-through test is not powerful in distinguishing competitive outcomes from less competitive ones – some oligopoly analyses, in some demand conditions, would give the same expectation).

On the other hand, the 100% pass-through hypothesis does not account for observations between late 2000 and early 2002: during this period the overall level of domestic retail energy prices was significantly *lower* than might have been expected, given what happened to wholesale prices and I&C prices. It is also the case that the price of electricity relative to gas has changed (fallen) by substantially less than might have been expected at the outset.

These observations potentially tell us quite a lot about the state of competition in the UK domestic energy markets, and about the implications of that competition for domestic consumers. For example,

- Ofgem policy in relation to NETA and retail deregulation was at the time criticised from a number of angles, but a common argument was that domestic consumers did not see the gains from NETA that were enjoyed by I&C customers. As is clear from the above, it is easy to see a basis for this

criticism if attention is restricted to electricity prices alone: the margin between domestic and I&C or wholesale electricity prices certainly tracked upwards over the relevant period. When the broader energy picture is considered, however, it can be seen that, in the same period, from late 2000 on, domestic customers actually did proportionately *better* than I&C customers from pricing outcomes. That is the implication of the lower than expected values of the electricity/gas price index between late 2000 and early 2002.

- The domestic consumer benefits were, however, not evenly spread, being concentrated on the gas side. Thus, ‘electricity-only’ households did not enjoy anything like the same gains as households that use both electricity and gas (whether purchased on dual fuel offers or separately). One explanation is that these households were less attractive targets for suppliers competing with incumbents. Faced with a choice of who to target first, dual fuel households offered suppliers the prospect of lowering their per-unit marketing costs.
- Strategic competition in domestic retail energy markets is probably the best place to look for a consistent account of the price history. UK retail markets are characterised by some specific features. The chief challenger to regional incumbents in electricity has been the dominant, national supplier of gas; and the chief challenger to the dominant incumbent in gas in any given area has been the regional electricity incumbent. This rather distinct market structure can be expected to have had major implications for preferred pricing strategies.
- To illustrate, an entrant will typically seek to challenge with a price discount on the incumbent’s price (whether gas or electricity) and, knowing this, the incumbent will, at least in the first stages of liberalisation, effectively set the base price. This is a form of price leadership, but it does not necessarily lead to uncompetitive outcomes – indeed the pricing evidence indicates that, at the aggregate (electricity + gas) level, gross margins fell in the deregulation period (the Q3/4 2000 to Q2 2002) observations. That the more aggressive base level price was set in gas than in electricity is consistent with the view that competition was more intense for the relevant customers, which is in turn consistent with the earlier start to liberalisation in gas.
- There is also a more psychology-based hypothesis to explore, centred on the proposition that customers have a higher propensity to switch to a discounting challenger when prices are rising significantly. On this basis, Centrica, the leading gas supplier, would have been particularly vulnerable to erosion of sales if gas prices had increased significantly in late 2000. As explained in the Ofgem 2007 review of retail markets, market conduct in the more recent period – in which prices have been rising, driven in large part by oil-indexation in continental European gas supply agreements – tends to support this view: there was a significant acceleration in the rate of switching from Centrica as prices rose, which led to a shift in that company’s pricing strategy. Whereas in the early stages of deregulated pricing, Centrica had been content to be the most expensive competitor in relation to gas, it has more recently been much more aggressive in its pricing.

- ‘Electricity-only’ households may also have an important part to play in the story. Centrica’s initial strategy was centred on adding electricity to gas among its existing base of customers. Definitionally, those existing customers were not ‘electricity-only’ households. For incumbent electricity suppliers, then, electricity-only customers were not under heavy potential attack. Assuming that price discrimination was impeded by regulatory/competition law constraints, the existence of such customers could be expected to mute any incentives to reduce electricity prices in the face of cross-entry by Centrica.

3.4.6 More recent pricing developments

Energy prices have risen substantially since 2004, at both wholesale and retail levels, driven principally by global oil and gas price trends. The evidence suggests, however, that, in the face of new global pressures, competition in retail energy markets has continued to serve the interests of consumers well: results from the later period are very consistent with the implications of the analysis above.

In its June 2007 Report on domestic/residential markets, Ofgem sought to estimate the levels of retail prices since 2003 that would be implied by 100% cost pass through of wholesale price changes. As explained above, this provides an indicative price path that is likely a lower than that which might have been determined by a regulator setting a precautionary price cap.

Referring to a Figure 2.4 in its Report – a chart that summarises the results of the exercise – Ofgem concludes as follows:

“The chart shows that the most competitive supplier's prices increased by £279 less than the total increase in our illustrative wholesale costs over the last four years. It also shows that on average, suppliers passed through less than the full increase in wholesale costs to domestic customers over the same period. This saved the average customer £116.”

In short, prices rose, but by significantly less than might have been expected on the assumption of full pass-through of wholesale price increases, implying that there were reductions in the (absolute) gross retail margin over the period.

3.4.7 Conclusions

In terms of its implications for assessment of retail energy price deregulation in Victoria and elsewhere, the UK record since the lifting of price controls in 2000-2002 supports the view that effective competition provides strong protection for consumers generally, including domestic/residential consumers.

Given the *ex ante* concerns about the likely efficacy of retail competition in protecting the interests of residential consumers – I&C markets have been open to competition for much longer – it is remarkable, only a few years after the ending of price controls, how generally accepted the notion of retail competition in energy has become. The last two years have seen very major swings in retail prices, similar to the swings in

world oil prices, which would likely have given rise to some quite severe regulatory and political difficulties had public authorities been responsible for the supervision or determination of prices. Yet there has been no general call for a return to price control, and gas and electricity price movements have come to be accepted by the public in very much the same way that oil price movements are accepted.³⁴

That is not to say that consumers and their champions in the media and politics do not complain vociferously when price hikes occur: they do. Rather it is to say that there is general recognition that, in competitive markets, prices go up and down, and that it is also recognised that, in the case of energy, there are powerful, global factors at work which are driving prices upwards. The complaints and concerns therefore tend not to be cast in terms of defensive requests for ‘protection’ against high prices³⁵, but rather in terms of a questioning as to whether markets are functioning reasonably effectively and hence whether or not the prices being charged do actually reflect underlying supply and demand conditions. And when problems are (rightly or wrongly) identified, there is an increasing tendency to see the appropriate policy response as falling within the domain of competition law, rather than as public price fixing..

One of the reasons for the shift in attitudes likely lies in the record of price movements summarised above. Contrary to fears that household consumers would fare worse relative to I&C customers as a result of deregulation, the evidence suggests that, at least in the years immediately before and after deregulation, they fared better. As in the case of I&C customers, therefore, the evidence indicates that competitive, deregulated markets have served the interests of household consumers at least as well as, and most likely better than, regulatory supervision of prices.

As always, however, the record is not one of unblemished success. For example, electricity-only households did less well than households using both electricity and gas, the explanation for which probably lies in the pre-deregulation structure of the market, in which Centrica, the incumbent gas supplier, was the major challenger to incumbent electricity companies, and was targeting ‘dual-fuel’ households. This reinforces the common wisdom concerning the importance of assessing the relevant, specific market context, as the AEMC has done in relation to the Victoria retail energy markets.

³⁴ At the beginning of 2008, in response to announcements of significant increases in retail prices by Npower, one of the major suppliers, the Chancellor of the Exchequer wrote a letter to the Chairman of the Gas and Electricity Markets Authority about the proposed increases. Notwithstanding considerable press coverage and comment, including a leading article in the Times newspaper, what is striking about the letter is its relatively mild tone, particularly given that the contribution of increasing energy prices to inflation is, inevitably, politically unwelcome. The Chancellor wrote: *“I am aware that recent developments in the international oil markets are feeding through into the UK's gas and electricity markets. In particular, Npower's announcement on Friday 4 January of increases in their energy prices has reminded us of the relationship between energy prices, macro-economic stability and Government's objectives around tackling fuel poverty. ... I welcome the ongoing contribution and role that Ofgem makes as an independent regulator in the UK's energy markets. In light of this expertise, I would be interested in receiving your assessment of gas and electricity supply and market conditions both in the UK and Europe and likely future trends. As part of this assessment, I would be particularly interested in your views on the relationship between wholesale price movements and feed-through to domestic retail prices and the likely availability of gas supplies from the Continent, including Norway, for the remainder of the winter and 2008.”*

³⁵ With the exception of requests for more favourable social tariffs for vulnerable customers.

4. Retail electricity deregulation in the US and Scandinavia

4.1 Introduction to the US cases

In the late 1990's several states within the USA began the process of opening up their electricity markets to competition, including allowing retail customers to choose among competitive suppliers of electricity.³⁶ The process of opening up the markets to retail competition in these states was typically accompanied by requirements for the breaking-up and selling off of generation assets by transmission and distribution utilities, and consequently new procedures were introduced to allow incumbent utilities and competitors to purchase power from generators in order to serve retail customers.

The process of transition to retail competition in each of the market opening states has been facilitated through a series of legislative acts and other legal instruments. The instruments were designed to promote a staged approach to market opening and typically applied for a set period and contained 'expiration clauses'.

In reviewing the three case studies presented below – and in particular any indicators relating to price changes – it is important to be mindful of two points. First, retail prices in each of the states are inextricably linked to the underlying source of generation used in that state. Consequently, retail prices in some states are more susceptible to changes in coal and natural gas fuel costs than others which rely more on hydro power or on nuclear power generation.

Second, any cross-state comparison needs to allow for different forms of organisation of the electricity market as a whole. Not surprisingly each state tends to differ in terms of the degree of vertical integration of generators and suppliers and the manner in which generation power is bought and sold. Texas, for example, has traditionally differed from most other states in that power transactions have occurred through bilateral transactions and not through a central or interstate spot power market.

Bearing these points in mind, the discussion below focuses on two states where retail price restrictions have recently been removed: Texas and Illinois. These states were selected because they were among the first to reach a point in the transition to full retail competition where retail price restrictions were required to be removed.

In addition to Texas and Illinois, some remarks are also offered in relation to Maryland, where deregulation has proved more problematic, and which is therefore potentially useful in pointing up some of the potential pitfalls to be avoided.

³⁶ Measures to introduce retail competition for all customers were initiated in the late 1990s/early 2000s in 17 States: Texas, Rhode Island, Massachusetts, New York, New Jersey, Pennsylvania, Maine, Connecticut, Maryland, Delaware, District of Columbia, Ohio, Arizona, Illinois, New Hampshire, Michigan, Virginia. In addition, there are some States that had adopted measures with similar intent but which have since suspended the process, such as California (in 2001). Other states have begun opening up retail competition to large customers only, such as Nevada, Oregon and Montana.

4.2 Texas

The Texas electricity market is one of the largest in the world. Traditionally, the primary source of production has been natural gas and coal power plants. The generation mix is changing however, and Texas now has the largest wind power firm in the United States. The electricity transmission and distribution grid in Texas is relatively self-contained, and therefore unlike other states it is not subject to substantial effects from cross-state transactions.

The process of deregulation of the Texas electricity market began in 1995. The full opening up of the retail market to competition was introduced in areas served by the main Texas transmission and distribution grid on 1 January 2002.³⁷ On 1 January 2007 the remaining retail price controls – which took the form of a ‘Price to Beat’ – were lifted for retail customers.

4.2.1 Policies

The Price to Beat

Following the introduction of retail competition in 2002 the Public Utility Commission of Texas (PUC) required that the retail affiliates of incumbent firms operating in areas open to competition establish a ‘Price to Beat’ (PTB) tariff. In simple terms, under the PTB system a customer whose electricity is supplied by an affiliated utility supplier (and not a competitive supplier) effectively paid a regulated rate for their electricity. The PTB applied primarily to residential retail customers: there was no PTB tariff for industrial and large commercial customers.

According to the PTB system a retail affiliate was required to offer the PTB until such time as it lost 40% of customers on the PTB tariff. If this occurred, the retail affiliate was no longer restricted to charging the PTB. The initial PTB tariff was set by the PUC, and subsequent changes to the PTB occurred at twice yearly intervals. These changes in the PTB tariff were generally linked to significant changes in the price of natural gas (so-called PTB ‘fuel factor’ changes). The purpose of allowing the PTB tariff to change bi-annually was to allow some flexibility in the tariff to adapt to changes in the underlying costs.

Expiration of the Price to Beat and market pricing

On 1 January 2007, the requirement that the retail affiliates of incumbent providers charge a regulated PTB tariff for electricity expired. Under the new system, the utility affiliates that are default suppliers of electricity can change their rates anytime, providing they give customers sufficient notice. Currently, the required minimum notice period for any retail tariff change is 45 days.

The expiration of the requirement to maintain a PTB tariff for retail affiliates means that in effect all customers in the relevant areas are now subject to retail prices which can change from time to time according to market conditions. However, as discussed

³⁷ Specifically, the six transmission and distribution utility service areas were opened to competition. These areas are all members of the Electricity Reliability Council of Texas (ERCOT) area.

below in more detail, one of observed changes in the retail market is the introduction of a range of different tariff plans, some of which allow retail users to ‘lock-in’ a fixed electricity tariff for a period of up to one year.

The transition to full retail competition in Texas has been aggressively pursued by the Texas PUC, and customer switching rates in Texas are the highest in the United States. In part, the high levels of customer switching may be attributed to various measures introduced by the PUC, including the development of a website which allows customers to compare the retail offers for electricity from competing suppliers in different zip codes. The website – www.powertochoose.org – is widely regarded as having been important in encouraging consumers to switch from the PTB tariff to alternative suppliers, and it has continued to operate in the post-PTB electricity market.

4.2.2 Indicators

It is generally acknowledged that the retail market opening in Texas has been the most rapid and the most successful of the deregulation efforts within the United States. For example, within the first three years of opening up the retail market to competition it was estimated that some 43% of total customer load had switched from regulated to unregulated suppliers. In addition, since the market has opened some fifty or so retail electricity providers have at various times entered the market to offer retail electricity.

Against this background it is useful to examine the preliminary evidence regarding the impacts of the expiration of the PTB. Since the PTB only expired on 1 January 2007 the relevant indicators refer to a very short time period, and the data are clearly insufficient at this stage to make a full assessment the impacts of the lifting of retail price controls in Texas. Nevertheless, it is possible to note some preliminary indicators of what has happened to retail prices and market penetration both before, and for 11 months following, the expiration of the PTB.

Price movements and tariff innovation

Prior to the expiration of the PTB in January 2007 it was claimed that there was considerable scope for price reductions, the PTB in most areas having been set at a level higher than the wholesale market price might suggest (consistent with the approach generally adopted in relation to precautionary price caps, as set out in section 2.4.1 above).

Following the expiration of the PTB in January 2007, both affiliated retail electricity providers and (unaffiliated) competitive suppliers have introduced an array of different tariff offerings for retail supply. There are various combinations, including tariffs based on wind power, or that are pollution free, as well as tariffs that reflect seasonal changes. The innovation and differentiation that have occurred are consistent with the analysis set out in sections 2.4.2 and 2.4.3, which explains how regulated prices can serve as focal points for standardisation of competitive behaviour. In Texas, the expiration of the PTB has led to greater differentiation and variety.

In general terms there are now three typical types of tariffs that retail customers can choose from: rates which are fixed for a certain period of time such as for a year; variable or flexible tariff rates which reflect changes in market conditions and can be changed with 45 days notice, and tariffs that are specifically linked to changes in the wholesale market clearing price of electricity (MCPE pricing).

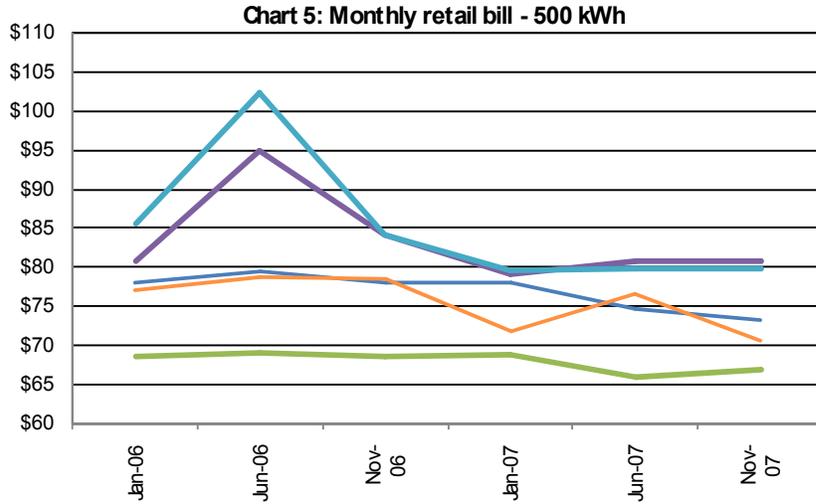
Charts 5 to 8 below show the movements in monthly retail prices for the five different areas in which full retail competition has been introduced.³⁸ The charts cover a 22 month period from 1 January 2006 until November 2007. The prices reflected in the data prior to January 2007 were the relevant PTB tariffs for each affiliated incumbent. The prices after 1 January 2007 relate to the tariffs that replaced the PTB.³⁹

The following high-level observations can be made in respect of these charts:

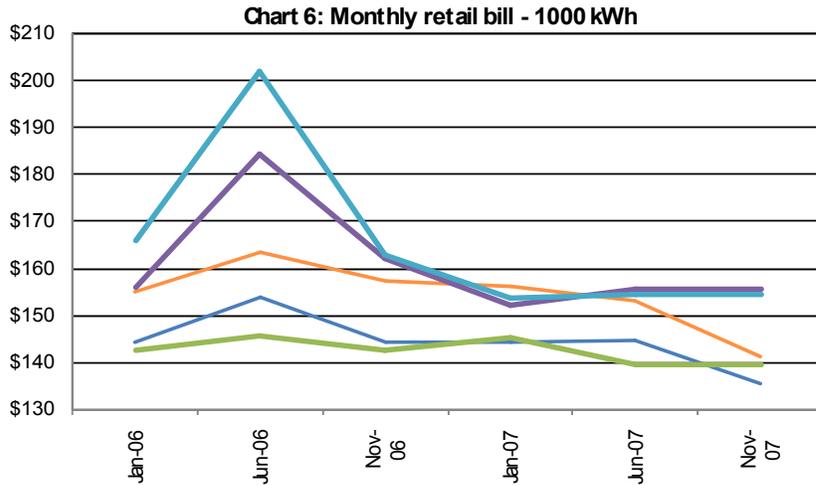
- Prices have either remained stable or been reduced for all users and in all areas over the 22 month period from January 2006 to November 2007. The price reductions vary across users and regions, but have been up to 9% for some users.
- A comparison of prices immediately before (November 2006) and after the expiration of the PTB (January 2007) shows that retail affiliates responded to the lifting of the price control in different ways. In one area the PTB price was maintained. In the two AEP transmission areas the retail affiliates responded with up to 6% price reductions. In the remaining two areas the prices increased slightly immediately following the lifting of the PTB by up to 2%.
- The trends in price movements over the period from January 2007 to November 2007 show that prices have fallen in three out of five regions. In some cases prices have been reduced by between 6-10%. In general terms, it appears that medium load users – purchasing between 1000 kWh and 1500 kWh per annum – have benefited most in this period.
- In the remaining two transmission areas – AEP Texas Central and North – the monthly retail bill has increased between 1 to 3% since the expiration of the PTB.

³⁸ The five transmission and distribution areas are: Oncor, Centerpoint, Texas/New Mexico, AEP Texas Central and AEP Texas North.

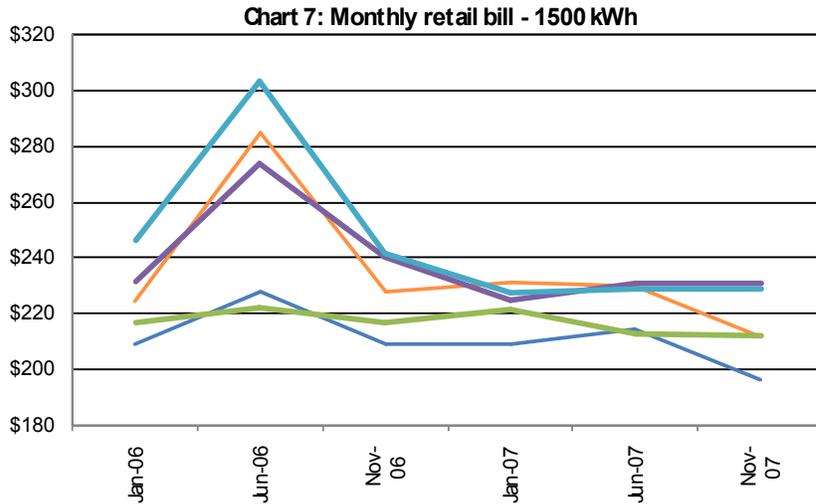
³⁹ The relevant tariffs are: TXU PTB and ‘Powerstart’ (Oncor); Reliant energy’s PTB and ‘OneRate Flex’ (Centerpoint); First Choise PTB and ‘Simply Better Value’ (Texas/New Mexico); CPL retail PTB and ‘Direct Electricity’ (AEP Texas Central); and WTU PTB and ‘Direct Electricity’ (AEP Texas North).



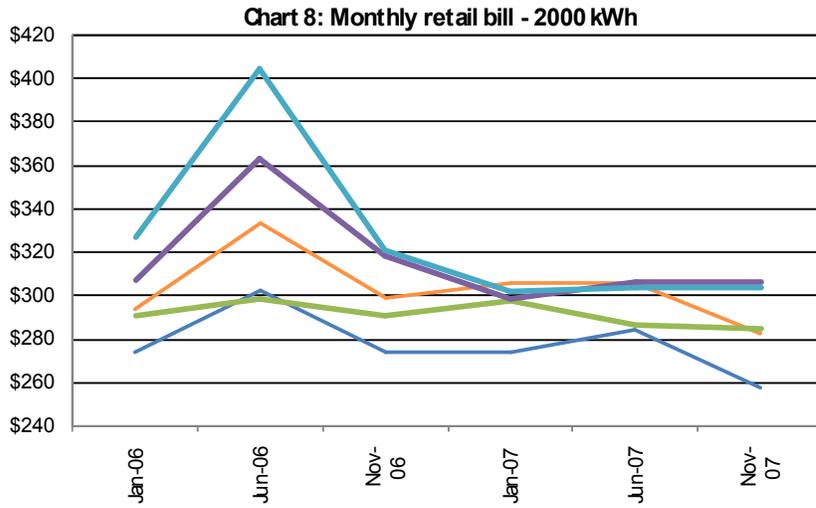
Source: Texas Public Utilities Commission



Source: Texas Public Utilities Commission



Source: Texas Public Utilities Commission

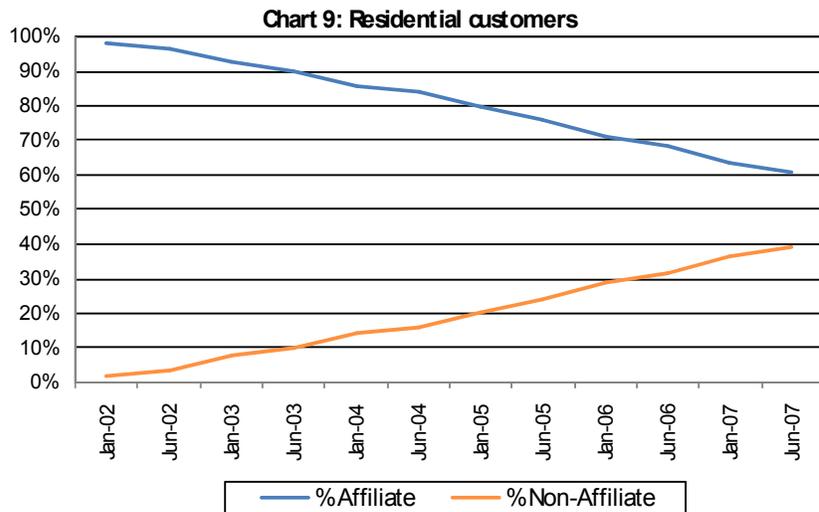


Source: Texas Public Utilities Commission

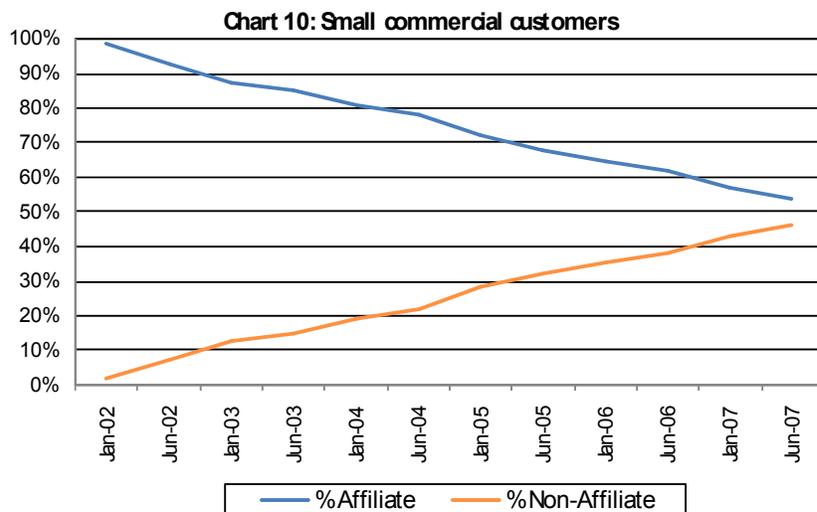
Customer switching

As noted earlier, the process of market opening in Texas has been one of the most successful in the United States and this is reflected in the high level of switching behaviour among retail customers of all types: residential, small commercial and large industrial.

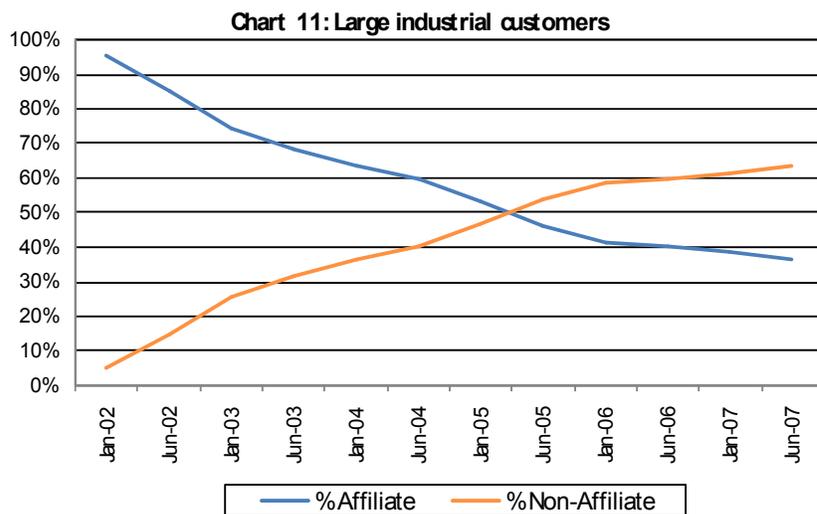
Charts 9-11 below present customer switching figures for the different classes of retail customers for the period that covers the introduction of retail market competition in January 2002 to June 2007.



Source: Texas Public Utilities Commission and 'www.powertochoose.org'



Source: Texas Public Utilities Commission and 'www.powertochoose.org'



Source: Texas Public Utilities Commission and 'www.powertochoose.org'

The following points about customer switching behaviour might be noted:

- Over the period since 2002, some 38% of residential customers, 45% of small commercial customers and 59% of industrial customers have switched their retail business away from the retail incumbent supplier of electricity.
- What this means is that as of June 2007 the market share of the retail incumbents was, in aggregate, roughly 60% of the residential market, 53% of the small commercial market and 37% of the large industrial market.
- Since the expiration of the PTB in January 2007, customer switching across all customer types has continued. More specifically, some 2.5% of residential customers have switched to a competitive supplier over the six months from January to June 2007.

- There does not appear to be an immediate response by residential customers to the lifting of the PTB in January 2007. The rate of residential customer switching between December 2006 and January 2007 was roughly 0.5% per month, a rate that is similar to the monthly customer switching rates throughout 2006.

4.2.3 Summary

Texas provides only limited information about the impact of the lifting of restrictions on retail prices. The final easing of these restrictions, in the form of the ending of required PTB tariffs, has occurred only very recently, so limited data are available. The preliminary evidence suggests that, in general, there have been no significant price increases following the expiration of the regulated PTB, and that for many customers there have been price decreases (up to a magnitude of around 10%). However, these price movements are heavily influenced by wholesale power prices, which in Texas are in turn heavily influenced by natural gas prices. Since natural gas prices eased back somewhat in the relevant months, it would be inappropriate to read too much into retail price movements at this stage.

A clearer message comes from the increased differentiation and innovation that has occurred in tariff offerings since the expiration of the PTB requirements. Such differentiation has direct benefits in terms of increasing the choices available to consumers, and it also contains positive signals about the prospects for retail competition going forward. Thus, the very fact of increased variation in tariff types can be interpreted as a sign of active competition in the market: there would be grounds for concern if, following the withdrawal of regulatory intervention, only a relatively limited and standardised set of alternatives were on offer. Such lack of activity might signal a degree of tacit-coordination in the market which suppliers were reluctant to undermine (see sections 2.4.2 and 2.4.3).

For the future, increased diversity and innovation in tariffs can be expected to be a feature of the market that will mitigate the risk of tacit collusion. Diversity makes collusion and co-ordination more difficult. Given that one of the persistent concerns about deregulated energy markets is that they might be prone to such co-ordination, the recent developments in Texas suggest that, following the ending of PTB tariffs, the market structure there has evolved in a positive direction, toward a set of market conditions that are more favourable to vigorous competition than has been the case in the past.

4.3 Illinois

The State of Illinois also ended its period of retail electricity price caps in January 2007. However, the experience in Illinois in the immediately following period appears to be somewhat different to that of Texas. As discussed below in greater detail, the difference experience of the two states can, in large part, be attributed to the different ways in which the electricity restructuring program was implemented, and, in particular, the way wholesale power was bought and sold.

4.3.1 Policies

The process of deregulation of the Illinois retail electricity market began in 1997 when a retail competition law was introduced. Initially retail competition was introduced for non-domestic customers, a stage that was completed by 2001. Retail competition was then extended to all residential customers by 2002.

As part of the deregulation process the restructuring law required that a ‘rate freeze’ be applied to the retail affiliates of the incumbent in two different transmission and distribution zones. More specifically, as part of the restructuring the affiliate utilities were required to enter into long-term supply contracts which enabled them to freeze retail rates up until the end of 2006. During the period of the rate freeze the Illinois Commerce Commission introduced a series of required ‘phase-in’ rate reductions, at some points requiring the rates to be reduced by 15%.

The retail ‘rate freeze’ expired on 1 January 2007, and this was accompanied by the expiration of the long-term contracts for electricity procurement. As part of the final stage of transition the Illinois Commerce Commission introduced a reverse-auction process to allow the two main retail affiliates to purchase power from 2007. The results of the reverse-auction process – which involved substantial increases in the costs of acquiring wholesale electricity – were widely criticised and are perceived as the major factor behind the subsequent increases in retail rates.⁴⁰

The increases in retail prices led to widespread calls for the ‘re-freezing’ of rates. These calls were resisted and instead the Illinois government took measures in mid-2007 to repeal the reverse auction process and to provide a \$1 billion multi-year ‘rate relief’ compensation package for retail customers. It is proposed that the reverse auction process be replaced and that a new Illinois Power Agency be established, which would develop and manage energy procurement on an annual basis, beginning initially with procurement for retail supplies to residential and small commercial customers.

4.3.2 Indicators

It is widely recognised that during the ‘rate freeze’ period the underlying wholesale electricity prices had increased dramatically, in part in response to increases in the cost of natural gas. These underlying cost increases were not, however, reflected in retail prices, which were generally required to be stable or to decrease over the transition period.

It was therefore entirely to be expected that upward price adjustments would follow the ending of the rate freeze. In effect, toward the end of the rate freeze Illinois was in a ‘case 2’ situation (see section 2.3.1).

At various points in time during the rate freeze, the Illinois Commerce Commission highlighted the problem of the limited incentive for competing suppliers to enter the

⁴⁰ The Illinois Attorney-General lodged a claim with the Federal Energy Regulatory Commission alleging that the 15 participants in the auction manipulated prices.

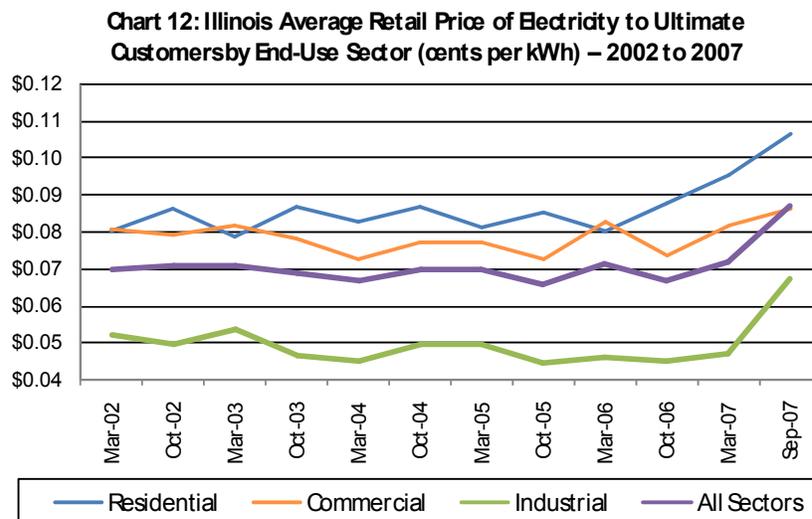
market during the rate freeze, which is one aspect of the general, ‘case 2 problem’: restriction of the supply side in consequence of the enforcement of price controls. The periodic reports published by the Commission during the transition process noted that any entry that occurred was fairly limited in scale and scope (up to a maximum of eight competitors), and that only some of those entrants had a sufficient number of customers to support a sustainable business in the longer term.

Price movements

As indicate, during the period of the rate freeze average retail rates were typically set to either decrease or remain steady in Illinois. Following the expiration of the rate freeze in January 2007, and as might be expected from the underlying economics, the rates for all users – including residential, commercial and industrial – increased. Chart 12 below details the path of prices for these different users from the time of full retail market opening in 2002 up to September 2007.

It can be noted from the chart that:

- Over the full period from market opening in 2002 to September 2007 retail prices for all users have increased by approximately 25%. The increases for residential customers have been the greatest with an average increase of 33% over the period. On the other hand, commercial customers’ retail prices increased only by an estimated 7% over the period.
- Over the period when the rate freeze was in effect – from March 2002 to October 2006 – the average retail prices decreased slightly for all customers in aggregate. However, while commercial and industrial customers’ prices decreased by 8% to 15% respectively, residential customers’ prices increased by 9%.



Source: Energy Information Administration, FORM EIA-826 ‘Monthly Electric Sales and Revenue Report with State Distributions’

- The principal increase in retail prices therefore occurred *after* the expiration of the rate freeze. The average price data which suggests that during the six-month period from October 2006 to March 2007 retail prices increased by 8%, 11% and 5% respectively for residential, commercial and industrial users.
- Over the 9 month period since January 2007, retail prices have continued to increase for all users. Residential users have seen average retail price increases of 22%, while commercial customers' retail prices have increased by 15%. The retail prices for industrial users have increased the most, showing an estimated 50% increase in prices over the 9 month period.

Customer switching

It was repeatedly acknowledged by the Illinois Commerce Commission during the transition period that the extent of customer switching was extremely limited. In 2002, the Commission published a report which noted that “*there is absolutely no competition (or choice) for retail residential electric customers, and it is unlikely competition (or choice) will be available for these customers for the next several years*”. Again, the outcome is perfectly explicable in terms of ‘case 2’ conditions: if regulators set prices below market clearing levels, they can hardly expect to find anything other than a distorted and restricted market-place

Reliable data on the extent of customer switching is difficult to obtain. However, reports on electric switching rates filed by the companies with the Illinois Commerce Commission suggest that the incumbent suppliers in Illinois – ComEd and the affiliates of Ameren – continue to serve the majority of retail customers. Market share of customer figures filed since 2002 suggest that in aggregate ComEd serves roughly 75% of all residential customers in Illinois and that the Ameren affiliates serve between 20% to 23% of residential customers. This suggests that competitive non-affiliated suppliers probably serve 5%-7% of residential customers at most.

4.3.3 Summary

The Illinois experience with the lifting of restrictions on retail electricity prices highlights the importance of the underlying market design and trading mechanisms in determining subsequent outcomes. Following the easing of restrictions, retail prices increased for all types of customers, and by as much as 50% for some industrial users, reflecting the facts that (a) prices to industrial customers are, in terms of percentage changes, more geared to wholesale prices than are prices to residential customers and (b) the ending of the rate freeze led to a sharp increase in wholesale prices.

It is notable that despite such price increases, and despite concerns about anti-competitive behaviour in the wholesale market reverse-auction, the policy response has not been to ‘re-freeze’ retail rates, but rather to work at the fundamental design of the procurement market, and to introduce measures to address the severity of the price changes in the short term while seeking to allow market mechanisms to work over the longer term.

In relation to wholesale market design, Illinois is far from being alone among states in having encountered problems at this level, and in this respect there is a marked divergence between US and UK experiences. By the time of retail deregulation, not only had the UK acquired several years experience in the operation of a competitive, de-regulated wholesale market, it was in the process of developing its *second*, radically revised ‘rule-book’ for that market (the New Electricity Trading Arrangements (NETA), introduced in March 2001). Regulators in the USA appear to have encountered much greater difficulties in finding effective wholesale arrangements, perhaps because of the existence of entrenched property rights that limit restructuring options (which was not a problem in the UK by virtue of the earlier public ownership of generating capacity).

Crucially, Illinois appears to have been a market in which regulated prices had been held significantly below competitive market clearing levels. At the risk of becoming unduly repetitive, for all the reasons given earlier such price controls tend to have the effect of restricting supply, including by deterring new entry. At the time of retail price deregulation, therefore, it can be said that there were fundamental problems of competition in the market, at both retail and wholesale levels. Retail deregulation did not take place at the stage indicated by, say, the GB policy matrix, which is when competition is ‘established’. Nor would the Illinois markets have satisfied the tests for effective competition used by the AEMC.

The problem here is that, if prices are held below market clearing levels, there is a manifest deviation from the transitional path marked out in Part 2 of this Report. Put bluntly, there cannot be an effectively competitive market when regulators are intervening in this way: the regulatory activity is itself a serious restriction of competition. However, there is a sense in which the Illinois experience confirms the earlier analysis, by showing some of the things that can go wrong with a transitional or precautionary price control when the cap is set at too low a level. Further, since markets will continue to malfunction for so long as this type of ‘case 2’ price control exists, the way forward is fairly obvious: stop regulating in this way. And that is the conclusion that seems to have been reached by the Illinois Commerce Commission.

4.4 Maryland

The experience of retail price deregulation in Maryland has been different again to that of Texas and Illinois, in part, because of the specific approach toward deregulation of the electricity sector adopted in that state. When the electricity market in Maryland was opened to competition in 1999 the focus was on the vertical separation of the sector and, in particular, on the deregulation of generation supply.

As part of this process, affiliated suppliers of incumbents were required to offer a Standard Offer Service – a tariff for those customers who do not switch to a competitive supplier – the rate for which was first mandatorily reduced, and then ‘frozen’ for a set period of time. The expiration of the rate freeze for different affiliated suppliers has been staged, with two expiring in June 2004, another in June 2006 and the final rate freeze ending in June 2008.

Following the expiration of the rate freeze, each of the affiliated suppliers is still required to offer a Standard Offer Service (SOS). However, the price for this service

is settled through a competitive auction process rather than through regulatory determination. This means that the levels of both generation and retail prices for electricity are – in principle, at least – no longer fixed or subject to regulatory restriction, and it is in this way that retail prices can be said to be ‘deregulated’.

4.4.1 Policies

The deregulation of the electricity market in Maryland began in 1999 and involved the phasing in of retail competition over a relatively short period. The original Legislative Act intended that all customers would have the ability to switch to an alternative supplier by 1 July 2000. Although full retail opening was delayed slightly by subsequent Court action, full retail choice was available across Maryland for the majority of customers by 2000-2001.

In the initial years of the deregulation process retail electricity prices were reduced by between 3% and 7% for affiliated suppliers, and then subject to a rate freeze for a set period of time of between four to six years. This rate freeze has since expired for 3 of the 4 major affiliated suppliers (including the largest supplier Baltimore Gas and Electricity in June 2006), with the last affiliated supplier’s rate freeze expiring in June 2008.

In anticipation of the expiration of the rate freeze, since June 2004 a competitive auction process has been introduced for the procurement of wholesale electricity by the affiliated suppliers for the SOS. As a result of these auctions, prices for the SOS were set to increase as of June 2006 by 72% for residential customers of the largest affiliated supplier, Baltimore Gas and Electricity (BGE), and by between 35% to 39% for residential customers of other affiliated suppliers.

As was the case in Illinois, in response to these substantial expected increases in retail prices there were widespread calls for the re-introduction of rate freezes or for other restrictions on the ability of affiliated suppliers to increase retail rates. Consequently, each affiliated supplier that participated in the competitive auction process has been required to introduce a rate stabilization plan, which effectively staggers, or defers, the price increase for the SOS over a period of between 18 months and ten years (in the case of BGE, securitization has allowed a ten-year payback period).

The Maryland Public Service Commission (PSC) published a report in December 2007 which examined options for the re-regulation of the electricity sector.⁴¹ The report notes that it was intended, in part, to address concerns that wholesale and retail electricity prices in Maryland were too high. The report does not however suggest that retail rates be re-frozen or that market mechanisms be replaced with regulatory determinations. Rather, the report identifies a number of structural interventions to: increase the available indigenous generation capacity in Maryland; relieve transmission constraints on the PJM grid which may have lead to higher than average wholesale prices in the past; and, to reform the arrangements by which electricity is procured for SOS customers by affiliated suppliers so as to increase the stability of retail prices.

⁴¹ Maryland Public Service Commission ‘Part 1: Options for re-Regulation and New Generation’, December 3, 2007.

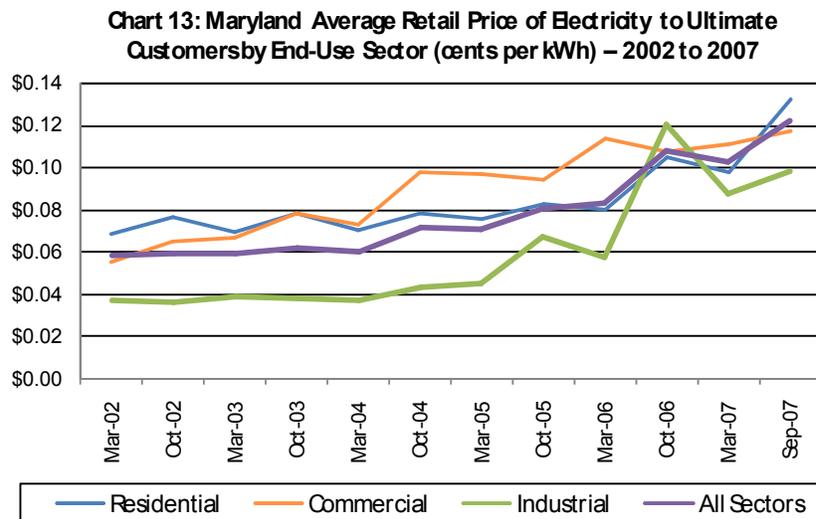
4.4.2 Indicators

The recent report on options for re-regulation published by the Maryland PSC identified a number of factors that it believed had contributed to the higher than average wholesale and retail prices in Maryland in the past. One of its central conclusions was that the high prices can, in part, be related to the limited incentive for existing generators to make investments in additional capacity in Maryland, or to take measures to relieve transmission constraints, given that the prevailing higher prices made the status quo lucrative for these generators.

Against this backdrop it is potentially informative to briefly examine the retail price paths for different classes of customers, and the extent of customer switching, in Maryland in the period since retail competition was introduced, and more particularly, since the rate freezes for the SOS service expired for the majority of customers (2004 to 2006).

Price movements

As discussed above, the process of deregulation of prices in Maryland involved an initial reduction in the prices of the SOS of up to 7% which was then followed by a period in which rates were frozen for a period of up to six years. The expiration of the rate freezes have been staggered, and as of June 2006 the majority of retail prices for the SOS are now determined according to the competitive auction process. Since that time the SOS prices for all customers – including residential, commercial and industrial – have increased. Chart 13 below details the path of prices for these different users from 2002 up until September 2007.



Source: Energy Information Administration, FORM EIA-826 'Monthly Electric Sales and Revenue Report with State Distributions'

Chart 13 shows that since 2002 retail prices for all users have increased substantially, including by an estimated 93% for residential customers and by some 164% for industrial customers. Although prices have been steadily rising over the period for all customers, the most significant price increases appear to have occurred in the period immediately following the introduction of the new SOS prices in June 2006 which were determined through the competitive auction process. For example, retail prices for residential customers and for industrial customers increased by 31% and 108% respectively during the six months from March 2006 to October 2006.

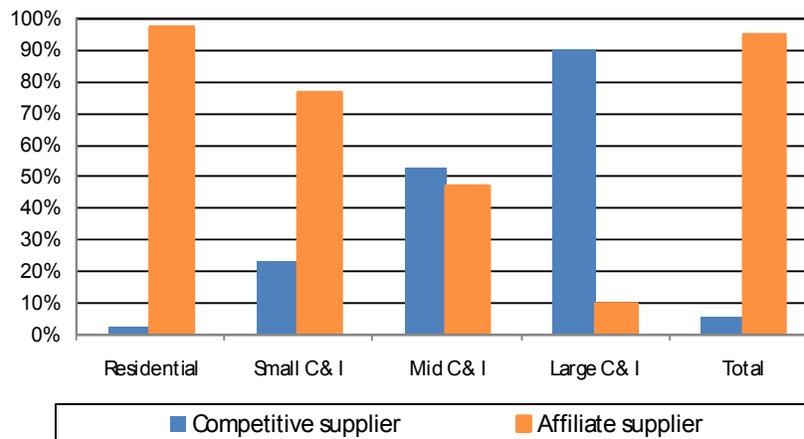
Once again this suggests that the principal increase in retail prices has occurred *after* the expiration of the rate freeze. This is confirmed by the fact that in the 18 month period since March 2006 retail prices have increased by 65% and 70% respectively for residential and industrial customers.

Customer switching

As was the case with Illinois reliable time-series data on the extent of customer switching is difficult to obtain. The best indicator of the extent of customer switching can be found by examining the monthly Electric Choice Enrolment reports published by the Maryland PSC. The most recent of these reports for November 2007 (shown in chart 14 below) indicates that customer switching has been most significant for medium and large industrial customers with some 53% and 90% respectively now being supplied by competitive suppliers. The proportion of small commercial and industrial customers who are supplied by a competitive supplier is estimated at just under 25%.

Perhaps of most interest is the limited percentage of residential customers who currently obtain their electricity from a competitive (non-affiliated) supplier. According to these figures, it is estimated that less than 3% of residential customers receive electricity from competitive suppliers.

Chart 14: Maryland: percentage of customers supplied by a competitive or affiliate supplier – November 2007



Concerns about the low levels of residential customer switching in Maryland are longstanding, and it is argued by some commentators that this points to a ‘failure’ of

the retail deregulation process. However, other commentators note that such low levels of residential customer switching should be unsurprising given that residential rates were frozen at levels below market price for the majority of time since full-retail competition was introduced, implying that there in such circumstances there was little incentive for residential customers to switch among suppliers.⁴²

4.4.3 Summary

The Maryland experience, although different to that of Texas and Illinois, once again highlights the importance of broader industry structure (available generation, constraints, etc.) and of procurement mechanisms on observed outcomes following the deregulation of retail prices. As with Illinois, the lifting of rate restrictions in Maryland has been associated with increases in retail prices for all types of customers – up to 70% for residential customers of the largest electricity supplier (BGE). While at first sight this may give rise to concern, it needs to be put in the context of regulated prices which were set below competitive market levels in the years when the rate freeze was in effect: BGE estimates and that the prices in 2006 immediately prior to the expiration of the rate freeze were actually below prices in 1993.

It is again notable that despite such significant increases the policy and regulatory response to date has not been to ‘re-freeze’ the retail rates, although some measures have been introduced to smooth price increases over time. Rather, in response to the calls for ‘re-regulation’, the focus has been on identifying and, where appropriate, remedying the underlying causes of the increase in retail prices, such as the limited amount of indigenous generation capacity and the existence of major transmission constraints, as well as the arrangements by which energy is procured by retailers.

4.5 Retail electricity deregulation in the Nordic countries

4.5.1 Introduction

The experience of retail electricity market opening in the Nordic countries, particularly Norway and Sweden, provides an interesting, alternative case study to those of retail deregulation in the United Kingdom and the United States. Although the process of opening up the market to retail competition began at approximately the same time in all of these jurisdictions the approach taken to controlling retail prices was quite different in Scandinavia to that adopted elsewhere, including in Victoria.

More specifically, the approach adopted in Norway and Sweden when opening the market to retail competition was not to underpin such measures with formal retail price oversight or control. There was, therefore, no recourse to precautionary price controls. As a consequence there is no specific point at which retail price regulations can be said to have been ‘removed’ or ‘lifted’ in these countries.

Nevertheless, the experiences of the Nordic countries are informative insofar as they provide useful insights into how a retail market can operate in the absence of explicit

⁴² S. Switzer and J.P. Trout, “The ‘Optimal’ Structure of the Deregulated Electric Utility Industry”, *Electricity Journal*, 20(6), July 2007.

restrictions on retail prices. As Stephen Littlechild recently concluded when examining retail competition in these markets:

“Important too, has been the absence of price controls or other restrictions on the final retail price, which has enabled retail competition to flourish in the Nordic residential electricity markets, unlike many other such markets. The Nordic markets have shown that ‘retail competition works’: it can indeed provide not only a variety of prices and a choice of supplier, but also a significant range of ‘value-added services’. In contrast, the more restricted markets seem to be characterised by less innovation and less variety of contracts and services than are the Nordic markets.”⁴³

The discussion in this section also helps put into context the fluctuations in retail prices observed in some of the US examples following the lifting of price restrictions, notably Illinois and Maryland. For example, it has not been uncommon in for residential retail prices in Scandinavia to fluctuate significantly on a yearly basis, including prices increases of up to 70%. This level of increase is similar to those recently experienced in Maryland, discussed earlier. However, it is notable that such price increases have not been accompanied by vociferous calls for the re-regulation of retail prices. Indeed, as discussed below, there appears to be an increasing appetite for new tariffs (on the part of both residential and industrial customers) which are directly linked to the underlying spot price of electricity.

A further interesting observation – and one which corresponds to the recent experience in Texas following the expiration of the Price to Beat requirements in that state – is the variety and innovation in tariff designs that have emerged in the Nordic countries in the absence of price restrictions. These include tariffs with varying degrees of exposure to wholesale market price fluctuations, as well as what could be described as ‘hybrid’ tariffs which combine periods where retail rates are fixed (e.g. the winter months) and periods where rates are linked to the spot price of electricity (e.g. the summer months).

Once again it is important to be mindful of the specific characteristics and design of the broader electricity market when considering the observations made below. In particular, a unique characteristic of these markets, particularly Norway, is the predominance of hydropower generation which, in part, has meant that the *levels* of wholesale and retail prices have traditionally been among the lowest in Europe. These traditionally lower levels of prices are obviously an important consideration when examining the regulatory response to relative changes in prices, and one which may not easily translate to other contexts where price levels might, in consequence of past monopoly, be considered to be high.

4.5.2 Norway

4.5.2.1 Policies

The process of deregulation of the Norwegian electricity market began in 1991 and since that time the retail market has, in principle, been open to competition. However,

⁴³ S.C. Littlechild, “Competition and contracts in the Nordic residential electricity markets”, *Utilities Policy*, 2006.

it is generally accepted that, in practical terms, full retail market competition was only introduced in 1997 when the last of the restrictions on eligibility in relation to switching were lifted.

As already noted, an interesting aspect of the approach to retail market opening in Norway was that the liberalizing measures were not accompanied by explicit price controls or by other restrictions on end-user retail prices. This means that retail electricity supply prices are set entirely by the market. The Norwegian Competition Authority does, however, require all electricity suppliers to publish their prices for the main products and contracts for residential customers on a website which it maintains.

4.5.2.2 Indicators

The experience of retail market opening in Norway is considered to be one of the most successful in Europe, and competition is generally judged to have developed well in the relevant markets. It is estimated that there have recently been about 130 residential retail suppliers operating in the market, at least 25 of which compete at the national level.

Price movements

The Norwegian electricity generation market is predominantly based around a hydropower system and as a result wholesale and retail electricity prices reflect, in large part, environmental factors such as whether it was a 'wet' or a 'dry' year. In Norway, wholesale electricity prices are set on the basis of the Nord Pool spot price which is the price determined through the multinational Nordic Power Exchange.

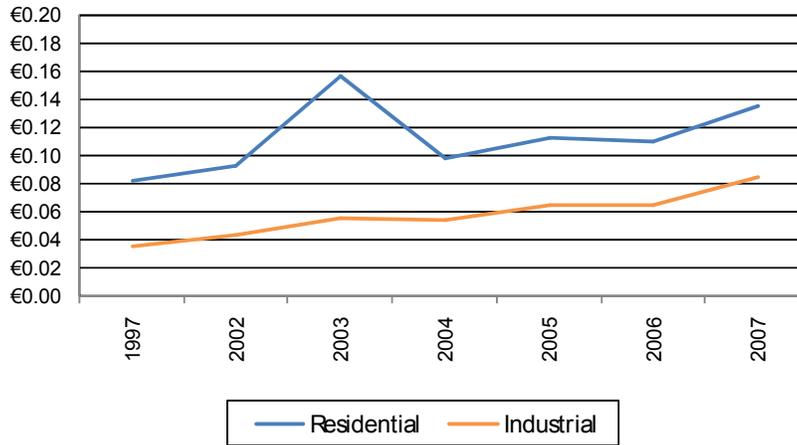
There is a significant amount of differentiation among the retail tariffs offered by electricity suppliers. These include standard variable tariffs that can be changed at short notice, tariffs that are linked directly to the spot price of wholesale electricity, and contracts that fix the retail price for periods ranging from 1 to 3 years. The relative take-up of these different tariffs shows that more customers – estimated at about 23% – have taken up contracts where retail prices are linked directly to wholesale spot prices than have taken up fixed term contracts (estimated at about 17%).

Chart 15 below shows the change in average retail electricity prices over the period 1997 to 2007. This chart shows that prices for both residential and industrial customers have, in general, increased since the last of the restrictions on retail market customer switching was lifted in 1997. It is estimated that over the 10 year period residential retail prices have, on average, increased by approximately 66%, while the retail price increase for industrial customers is estimated at around 140%

Of more interest are the observed changes or volatility in end user retail prices during this period, particularly given the absence of restrictions on retail prices. Chart 15 shows there have been some periods of significant price volatility especially for residential retail prices. For example, average residential retail prices increased by some 69% during 2002 to 2003 – reflecting a price spike in the Nord Pool wholesale market – only to then reduce again by 59% on average in the following year.

Similarly, residential retail prices increased by approximately 25%, on average, from 2006 to 2007.

Chart 15: Norway avge price kWh - in cents (household prices excludetaxes, and industrial prices exlude VAT) 1997 -2007



Source: Eurostat

Customer switching

The rate of customer switching has increased over time, particularly following the lifting of restrictions on, and associated charges for, switching supplier in 1997. The Norwegian energy regulator estimates that around a half of households have now switched electricity supplier at least once since market opening.

It is estimated that in 2007 some 25% of residential customers were supplied by a competitive (non-incumbent affiliated) supplier. This compares to an estimated 5% of residential customers being supplied by a competitive supplier in 1999. In the most recent year for which data exists (2006) it was estimated that approximately 198,000 residential consumers and approximately 24,000 industrial customers switched suppliers.

4.5.3 Sweden

4.5.3.1 Policies

The Swedish electricity market was gradually opened to competition from 1996, with the transition to full market opening being completed by 1999. As was the case in Norway, the market opening initiatives were not accompanied by explicit price controls or by other restrictions on end-user retail prices, and supply prices are therefore determined by the market.

4.5.3.2 Indicators

In the initial years immediately following deregulation there were concerns regarding the development of competition in Sweden and, in particular, about the possible responses of the incumbent providers to the emergence of retail choice. However, in recent years the level of competition in Sweden has increased steadily, and Swedish

consumers have shown a greater willingness to respond to offers by competitive suppliers. It is estimated that there are now almost 130 retail suppliers in Sweden.

Price movements

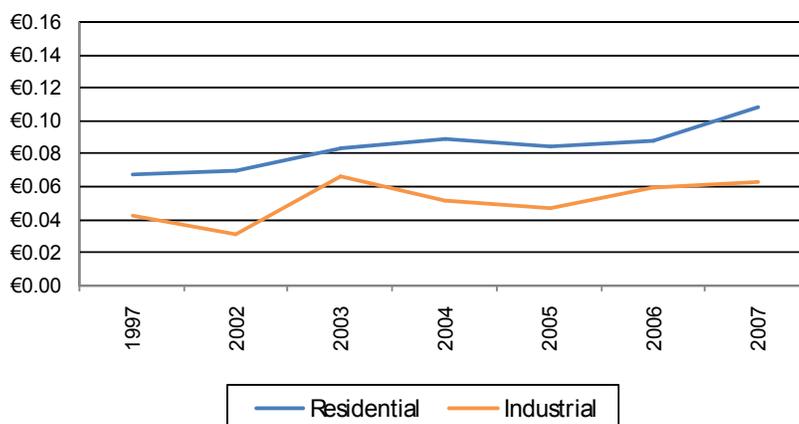
Electricity generators in Sweden participate in the broader wholesale Nordic market. However, unlike in Norway, retail prices have tended not to track wholesale price movements in the broader market very closely, but rather appear to be more closely linked with prices offered by Swedish generators. Swedish prices tend to be below average European levels: it is estimated by the European Commission that residential retail prices are lower than European averages by about 20%, while industrial retail prices have been some 22% below European averages.

There is a wide range of tariffs for retail electricity available to consumers, including a number of tariff variants that link the retail price in some way or other to the spot price of electricity. Notwithstanding the potential exposure to wholesale market price volatility, it is estimated that approximately 6-8% of residential customers are on contracts linked directly to the wholesale spot price.

Alongside these variable tariffs is a range of offers which fix the retail price of electricity for periods ranging from 1 year up to 5 years. It is estimated that around 45% of customers have switched to fixed-price contracts of this type. There have also been various innovations in the types of contracts offered, including a contract with a fixed retail component for one half of the year, and a component linked to the spot market for the other six months of the year.

The change in average retail electricity prices for electricity in Sweden over the period 1997 to 2007 is shown in Chart 16. It is estimated that residential retail prices have, on average, increased by approximately 61% over this period, while industrial prices have increased by an estimated 50%.

Chart 16: Sweden average price kWh - in cents (household prices exclude taxes, and industrial prices exclude VAT) 1997-2007



Source: Eurostat

Once again, given the absence of restrictions on retail prices, it is interesting to observe the relative volatility of retail prices over time. In general, while there have been some periods of high volatility, especially for industrial retail prices, the price variations have been less pronounced than in Norway.

Customer switching

Customer switching is now common in Sweden and it is estimated that around 30% of residential and small commercial electricity customers, and more than 50% of industrial customers, have switched supplier since the commencement of market opening in 1996. The rate of residential customer switching has increased steadily over the years since completion of market opening in 1999, rising from 10% of residential customers in 2000 to 18% in 2002, and to above 30% in 2005.

In addition, it is estimated that a further 25% of residential customers have re-negotiated or switched away from the traditional or ordinary tariff⁴⁴ with their existing supplier. The number of customers on the traditional tariff has decreased from above 70% in 2000 to around 45% in 2005.

4.5.4 Summary

Although not directly comparable to the approaches to retail price regulation in Australia, the UK or the United States, the experience of retail market opening in Norway and Sweden, including in relation to the evolution of prices and price offerings, nevertheless provides some interesting information.

The Scandinavian developments have been low key and measured, but there have been relatively significant changes in market structures over a relatively short period of time, and some major price shocks have been absorbed without threat to the integrity of the overall market arrangements.

Perhaps the development that correlates most with experience in the UK and with Texas has been the emergence of an array of new tariffs. As noted in relation to Texas, this augurs well for the continuing development of retail competition in that, *ceteris paribus*, such diversity contributes to a market structure in which co-ordination among suppliers is likely to be more difficult to achieve than it would be in circumstances in which tariff offers were more standardised.

⁴⁴ This is sometimes referred to as the standard tariff, but it should not be confused with a standard offer tariff whose terms are set by, or negotiated with, a regulator or government department. Prices on the traditional tariff can be changed by the supplier at short notice and, whereas changes in prices tended to take place about once a year before market opening, the frequency of price adjustments has increased since 1999, reflecting the influence of competitive pressures on incumbents.

5. Other UK cases of deregulation: airports and telecoms

5.1 Airports

In July 2007 the UK Civil Aviation Authority (CAA) published its advice to the UK Government to the effect that price controls should be withdrawn from London Stansted (but not Heathrow and Gatwick) and Manchester airports (the term used in the sector is ‘de-designation’).⁴⁵ The CAA’s position in relation to London Stansted was a relatively controversial one, since the CAA’s advice was made notwithstanding that Stansted is owned and operated by BAA, which also owns and operates Heathrow and Gatwick, and which, as a company, consequentially enjoys a position of substantial market power in the relevant market. The market position of Manchester airport is, however, rather more straightforward to assess, and the CAA’s advice to the Department for Transport followed the UK norm of seeking to removing price controls when competition has become ‘established’.

The reasoning behind the CAA’s advice is of direct relevance to the issues considered in this Report, and it is useful to take note of some of the relevant sections.

5.1.1 *The criteria for deregulation/de-designation*

The test is framed as a test for regulation, rather than deregulation. As explained by the CAA:

“Following consultation earlier this year, the Department for Transport published on 31 May 2007 its decision on the criteria it would propose to use in deciding whether an airport should be designated for price control under the Airports Act 1986. The criteria are as follows.

Designation of an airport is appropriate if, in the view of the Secretary of State:

- 1 the airport, either alone or together with any other airport(s) in common ownership or control, has or is likely to acquire, substantial market power; and*
- 2 domestic and EC competition law may not be sufficient to address the risk that, absent regulation, the airport would increase and sustain prices profitably above the competitive level or restrict output or quality below the competitive level; and*
- 3 designation under Section 40 of the Airports Act 1986 would, taking account of the magnitude of the risk identified in (2) and its detrimental effects were it to materialise, deliver additional benefits (i.e. over and above competition law) which exceed the costs and potential adverse effects of such designation (i.e. the incremental benefits are positive).”*

⁴⁵ *De-designation of Stansted and Manchester airports for price control regulation: the CAA’s advice to the Secretary of State*, London: CAA, July 2007. In the event, the Government announced on 15 January 2008 that it would de-designate Manchester airport, but not London Stansted airport.

All three parts of the test must be satisfied in order to justify price control: if any one of them is not satisfied, that alone would be sufficient to trigger deregulation of a price controlled airport.

It should be evident that the new criteria closely reflect the principles discussed in Part 2 of this Report. Price controls are directed at market power, and will therefore only be potentially justifiable where there exists substantial market power (Criterion 1). However, given that competition law exists to address harmful exercise of market power, it is only where competition law is judged inadequate that the further step of price control might be justified (Criterion 2). Even then, price control is not justifiable if, having conducted an assessment of the relevant trade-offs, the risks of harm from such controls are greater than the risks arising from the exploitation of market power (Criterion 3).

It should also be evident that a market that was judged to be effectively competitive would in all probability fail to meet any, let alone all three, of these criteria.

5.1.2 The CAA's views on price controls

On the issue of prices, the CAA's document setting out its advice to the Secretary of State says the following about the pros and cons of price control:

“Unsurprisingly, price controls are generally well suited to restricting prices and incentivising higher output, giving clarity to the regulated company (and its customers) as to the level of permitted prices until the next price control review. However, whilst price caps clearly prevent prices rising above a particular level, there are substantial challenges in setting the level of prices, and risks that price controls are set too low, or too high. The risk that a price control is set too high is – to some extent – mitigated by the existence of competition law. In other words, competition law could still bite to prevent excessive prices under a loose cap.

The risks of setting a price control too low, on the other hand, might be expected to pose a greater risk in that unduly low price controls can reduce prospects for the regulated airport – or, potentially as important, its competitors – to expand or enter the market. Too low a price cap could also distort airline location decisions. In addition, it could artificially encourage a regulated airport to opt to provide higher volume-lower service offerings (in turn, perhaps, leading to congestion) when – absent price regulation – there might be greater value in an airport offering a better quality service to fewer passengers.

If price controls are set at a level that artificially hampers the development of rival airports, this could in turn adversely affect the development of the market over time, to the ultimate detriment of consumers.”

Consistent with what has been argued in Part 2 of this Report, the CAA here particularly emphasises the risks of setting price controls too low in circumstances where there is competition to the regulated airport. These risks include restrictions on expansion and entry (restrictions of the supply-side), and possible reductions in quality of service, as well as the more airport-specific risk of inefficient location of new capacity.

The CAA goes on to say the following about service quality:

“There is also scope through price controls to address service quality. For example, in 2003, the CAA introduced a scheme of standards and rebates to provide incentives on Heathrow and Gatwick airports to provide appropriate standards of service.

Inevitably, like any scheme of this sort, much depends on the selection of the service quality metrics, and the extent to which it can be claimed that the metrics – either individually or jointly – reflect the service quality priorities and actual experience of passengers. In the case of Heathrow and Gatwick, therefore, the CAA is currently reviewing the appropriateness of the current scheme, seeking to refine, expand, rebalance and strengthen the scheme in order to improve its effectiveness in future.

Ex ante regulation, however, can also distort service quality decisions. Whilst regulators – including the CAA – typically strive to minimise the adverse effects of service quality regulation, there are significant risks associated with incentivising service performance. These include the risks that:

- the particular service quality metrics to which financial incentives are applied do not match end-consumers’ preferences (as noted above);*
- financial incentives encourage the regulated company to perform well on those aspects of service quality which can be measured, to the detriment or neglect of other – equally, if not more, important – aspects of service quality – which cannot;*
- the relative and absolute strength of financial incentives lies outside the costs and/or value of the service;*
- circumstances change within the relevant five year period, rendering the strength (or balance) of financial incentives inappropriate; and*
- there are unintended consequences.”*

The position of the regulator here is therefore a very clear one. For so long as price controls exist, and given the RPI-X approach, the regulator will seek to address quality of service issues, in recognition of the fact that setting prices without regard to quality of incentives provides incentives to degrade quality, to the detriment of consumers. However, the CAA has a very realistic view of the limits of regulation, recognising that in addressing an issue such as quality of service there are real risks of introducing new distortions and unintended consequences.

5.2 Telecoms deregulation

The last elements of retail price controls were finally lifted for UK residential telecoms consumers in July 2006, twenty five years after market opening and twenty two years after privatisation. This long lag may suggest a radical divergence in public policy between telecoms on the one hand and sectors such as energy and air transport

on the other. Assessment of market conditions, however, suggests that similar indicators – on market shares, switching, consumer awareness, etc. – have been used to inform the Ofcom decision.

Nevertheless, I think it would be correct to say that, in general, there has historically been a regulatory tradition of greater interventionism in the telecoms sector than in energy. The development of that tradition is now a matter for economic historians, but in relation to the specific factors relevant to retail price controls, one of the major differences with other sectors has been a persisting cross subsidy in BT’s activities. BT has historically made a loss on its access business, which was compensated for by high profits on calls. Although successive price controls had allowed rebalancing of tariffs, this never occurred at a rate sufficient to eliminate the cross-subsidy; and concerns about rapid rebalancing of tariffs have been a persistent factor in delaying deregulation. In turn, the persistence of the cross-subsidy, maintained by regulation, was an impediment to the development of effective competition, which in turn reinforced the tendency to delay – a process that provides yet another example of regulatory supervision of prices, in the presence of competition, having the effect of limiting and distorting that competition.

Turning to indicators of the state of competition in the market, Ofcom’s Explanatory Statement of 19 July 2006 confirming the decision to withdraw retail price controls on BT notes that, by 2006, 41% of residential fixed line customers had switched their line and/or calls supplier. This figure is close to the percentage of switchers in retail energy markets at the time of retail energy price deregulation: the difference lies only in the time it had taken to get to this kind of level.

Similarly, looking at market shares, it can be seen that, at the time of the introduction of the last price control in 2002, BT continued to enjoy a large share of the residential telecoms business. By implication, the rate of erosion of its market share up to that point had been relatively slow.

BT’s market shares (by volume)

	2002 Q3	2005 Q4
Residential exchange lines	83%	77%
Local calls	77%	56%
National calls	70%	59%
International calls	53%	44%
Calls to mobiles	75%	60%

The figures in this table indicate that there has been an acceleration in market share erosion since 2002, which is in part associated with new wholesale line rental products and with the introduction of local loop unbundling. Again, therefore, the picture that emerges is broadly similar to what was happening in retail energy markets at the time of their deregulation.

To date, Ofcom has not undertaken any detailed review of the consequences of the withdrawal of residential price controls and, given the rapidly changing nature of the

market, with broadband and mobile services continuing to increase in significance relative to traditional fixed line telephony, it may decide that it is not worthwhile to do so. Ofcom does, however, appear to be reasonably satisfied with the outcome, as the following summary from a recent document concerned with the consumer experience⁴⁶ indicates:

“Competition is continuing to drive price reductions. A household bill for a ‘basket’ of fixed, mobile and broadband services has fallen in real terms from £113 a month in 2001, to £76 in 2006 and further to £69.85 a month in 2007. Our analysis indicates that prices are now typically lower in the UK for fixed-line, post pay mobile and broadband services than in Germany, Italy and US.”

⁴⁶ *The Consumer Experience: Policy Evaluation*, Ofcom, 20 November 2007.

6. Final Assessment and Conclusions

The principal question addressed in this Report concerns the potential impacts of retaining price regulation in markets that are characterised by increasing competition.

It is immediately apparent that any such price regulation must be implemented in ways that are substantially different from the regulation of the prices of a monopolistic supplier, since account must be taken of the implications of the competitive pressures that exist in the market, and not just of suppliers' costs.

Since competitive pressures may in some market circumstances lead to prices that are below levels that provide suppliers with a normal return on capital, any price caps applied in the relevant conditions must be set higher than levels that would provide a normal return on capital. That is, they must, averaged over time, be set at above long-run market clearing or competitive levels. Otherwise suppliers will face the prospect of lower than normal returns when competitive pressures drive margins down, without any prospect of compensating, higher-than-normal returns in other periods. That would be a sure recipe for distorted supply-side incentives in general, and for the discouragement of investment and innovation in particular.

The requirement to set price caps above competitive price levels introduces the immediate difficulty of estimating those competitive levels. This will, at best, be a rather speculative task, but even if the difficulties could be overcome, the setting of a price cap in this way gives rise to a number of risks, including:

- Consumers may be misled into thinking that the price cap defines what the regulator thinks to be a fair and reasonable price, when in fact it is a price in excess of the competitive level.
- Similarly, consumers may be misled into thinking that offers of significant discounts on the regulated price must necessarily be good deals, when in fact they may not be.
- For the above reasons, consumers may curtail their search for alternative, better offers and end up paying higher prices than would otherwise be the case. In the longer run, a less active demand side of the market can be expected to lead to a less well functioning market.
- The existence of transparent, regulated prices, set at levels that would yield super-normal returns to suppliers and which would, with high likelihood, become focal points in the market, increases the risk of tacit co-ordination among suppliers, which would be to the detriment of consumers.
- The standardisation of focal points coupled with reduced consumer search activity creates a risk to the achievement of diversity and innovation in the types of tariff offered to consumers.

In relation to the fourth of these points, in this Report I have cited empirical studies of other markets which serve to substantiate the reality of the risks. In relation to the

fifth point, perhaps the most consistent finding from the study of deregulated retail energy markets is the tariff innovation that occurs when price regulation is finally ended. The retail electricity markets of Texas, the UK and the Nordic countries differ in many respects, but their records in relation to tariff innovation post deregulation are similar.

The above risks are all associated with outcomes in which price regulation determines prices that are always above competitive, market clearing levels. However, given the extreme difficulties in forecasting competitive prices – since these are prices that are discovered by a competitive process, the regulator is, in effect, trying to forecast things which are yet to be discovered – there must also be a realistic possibility that regulated prices will be set at too low a level, even if that is not the intention.

Remembering that all regulators tend to come under political pressures to hold down prices in market conditions where costs are rising quickly, the risk of inadvertently setting prices too low is augmented by the risk of prices being set too low for reasons other than the pursuit of backstop protection for consumers against the exercise of market power.

If prices are set too low, the consequence will be restricted supply side incentives and consequential restrictions of competition: new entry will be discouraged, as will investment, innovation, and expansion of all competitors in the market, large and small alike.

Again, I would stress that these risks are real, and not just theoretical. The short commentaries in this Report on experience in Illinois and Maryland serve to illustrate at least some of the consequences identified, and, of course, there is also the experience of the greatest and most harmful “liberalisation” failure of modern times, the reformed Californian electricity markets, to consider.

In each case, it is the combination of regulatory intervention and competitive pressures that is so difficult to manage. Price regulation limits the flexibility and adaptability of the market in the face of the various shocks that can occur. The actual consequences in a particular case will depend upon the particular types of shock that eventuate, but the risk exposure itself is caused by the restriction of the market’s ability to adapt.

It can, of course, be slightly un-nerving to contemplate regulatory withdrawal in circumstances of upward pressure on costs/prices, and in the conditions of uncertainty and change that characterise today’s energy markets. Particularly when considering impacts on consumers, it can look ‘safer’ to maintain price regulation ‘for just a little bit longer’.

That perceived safety, however, is an illusion, arising from a failure to work through the potential, indirect consequences of the retention of regulatory influences on market prices. In fact, both theory and evidence/experience suggest that, once competitive pressures have reached a certain level, and for reasons that I hope that this Report has convincingly demonstrated, maintaining price regulation is likely to be the more risky course of action.