# Practical consequences of trade off choices in regulatory and privatisation policies: what do we learn from gas and electricity privatisation in the UK

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This paper looks back at the transformation of gas and electricity industries in the UK through 1980s and 1990s with a view to drawing some lessons that may help understand the practical aspects of introducing markets in utility services that were historically provided through vertically integrated entities nationalised in 1940s. Public ownership, vertical integration and network dependence of gas and electricity supply meant that these entities faced no competition. From a neo-classical economics perspective these characteristics of utilities would be considered threat to consumer interests. Therefore, the arguments for privatisation mainly draw from the poor incentive structure obtained in public ownership and also from bureaucratic empire building hypotheses (see Vickers and Yarrow, 1988, Niskanen, 1975 and Shleifer Vishny, 1994[2]). Continuing the same framework from theoretical arguments for privatisation and regulation much of the empirical work on post privatisation performance of regulated utilities investigates whether the privatised firms' engaged in cost minimising behaviour as posited by neoclassical arguments (see for example Saal and Parker, 2001, Otken and Arin, 2006[3]). The focus has been on the consequences of changes in the property rights and regulatory institutions (see for example Armstrong et. al., 1998). The questions addressed have included impact of privatisation and regulation on the economic performance of these industries and consumer welfare as well as level of competition (Price, 1997, Megginson and Netter, 2001).

In this paper I focus on the policy decisions that were made with regards to creation of markets in gas and electricity industries in the UK. I show how the policy making and its

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[2] See Villalonga 2000 for a classification of different theoretical angles from which privatisation arguments have been made. Villalonga classifies them into three broad categories of Agency/Property Rights, Public Choice, and Organisation theories.

[3] A review of empirical studies of post privatisation performance is provided in Megginson and Netter, 2001.

implementation are tied to politics of the time in countries where electoral consequences and public opinion are not easy to ignore. I take this approach as it helps to better understand the practical aspects of regulatory reforms that have followed in many developed and in developing countries. Drawing from theoretical constructs of new institutional economics I argue that implementation of a policy requires considerations for changes at different levels of institutions as articulated in Williamson (1998). Privatisation and setting up of regulatory institutions is only part of the broader institutional framework that is needed if the objectives are to secure supply of gas and electricity services at the minimum possible costs. Both the gas and the electricity industries were privatised in the UK in 1986 and 1990-91 respectively but other than the similar method of transferring of ownership through capital markets to private investors there were significant differences on the government's approach to restructuring and regulation between the two industries. Privatisation of British Gas as vertically integrated company led to messy and slow transformation to competitive markets taking more than a decade for full competition to emerge. On the other hand the privatisation of electricity industry as disaggregated supply chain separating generation, transmission, bulk supply and retail distribution led to rapid and messy transformation to competitive markets by late 1990s. In both cases the development of competitive markets was complicated.

I discuss transformation of the UK gas and electricity industries which illustrate that privatisation alone is not enough to enable competition and therefore lead to expected gains from competition. Even combined with sector specific independent economic regulation there are limits to how much regulators can encourage the competition through the regulatory institutions as it turned out in case of the gas. Bringing in new regulatory regimes to engineer a change in the market structure, incentives for firms and to improve economic performance of regulated industries are challenges which can not be simply explained by looking at the instruments like price control or regulatory governance. I argue that theoretical framework of NIE provides a better handle on explaining the complexity of transition from state dominated economic organisation of utilities to market oriented organisation of firms and markets.

The paper is organised as follows. A brief historical economic and political context as it relates to gas and electricity industries in the UK is discussed in section two. In section

three aspects of new institutional economics are described. Section four and five respectively describe the institutional changes that were introduced in 1980s and 1990s to introduce markets in gas and electricity industries. Section six brings together some of the common issues in the two industries and concludes with forward looking observations in terms of the changing focus of the regulation.

## 2. A very brief note on nationalisation to privatisation journey in the UK

The years immediately following end of the Second World War witnessed intense nationalisation activity in the UK under the Labour government headed by the prime minister Mr. Clement Attlee. For example during 1945-46 the Bank of England, coal mines, civil aviation were nationalised, amongst others. This was followed by nationalisation of transport and electricity in 1947 and gas in 1948. It is argued that at a broader political level nationalisation was viewed by the Labour Party as an effective instrument to plan the economy through public ownership of the key sectors of the economy (Veljanovski, 1987).

The Conservative governments in 1950s accomplished partial denationalisation of the steel and road haulage industries allowing private firms to compete in the market. Veljanovski (1987) argues that the privatisation was not high on the priority list of the Conservative party in the early 1970s. Although the Party "*fought the 1970 election partly on the basis of an ambitious programme of denationalisation, but once in office they did virtually nothing apart from putting Thomas Cook and several small concerns back into the private sector. This was offset by the far more significant nationalisations of Rolls-Royce and British Leyland*" (Veljanovski, 1987:64-65). Even in the 1979 election the Conservative Party manifesto did not have privatisation of utilities as key policy issue.

During the first term of Mrs. Thatcher's government public spending as a proportion of GDP rose from 40.5 per cent in 1978-79 to 43.5 per cent in 1982-83 (Veljanovski, 1987). Failure to reduce the public expenditure forced the government to look for alternatives. Till the time of the first big privatisation, that of BT in 1984, the government did not have a coherent policy envisaging a rapid and comprehensive privatisation programme.

However, after privatisation of BT gas, electricity and water industries along with many other state enterprises were privatised within seven years. The speed of privatisation process was phenomenal. The question is what happened between 1979 and 1985 that such extensive and radical policy decisions were taken and implemented?

BT's privatisation proved a watershed in the privatisation programme. It created millions of new shareholders in a regulated monopoly operating in private sector. Also by that time people's attitude towards privatisation was changing with more people supporting the privatisation programme[4]. Once privatisation became politically attractive option, Mrs. Thatcher's government lost no time in bringing gas, water and electricity on the agenda. Crew and Searing (1988) explain how Mrs. Thatcher actually changed the ideological orientation of Conservative party more towards right by emphasising the three Thatcherite principles of discipline, free enterprise and statecraft. They report that it was the attitude towards de-nationalisation of industry where the public opinion shifted most significantly from 24% supporting denationalisation in 1974 to 42% in 1983.

The following Labour party declaration on public ownership reflects these changing trends in public opinion regarding poorly performing public enterprises,

" *Current disenchantment with social welfare is above all rooted in the failure of past Labour governments to adapt to new demands. The Morrisonian model*[5]*, perhaps appropriate to the immediate needs of war torn Britain, became outdated, leaving behind a legacy of unresponsive monoliths."* ( *Social Ownership*, 1986:1-2).

While the above statement did not endorse privatisation policy being pursued by the Conservatives it certainly highlights the point that nationalised industries had not performed well. By 1997 Labour's position on public enterprises had changed this as seen in 1997 general election, there was no mention of re-nationalisation in Labour's election manifesto, although a 'windfall tax' on privatised utilities was proposed and subsequently

[4] Veljanovski (1987) reports a survey carried out in December 1986 during the sale of British Gas shares, which showed that 44% of surveyed people supported privatisation against 28% who opposed it.

[5] After Mr. Herbert Morrison who promoted the idea of public corporation operating in the public interest at arm's length from the government. These corporations were viewed as not for profit but to break even and to serve the public interest

imposed on privatised electricity companies when Labour came to power in 1997. This shift in Labour's position (from the idea of re-nationalisation) thus completed the political acceptance[6] of privatisation by both the main political parties in the UK.

Two common features of both the nationalisation of industries in 1940s and the privatisation of industries in 1980s were the speed and lack of a systematic approach to the development of a detailed policy framework about industry structure and the institutional arrangements for control of these industries subsequent to transfer of ownership. In both situations excessive weight was given to speedy transfer of ownership compared to the less thought given to industry structure and regulation. Following two statements throw light on this feature of both the programmes which were three decades apart and carried out by two different political parties. Chester (1975) while commenting on the organisation of nationalisation poses various questions about the ways in which industries were organised after nationalisation. He writes that,

" *very little thought had been given either in the Labour movement or in Whitehall. It was generally agreed that they should be run by public corporations, not by Departments. The literature of 1930s and 1940s is full of references to public boards for this and that industry or service but nothing much beyond that. The lack of previous thought was reflected in the treatment of this all important aspect during the drafting of the Bills. The least amount of attention was paid to it in the discussion on the Coal Industry Nationalisation Bill. Probably the structure for electricity supply received most attention, largely because of the differences of opinions between the Ministers. By the time the Gas Bill was being drafted there was much more awareness of the problem, awareness made more acute by the realisation that the organisation of the coal industry was not proving satisfactory.*" (Chester, 1975:1025)[7]

Littlechild (1986) while discussing the large scale privatisation programme being implemented by the Conservative government in 1980s writes, " *this was a stroke of political entrepreneurship, for which I, like other commentators, was quite unprepared*"

[6] But such acceptance should not be construed as switch in political parties' belief in the market forces based on economic arguments as economic arguments are but one of the considerations in political decision making process.

[7] Chester, N. (1975). *The Nationalization of British Industry 1945-1951.* London: HMSO.

(Littlechild, 1986:102).

As is discussed in sections four and five below the initial privatisation, restructuring and regulatory legislations turned out not to be ideal to meet the objectives of creating competitive markets in energy in the UK. This less than optimal outcome on market structure in the post privatisation decade can be explained only when considered in the wider context of institutional environment and institutional change. The following section therefore, briefly explains the position that new institutional economics theory takes on these issues before discussing the privatisation and restructuring of the gas and electricity sectors in subsequent sections.

## 3. Some aspects of new institutional economics (NIE)[8]

Economics of institutions shows that firm need not be viewed as black box which tries to maximise profits and is only governed by the incentives. Institutional analysis of economic behaviour presents opportunity to consider the richness of the social, legal, political and economic context in which economic decisions are made. At the top level institutions represent the norms, social and religious traditions that are socially embedded (North 1990, Williamson 1998). These top level institutions govern (enable or constraint) developments of second level institutions that constitute what Williamson calls *institutional environment* comprising of formal institutions such as rules and regulations (see Figure 1). Locating politics, judiciary and bureaucracy at this level Williamson argues that changes in the institutional environment are difficult to affect and could be radically changed when a 'rare windows of opportunity' may present themselves in great crisis such as wars, economic crises and other threats.

At level 3 institutional economics concerns governance structures where in the property rights and legal institutions to enforce contracts are located. Transactions cost economics gets operationalised at level 3. Williamson (1998) argues that at this level the 2nd order economising is attempted by creating forms of governance structures (Hierarchy, Hybrid or Market organisations) to better align them *institutional environment*. Getting the governance structure in place paves way for application of neo-classical economics where

[8] This description of NIE draws from Williamson (1998, 2000) where he describes and elaborates a four level framework for institutional analysis (Figure 1).

in agency theory, price theory and marginal costs to achieve what Williamson calls 3rd order economising[9]. The most relevant for this paper are level 2 and 3[10].

(Figure 1 about here)

NIE also considers transaction as the unit of analysis. The is viewed firm as a governance structure that enables firm to lower costs compared to other alternative forms of governance such as vertically integrated hierarchical organisation and markets. These distinctions in viewing the firm in transaction costs economics allow considering the range of issues from property rights to regulatory policy. For example, unbundling of electricity sector into generation, transmission and distribution is an exercise into application of transaction cost economics where by a composite transaction from generation to final distribution to consumer is broken into several intermediate transaction and competition is encouraged for each stage where possible through a goverance structure that transforms a hierarchicy (vertically integrated electricity board for example) into a market structure where several entities are created to enable competition.

[9] Joskow 2004 though considers that agency theory and incentive alignments are more appropriate at level 3 rather than level 4.

[10] For a good discussion and explanation on what is new institutional economics see Joskow's presidential address to International Society for New Institutional Economics Conference, 2003.

Figure 1: Economics of institutions

| | Level | Frequency (years) | Purpose |
|---|---|---|---|
| L1 | Embeddedness: Informal institutions, customs, traditions, norms, religion | 100 to 1000 | Often non-calculative, spontaneous |
| L2 | Institutional environment: Formal rules of the game- especially property (polity, judiciary, bureaucracy) | 10 to 100 | Get the institutional environment right. 1st order economising |
| L3 | Governance: Play of the game-Esp Contract (aligning governance structures with transactions) | 1 to 10 | Get the governance structure right 2nd order economising |
| L4 | Resource allocation and employment (prices and quantities, incentive alignment) | Continuous | Get the marginal conditions right: 3rd order economising |

Source: Williamson, 1998, p.26

Total costs of production are considered to be costs of transformation and the costs of transactions. Transformation costs include what one would all production costs in microeconomics. Transaction costs include *defining, protecting and enforcing property rights to goods, the right to use, the right to derive income from the use of, the right to exclude and the right to exchange* (North, 1990, p.27-28). The total cost of supply of any good therefore, depends on economising the transformational efficiency and efficiency in

governance structure that would reduce transaction costs. Transaction also has different attributes which in turn has effect adaptability. These attributes are the frequency of transaction, the uncertainty to which transactions are subject to and the type and degree of asset specificity involved in supplying the goods or services (Williamson, 1991).

That governance structure of the firm impacts the performance of organisation is elaborated by Williamson (1991) where he expounds different forms of governance structures. Table 1 below summarises the three forms of governance structures namely; Market, Hybrid and Hierarchy.

Table 1: Distinguishing attributes of Markets, Hybrid, and Hierarchy governance structures*

| | Governance structure | | |
|---|---|---|---|
| Attributes | Market | Hybrid | Hierarchy |
| Instruments: | | | |
| Incentive intensity | ++ | + | 0 |
| Administrative controls | 0 | + | ++ |
| Performance attributes: | | | |
| Adaptation A | ++ | + | 0 |
| Adaptation C | 0 | + | ++ |
| Contract Law | ++ | + | 0 |

* ++ = strong; + = semi-strong; 0 = weak

Table 1 show four features of governance structures; namely incentive intensity, administrative controls, adaptability and contract law. Incentives and administrative controls are instrumental. A market based governance structure implies competing firms and buyers who respond to changing supply demand conditions and adapt to any other disturbances in market. The market participants have strong incentives to 'adapt' efficiently and reduce costs. In market governance structure therefore, autonomous adaptation (Williamson uses A to mean 'autonomy') is possible when supported by presence of strong incentives and appropriate contract law that will enable consumers and producers to engage in economic decisions to maximize their utility and profits

respectively. However, this form of governance is effective only when the transactions between the parties are independent and need little or no cooperation.

As supply chain of a good becomes complex where a series of transactions must be consummated before a good is made available to an end user, the adaptation becomes more difficult when at each stage of supply chain market governance structure is visualised. Such situation may result in a hierarchical governance structure whereby many transactions are internalised within the firm. This has been put forward as an explanation for vertical integration as adaptation to market disturbances requires closer coordination. Williamson argues that these adaptations (C) come at a cost as firms need to put in place administrative controls to arrest the consequences of reduced incentives that arise in a hierarchical organisation. Between the market and hierarchy is third form of organisation; hybrid. Hybrid governance mechanisms are characterised by intermediate incentive intensity and burden of administrative costs required to adapt which is also noted by adaptability as C meaning organisational hierarchy would require considerable coordination and cooperation to respond to internal and external changes.

The interaction of transaction attributes and the governance structure thus mean that before any regulatory institutions are created there is need to examine the suitability of governance structure (Market, Hybrid or Hierarchy) which would minimise the transactions costs. This is what Williamson calls 2$^{nd}$ order economising (Figure 1).

So what can be expected from the NIE theory about the practical consequences of policy changes. There are at least two clear expectations. Proposition one here is that subordinating the decisions on governance structures to constraints imposed by lack of fit with institutional environment will not deliver the economic outcomes as desired. For example, if the proposed by policy changes (such as restructuring of industry vs. vertically integrated monopolistic markets) are subordinated to constraints imposed by lack of fit institutional environment (for example, lack of capital market depth to absorb large privatisation or exigencies of impending elections or to win the support of political power constituency be it consumers, producers, investors or politicians) then the resultant market structure may not deliver expected outcome at all or in time.

Second proposition is that when the industry is restructured and markets are introduced to replace monopolies the need for adminstrative controls (regulation) will reduce (Table 1). Indeed the founders of the modern regulation (RPI-X) in mid 1980s thought that the post privatisation regulation will be at arm's length from the government and will eventually be reduced to bare minimum once the competition had developed in the privatised industries.

We test both these propositions in the context of privatisation and restructuring of the gas and electricity industries in following two sections.

## 4. Creating markets in gas

*1948-1986: A monopsonist and monopolist*

Transformation of the gas industry from monopolistic market to a competitive market provides a very interesting case study in the evolution of industrial policy in the changing institutional environment which resulted in particular governance structures to regulate the market in gas.

The Gas Act of 1948 nationalised 1,064 local gas undertakings and organised the industry in twelve regional area boards with a central undertaking Gas Council to act as a liaison between the government and the twelve area boards. The origin of the modern gas industry in the UK can be traced to the discovery of gas in the North Sea in early 1960s (Helm, 2004)[11]. Until then little gas was mostly derived from coal and in early 1960s there was some imported from Algeria and used as substitute fuel in some industries. Substantial gas reserves found in the North Sea 1960s encouraged the government to invest in the national pipeline network to enable distribution of natural gas for industrial and domestic use.

The Gas Council was almost a monopsonist as Helm (2004) explains that under *Continental Shelf Act, 1964* the council had first option to buy all the gas landed. This combined with control of licences that Gas Council provided to the oil exploration and production company gave the Council provided bargaining power over purchase prices. The Gas Council negotiated long term purchase contracts with private oil companies that explored and extracted gas. The Council sold the gas to large customers on negotiated

[11] Dieter Helm (2004) provides an excellent analysis of the development of energy markets in the UK since 1979. In this paper I draw on his discussion of electricity and gas industries.

contract prices and to retail customers on common tariff basis. The Gas Council later became British Gas Corporation (1972) and British Gas at the time of privatisation in 1986. The Gas Council's monopolistic use of market power to discriminate among the large customers through negotiated contracts would be challenged and investigated by Monopoly and Mergers Commission (MMC) as discussed below. The government did try to introduce some competition in gas supply markets by passing *Oil and Gas (Enterprise) Act, 1982*. Despite *Oil and Gas (Enterprise) Act, 1982,* British Gas remained virtual monopoly well beyond privatisation as we discuss below. The BG monopoly extended not only to supply of gas but it also dominated the markets for retailing in appliances and showrooms. It was only after MMC's 1980 enquiry in Domestic Gas Appliances market power concluded that 'BGC's retailing of gas cookers, gas space heaters and instantaneous water heaters was against the public interest,' that in July 1981 the government decided that BG Corporation should dispose of the showrooms for appliances to pave way for competition in this market which did not possess any characteristics of natural monopoly. However, until 1985 this action was not carried out by British Gas (Webb, 1985).

*1986-1995: Privatisation not equal to competition*

British Gas privatisation in 1986 as vertically integrated monopoly provides good case study evidence against the argument that privatisation itself may lead to competitive market structure. It took a decade of forced restructuring and separation of various arms of the business of British Gas to enable competition in the UK gas markets. Table 2 below shows the sequence of events to shows how difficult it has been to introduce competition for the government, Office of Fair Trading and newly created Office of Gas regulator. Before privatisation the government's legislative approach (through Oil and Gas (Enterprise)Act, 1982 and Energy Act, 1983) to introducing competition in the supply business by requiring BG to publish tariffs for carrying gas through its pipeline network did not succeed much. BG kept delaying the implementation of directives. One of the curious arguments put forward by BG actually redefined the competition itself by suggesting that BG faced competition from alternative energy fuels such as coal and electricity in industrial markets and hence customers did not face monopolistic choice (Helm, 1984).

| Table 2: Privatisation and restructuring of gas industry: 1980-1998 | |
|---|---|
| 1980 Monopoly and Mergers Commission inquiry into Domestic Gas Appliances | MMC concluded that BGC retailing of gas cookers, gas space heaters and water heaters was against the public interest.<br>The government agreed with MMC conclusions and wanted BG to reduce its dominance in gas in the retailing of gas appliances market.<br><br>However, the BG's dominance was maintained for years beyond this MMC enquiry.<br>(Webb, 1985) |
| The Oil and Gas (Enterprises) Act, 1982 | Allowed for privatisation of British Gas Company's oil assets and more importantly provided that BG should allow other suppliers of gas to use its pipe network to distribute gas. In effect though the competition did not follow. |
| Energy Act, 1983 | Government put in place a framework of pricing of electricity that required CEGB (an integrated monopoly that generated, transmitted and distributed electricity) publication of tariffs to be used for transmission and distribution systems. |
| Gas Act, 1986 | British Gas privatised as integrated monopoly with statutory monopoly for supplies below 25000 therms p.a.<br><br>Office of Gas Regulator created: (OFGAS) |
| 1987: First MMC referral after privatisation | Both Office of Fair Trading and Office of Gas Regulation were concerned about lack of competition and abuse of market power by BG in the non-tariff, (contract) markets that covered large consumers of gas. Price discrimination was the key reason cited. |
| 1988: MMC concludes enquiry | MMC inquiry found BG found guilty of discriminating among the large contract consumers. |
| 1989 | Introduction of price schedules for contract market and gas carriage |
| 1991 | New price cap agreed for tariff market. Office of Fair Trading report on competition in contract market |

| | |
|---|---|
| 1992 | Monopoly threshold reduced to 2500 therms p.a. Second referral to MMC |
| 1993 | MMC recommends breaking up BG before liberalising entire market<br>Change in DG of OFGAS, Clare Spottiswoode takes over as DG.<br><br>Government rejects MMC recommendations and announces introduction of competition |
| 1994 | Full liberalisation announced |
| 1995 | Gas Act, 1995 allows competition in the residential market and makes regulator responsible for ensuring competition in the gas markets |
| 1996 | First phase of competition in the south west of England |
| 1997 | Competition extended to 2 million consumers in the south of England<br>TransCo (pipe line business) and Centrica (retail gas distributor) demerge |
| 1998 | Full competition throughout Great Britain |
| Source: Adapted from Waddam Price (1997) | |

*1986-1999 Emergence of competition and break up of British Gas*

The newly created Office of Gas Regulation (OFGAS) was asked to regulate a non-restructured monopoly and faced expected high level of information asymmetry. How was regulator going to determine the cost structure and asset base to determine reasonable rate of return. Although price cap regulation instrument was to be used there was need to agree on appropriate rate of return on the assets involved in distribution network. Cost of purchase of gas was passed on to the consumers directly so regulatory decisions were required on the return on assets and scope of efficiency in operation of networks. In the first periodic review of price BG adopted current cost accounting based values which required higher return (BG seeking 9%) but OFGAS proposing lower at 5-7% arguing that the same had been allowed for retail consumers (tariff based) formula for RPI-5%. Since BG did not agree with the regulator's decision the matter was by default referred to MMC. The MMC enquiry recommendations would have far consequences [12] for British

[12] According to Helm (2004, 248-9) MMC enquiry was conducted by Michael Beesley and Geoffrey Whittington. Together they were inclined to introducing effective competition in gas markets according to Helm. This is what seems to be key intellectual conviction which, Helm argues, led to their

Gas. The MMC recommended that given that BG owned the network of pipe lines for distribution of gas it was not desirable that it competed in the downstream distribution business also. Hence it recommended that for effective competition to emerge BG's transportation of gas infrastructure should be separated from distribution and that this restructuring was necessary to achieve fair play for other suppliers in the industry. It recommended that the adverse effects of this dual role could be remedied by, '*disinvestment of BG's activities no later than 31 March 1997.'* (MMC, Vol.1, para 1.11, p.3)[13]. On the financial side, the MMC report rejected BG's claim for higher return and confirmed the regulator's proposed price caps. This report thus produced one regulatory choice and another market structure choice that was beyond the remit of the regulator and required the decision from the government.

While the OFGAS implemented the price cap as recommended the separation of network from distribution business was resisted by BG who lobbied hard for maintaining the integrated entity (Helm, 2004). The final decision after much debate and discussion within government and between government and BG was that BG will remain an integrated entity but will keep separate records for its network business and the supply business to facilitate regulatory practice and introduce transparency in the two businesses. It also agreed to government's proposal that competition be introduced for domestic gas consumers by 1998, the same time as it was scheduled for electricity customers. This decision was to prove very expensive for BG when competition was actually introduced in late 1990s and BG lost substantial market share in the domestic segment forcing it to actually go for restructuring and demerger on its own. However, before that were to happen the second periodic review of price controls carried out by new regulator of gas Clare Spottiswoode challenged some of the financial assumptions about asset base that were agreed by MMC in 1993 as well as she brought back in her review the need for restructuring of BG (OFGAS, 1996)[14]. BG rejected the OFGAS proposal leading to third referral to MMC who agreed (in effect revising its own view of 1993) with the regulator on financial methodology about asset base but recommended that restructuring issue be postponed to the next periodic review in 2001. However, as said earlier, the emergency of

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recommendation of breaking up BG so that it did not compete in the same market where it also owned the network.

13 Quoted in Helm (2004), p.249,

14 OFGAS (1996) *Price Control Review, 1997: British Gas' Transportation and Storage,* The Director General's Final Proposals, August.

vigorous competition in domestic markets soon after it was allowed in 1978 forced BG to restructure itself. Thus it took three MMC enquiries, regulatory interventions and government legislation to open up the gas markets and restructure the British gas industry.

*British Gas privatisation and regulation*

The Tory government in 1980s was ideologically driven to role back the state and ensure that the nationalised industries were returned to private hands while government policy ensured that there was appropriate oversight where competition was unlikely to occur. This is what captures Mrs. Thatcher's philosophy in her own words: "Privatisation.. was fundamental to improving Britain's economic performance. But for me it was also far more than that: it was one of the central means of reversing the corrosive and corrupting effects of socialism." Thatcher (1993). She goes on to compare privatisation with nationalisation, "just as nationalisation was at the heart of the collectivist programme by which Labour Governments sought to remodel British society, so privatisation is at the centre of any programme of reclaiming territory of freedom." *ibid.* Note the argument is more about undoing the damage caused by socialism and 'reclaiming freedom' than about economic rationale underpinning privatisation. This is confirmed further in her following words, " whatever arguments there may- and should- be about means of sale, the competitive structures or the regulatory frameworks adopted in different cases, this fundamental purpose of privatisation must not be overlooked. .. *if it was choice between having the ideal circumstances for privatisation, which might take years to achieve, and going for sale within politically determined timescale, the second was preferable option*.[15]" (Thatcher, 1993, p.676-7)

This was a politically big shift in industrial policy since 1940s and therefore, appropriate institutional environment could not be created without articulating the policy clearly and winning the public opinion for the idea. There were other considerations particularly the general elections in 1987. Thatcher was determined to privatise BG before that. Any restructuring would require time and concurrence from the incumbent management. Time was short and the incumbent management of BG led by the chairman Denis Rooke was opposed to the idea of restructuring the BG before or even after privatisation and he had a

[15] Emphasise mine.

sympathetic Tory energy secretary in Peter Walker. This combined with the need to make sure that BG remained an attractive investment opportunity for the investors meant that the government went ahead and privatised as a vertically integrated monopoly. The Office of Gas Regulator was enshrined in the Gas Act, 1986 but the expectation was that the regulator's role will be limited economic regulation focussed primarily on prices charged to domestic customers.

The government did succeed in making the privatisation as politically viable idea and thereby created institutional environment whereby privatisations programme be pursued. The next task was to get the institutions of governance, in this case markets in gas supply chain and regulatory regime that could implement appropriate incentives and disciplinary rules to ensure competition in non-natural monopoly segment. As discussed above political trade off between restructuring and pushing through privatisation meant that government lost opportunity to create market based institution of governance, namely, competition. The consequences of this missed opportunity were witnessed in the continued market power enjoyed by British Gas as privately owned utility for 11 years after privatisation. Repeated attempts by the government and regulatory and competition authorities failed to achieve a rational and competitive market structure in gas industry for eleven years which also hindered the application of economic tools such as matching the price controls to marginal costs and appropriate discount rates.

The above case thus shows what Williamson (1998) refers to as getting level two (institutional environment) and level three institutional governance (in this case market structure and regulator's role) right. In this case failure to get appropriate governance institutions did not facilitate the potential impact of property rights (privatisation) and prices and costs as coordinators of supply and demand the variables. Several regulatory interventions and MMC enquiries and expectation of regulators to monitor anticompetitive behaviour along side competitition authorities has meant that the proposition that move from higherarchies to markets reduces the need for regulation has not found support from the empirical evidence of the amount of regulation that still remains in the gas industry. So second proposition has not found support in this case.

In the next section we look at the transformation of electricity supply industry. Did this time the government get it right institutions of governance? And whehter the role for regulation has declined?

## 5. Creating markets in electricity

*1947-1988 Nationalised electricity supply chain*

In 1947 the UK government nationalised electricity industry taking over operations of 625 municipal and privately owned undertakings and reorganised the industry into 14 regional area boards two of which served Scotland and other 12 England and Wales all working under British Electricity Authority which eventually became Central Electricity Generating Board that operated as a vertically integrated generator, transmitter and distributor monopoly public enterprise for England and Wales[16] until the industry was restructured and privatised in 1990.

Before privatisation the Central Electricity Generation Board (CEGB) had a near monopoly of the electricity generated and sold in the UK. The CEGB also owned and operated the transmission system including connections with France and Scotland. Retail distribution was through regional Area Boards whose main responsibilities were low voltage distribution and billing.

*1989-1998 Restructuring and privatising electricity supply*

The Electricity Act 1989 restructured the industry and set the ground for privatisation of Electricity Supply Industry (ESI). The CEGB's assets were transferred to three new companies, two using non-nuclear generation capacity named National Power (around 2/3 of capacity) and PowerGen and one owning nuclear capacity, Nuclear Electric. 12 Regional Electricity Companies (RECs) were created to replace the 12 Area Electricity Boards in England and Wales. The national distribution grid and pumped water storage power stations were transferred to the National Grid Company (NGC) owned by the RECs and power generators. Regulatory frameworks for these companies, using price cap formula were announced prior to privatisation. An electricity Pool, operated by National Grid Corporation (NGC), was created to work as a market for bulk sale and purchase of

[16] Two Scottish area boards were covered by South of Scotland Electricity Board (SSEB)

electricity. The generators supply electricity into the pool and get paid *pool purchase price* and the RECs and other large customers buy at price known as *pool selling price.* Essentially the Pool is a set of highly sophisticated computer programmes which co-ordinates the supply of and demand for electricity subject to necessary constraints on continuity of power supply at varying voltage levels during peak and off peak demand periods. Pool prices may vary every half an hour. In Scotland the industry was split into two vertically integrated companies, Scottish Power and Scottish Hydro.

*Sale of electricity Industry*

All electricity companies (except nuclear power) were privatised by stock market flotation. The distribution companies (i.e., 12 RECs) were sold simultaneously but independently in December 1990, followed by the English generating companies (PowerGen and National Power) offered on a joint basis in March 1991. A similar arrangement was used for Scottish companies in June 1991. The decision to sell RECs first reflected the lower risk of distribution business with an identifiable regional monopoly compared with the more competitive generation business. The main objectives of the sale of RECs apart from transferring the ownership to the private sector were (NAO 1992): (1) to complete the sale to timetable (2) to maximise net proceeds (3) to widen and deepen share ownership (4) to achieve overall recognition that the sale had been a success (5) to achieve a modest post flotation premium.

To encourage the widest ownership public offers were at fixed price with incentives for individual investors. The disposal of 100% of the companies deliberately left the government without a controlling stake which might provide basis for subsequent re-nationalisation. The government, however, retained a special share commonly referred to as ‘Golden Share’ to prevent any take-over bids in the first five years after privatisation. In case of RECs this special share was to expire on 31 March 1995.

The flotations were very successful but turned out to be highly under-priced. For example in case of the RECs the first day's trading valued the companies at £ 6.3 billions compared with the flotation price of £ 5.2 billions. As against expected over subscription of about 2.25 times, public offers for shares of REC's were oversubscribed by 10.7 times. Some

nine million shareholders were created out of about 12.75 million applications (NAO, 1992)[17]. Subsequently almost 60% of the new shareholders had sold their shares in RECs in 1 1/2 year's time from the issue.

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*Regulation of Electricity Supply Industry*

An Office of Electricity Regulation (OFFER) headed by Director General of Electricity Supply (DGES) was established in 1989 to monitor performance standards and to implement the RPI-X system after privatisation. The responsibilities of the DGES were : 1) To ensure all reasonable demands are satisfied 2) To ensure that licensees can finance licensed activities[18] 3) To promote competition in generation and supply 4) To protect the interests of customers in respect of prices, continuity of supply, quality of supply. This regulatory role was result of lesson learnt from the gas industry regulation where the competition promotion was made part of the regulatory roles later.

DGES was also empowered to take steps to encourage competition in the electricity supply industry. At privatisation price caps were fixed for prices charged for customers with maximum demand not exceeding 1 MW. In April 1994 this limit was brought down to 100 kW. It means that the customers with maximum demand exceeding 100 kW were in position to buy electricity from any supplier of electricity. Customers with lower demand 100 kW maximum demand got choice to choose their suppliers from 1998.

However, even in the case of electricity an opportunity to create a more competitive generation industry was not fully availed. The generation activity of CEGB was split into only three companies PowerGen and National Power shared non-nuclear generation facilities while Nuclear Electric was created to take-over nuclear power plants. Initially it was planned to even privatise nuclear plants; incorporating them with National Power. However, the prohibitive de-commissioning costs would have made National Power unattractive for investors as a result Nuclear Power got separate corporate entity and was not privatised. Thus a duopoly in the non-nuclear power generation was allowed with

[17] National Audit Office (1992) The Sale of the Twelve Regional Electricity Companies (HC 10) , May 1992.

[18] Different terms have been used for rights to supply a utility service in different industries. In electricity industry the companies supplying electricity are ‘licensed’ and the service is called ‘licensed activity’ while in water and sewerage industry it is called ‘appointed business’. The essential feature is that these activities are regulated by RPI-X.

substantial market power enjoyed by the two companies. Subsequently the industry regulator (OFFER, 1991) reviewed the Pool Prices (an electricity Pool was created at privatisation which works as a spot market for bulk sale of electricity by generators and purchase of electricity mainly by RECs) and observed that the two main generators were able to influence the prices. Multiple and often conflicting objectives of privatisation pursued by government once again resulted in less than optimal decisions about restructuring of public enterprises, choice of sale of method and regulatory institutions and mechanisms created at the time of privatisation.

*Regulatory challenges despite restructuring and better regulatory arrangements*

Unlike British Gas, the regulated electricity companies were required to maintain separate regulatory accounts which was supposed to reduced the information asymmetry and provide better quality information about the cost structure for regulatory decisions. Despite this and the impartial and competent electricity regulator's efforts to measure the scope for efficiency in each of the regulated companies at the time of first period review in 1994, the announcement of price control order resulted in a large increase in the share prices of the regional electricity distribution companies. This attracted lot of negative press and created pressure for the electricity regulator to reopen the price control within few months of annoucing it.

Subsequently the offices of gas and electricity regulators were merged in 1999 which became inevitable as post 1995 when the mergers and acquisitions among and between utilities became possible several electricity companies and gas supplying companies were merged. This meant that the regulators also needed to share for more information and also to regulate combined entity. Creation of the Office of Gas and Electricity Markets (OFGEM) with mandate for protecting consumer interests and encouraging competition shows that the second proposition regulation will eventually become less relevant in gas and electricity is againg refuted by the actual developments contrary to theoretical expectation.

## 6. Explaining the policy choices and looking ahead

What the insitutional changes in the electricity and gas industries have shown in the

policy making and its implementation is that although economic performance is the stated objective political parties bring to bear their ideological view points as the main drivers for change. A consequence of giving more importance to political motives leads to compromise on choice actual policy instrments as shown in both cases of nationalisation and privatisation of electricity and gas industries in post 2nd World War period.

The nature (local network monopolies) of gas and electricity industries is one of the main reaosns the regulation is likely to prevail in future. However, in the last 10-15 years the emergence of green agenda as a key political challenge and its implications for energy policy have brough back the role of energy regulators and political interest in these sectors. The Fossil Fuel Levy, a tax on electricity suppliers to subsidise renewable energy sources is but one of the the post privatisation developments in regulatory expansion. The latest in the series of the UK government responses to environmental challenge has been to include environmental considerations as one of the key considerations in the proposed new principles for better regulation, this is what the consultation document says, "i*n recent years the regulated sectors have played a growing role in meeting the Government's social and environmental objectives, as well as economic objectives. This can create a challenge for the regulators to decide between objectives which include a set of judgements that can be political in nature alongside more technical decisions. There is a strong argument that the former decisions are most legitimately taken by Ministers. In the case of the latter more technical or specialist set of decisions, greatest authority may come when a regulator exercises its expertise independently."* (Department of Business, Innovation and Skills, 2011)

The proposals include more collaboration between the energy and water regulators on environmental issues, between the regulators and competition authorities and between government and the regulators. The consultation document also refers to renewed need for substantial investement required in the energy industries which means that economic regulation role will become again more active to make sure that both investors and consumer interests are protected over long term to make investment in these sectors attractive. All these unfolding developments in regulatory fields show that the initial view of the academic and policy commentators that economic regulation was likely to be a transitionary insititutional need till the competition developed in electricity and gas

markets is unlikely to materialise.

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