
GLOBALIZATION AND WATER RESOURCES MANAGEMENT: THE CHANGING VALUE OF WATER

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DEREGULATION IN WATER MANAGEMENT – CROSS-COUNTRY COMPARISON AND LESSONS LEARNED FROM THE ELECTRICITY SECTOR

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ABSTRACT: The present paper aims at identifying preconditions for finding an optimal form of market de- and re-regulation in the water sector. Deregulation has become a concept for the reformation of utility sectors almost world-wide. The preconditions for a successful restructuring of water markets, in particular, are far from clear. The paper thus tries to give some background on the goals, forms and policies, which lead to different market orders. These market orders have specific implications on service quality, prices, innovations and the structure of the sector as a whole. Examples of privatisation in the UK water sector and the deregulation of the German electricity market will be discussed in detail. Finally an outlook on the transfer of deregulation concepts to medium and low income countries will be endeavoured.

KEY TERMS: Deregulation, privatisation, regulatory framework, transferability

HISTORICAL AND THEORETICAL BACKGROUND OF DEREGULATION

Deregulation (which implies a liberalisation of market structures) is not an idea that rose to prominence only during the last years. Moreover, there seems to be a circle of deregulation and re-regulation especially in the management of infrastructure sectors (for an example of an energy utility in Bogota see Kessides 1993). Electricity supply, water supply and sanitation, railways and other infrastructure sectors are still perceived at least partly as natural monopolies. Therefore the question of how to efficiently run these monopolist structures is heavily discussed since decades. The difference which can be felt during the last twenty years is that the idea of deregulation and privatisation is being now spread also into Middle and Low income countries (MLIC), (Franchey, 2000) as a result of the assumed proven successes in the High income countries (HIC). The impetus for this change is regarded to come from the United Kingdom, when in the 80's the Conservative Party under Margaret Thatcher started their deregulation and privatisation movement (Franchey, 2000).

The general economic idea behind deregulation is the neo-liberal viewpoint that only in fully deregulated markets real competition is possible. In market economies individually and de-centrally made decisions are coordinated on a market, where equilibrium develops. The co-ordination is done by prices, which signal both the supply and the demand side the scarcity of the market good. The role of the state is seen to deliver proper framework conditions, which support the market mechanisms. In addition, the state is supposed to provide certain services as public goods, which due to various issues like natural monopolies, free-riding etc. are not subject to private provision. But real competition is being seen by the proponents of the liberal economics as the best option to provide efficient services and reduce governmental control. More freedom of competition is seen to deliver better results, while any restriction to free markets is supposed to deliver inferior results.

DEREGULATION AND PRIVATISATION

The term “deregulation” generally means the abolishment of certain rules in the economic structure of a society, which enables the respective companies to act with more freedom, according to their entrepreneurial spirit. Deregulation is focusing on the so-called “Old-style economic regulation”, which intends to determine business parameters and influence decisions like market entry, prices and product quality (Kasperk, 1996). Therefore with

deregulation there is a direct change in the market structure and the market outcome. “Privatisation” on the other hand can be one form for a deregulation process, when the public authorities withdraw from services they have performed and private companies take over, for various reasons.

Objectives of Deregulation and Privatisation

One of the main reasons for deregulation is inefficient results perceived in the regulated sectors. Lack of autonomy of the management leads to political decisions, which are inferior in economic terms. Regulation often follows also other intentions, like social policy with regard to price setting, which limits the signalling functions of prices and leads to inefficient economic allocation. (Kasperk, 1996). The main objective for deregulation thus is to increase the overall efficiency in the sector, which implies use of expertise to reduce shortcomings in technical, managerial and overall operational fields. Other objectives include an improved customer service, increases in capital investment and reduced political interference in the daily operation of the enterprises.

Forms of Deregulation and Privatisation

Increased competition due to deregulation in infrastructure sectors can take various forms, such as e.g.:

1. Outsourcing of tasks/ services previously undertaken by the public sector for a certain period of time
2. Full sale of public enterprises to the private sector
3. Enabling inset appointments, third party access to the network for other suppliers and free customers choice

Points 1 and 2 are examples for “competition for the market”, where the competition takes place during the tender of certain contract with the public sector, e.g. a concession contract. Point 3 is seen as “competition in the market” with competition taking place at the customer level, thus being the typical way of competition. On the other side, for forms 1 and 2, the situation is different. After a private company has been awarded the contract, it acts as a monopolist again. The competition surrogate, the tender process, must be organised in a way that it reaps the highest possible efficiency potentials. “Privatisation” in the context of this paper comprises all forms of outsourcing from public activities in the infrastructure sectors. This range starts with simple service contracts for the meter reading, includes long-term concession contracts and ends with the full-fledged divestiture of the public enterprises, including the assets.

Results

The following table presents in general terms the achievement of deregulation (adapted from The World Bank, 1997):

Table.1: Achievement of the Objectives using various forms of deregulation

Deregulation objective Option	Expertise	Managerial Expertise	Operating Efficiency	Investment distribution system	Insulation from political intervention	Improve Customer Orientation
Service contract	Partial	No	No	No	No	No
Management Contract	Yes	Partial	Yes	No	Partial	Partial
Lease	Yes	Yes	Yes	No	Yes	Yes
Concession	Yes	Yes	Yes	Yes	Yes	Yes
BOT	Yes	Yes	Yes	No	Partial	No
Divestiture	Yes	Yes	Yes	Yes	Yes	Yes
Enable TPA	Yes	Yes	Yes	No	Yes	Yes

EXAMPLES OF DEREGULATION – THE GERMAN ELECTRICITY MARKET

Objectives of Deregulation

In December 1996, the European Directive on the European internal electricity market set minimum competition standards. The German government decided, to “overcomply” with this directive, which suggested a stepwise market liberalisation, and changed in April 1998 the national laws to open the electricity market for all

consumers. The main objective was the introduction of competition in the market to increase efficiency and obtain lower prices.

Forms of deregulation and regulation authorities

The “competition in the market” approach with third party access was used in this case. Germany decided to opt for a “negotiated” instead of regulated third party grid access. The various electricity producers and marketers have a right to use the distribution grid (which is of course still a natural monopoly) via a negotiated third party access. Negotiations are made on an individual, non-standardised basis between the parties involved. The framework is set by a voluntary arrangement (“Verbaendevereinbarung”) from the major associations in the sector (Erdmann 2000). There is no particular public authority in charge of electricity market de- and re-regulation. The Federal Anti Trust Authority observes only the general competition process and sets the rules for the unbundling of the generation and distribution departments of the companies.

Tentative Results

With regard to prices, all customer groups benefited from decreased prices, with the industrial customers having 30% lower prices. The prices for electricity production dropped much more than the fees for the grid usage, which in fact are twice as high as those in the UK (Haupt and Pfaffenberger, 2000). Maybe the missing regulation authority is the reason for this. The companies adopted strict de-staffing policies: the number of employees decreased by more than 25% between 1995 and 1999. Many companies try to establish brands for the electricity in order to achieve a differentiation to their competitors. Innovations like “powerline”, (high-speed data transmission, e.g. for Internet access via the electricity plug) or environmentally compatible “green power” products, can be found in this highly active market. In spite of huge marketing efforts, though, the willingness to change the supplier is rather small at the household level. In terms of market structure, it can be seen that the breakdown of regional monopolies tends to be followed by a new oligopoly of power generation companies. With upcoming liberalisation there were a couple of mergers, especially between some of the former key players of the sector, and many acquisitions of former independent, municipal companies. Now, the two major utilities control more than 50% of the electricity generation capacity in Germany. And it is assumed that most of the former 700 utilities will not survive the next years. The expansion of the big players into the distribution business of the municipal utilities would in fact mean the reversion of the unbundling process. The total revenue of the sector decreased by 12% with more or less stable electricity sales, which lead to shrinking profits. This is a particular problem for smaller, municipal utilities, which either tend to be sold to or at least controlled by bigger competitors via strategic investments. If this will also mean increased prices in the future is not yet clear. But the first signs of rising prices are already visible in the German electricity market. The tendency of reduced prices at the start of a deregulation process and rising prices after a concentration process (perhaps even to the pre-competition levels) can be observed in many other cases (see Malbon, J., 1998)

EXAMPLES OF DEREGULATION – THE WATER MARKET IN ENGLAND AND WALES

The following is only a brief summary of the topic, which is needed to draw some conclusions and serves as an example.

Objectives of Deregulation

In 1986 the conservative government in the UK published its plans for the privatisation of the water industries. The objectives were stated as: reduction of political interference, increase of private capital injections, efficiency improvements and lower prices for the customers (Department of Environment, 1986).

Forms of Deregulation and Regulation Authorities

In the first step (1989), the existing water authorities were fully privatised. In this phase, competition in the product market did not take place, but competition in the capital market was thought to force the private monopolies towards efficiency and innovation. Since the regional monopolies still existed, a regulation in terms of prices, quality and environment was required. A whole set of regulation authorities is accompanying the private companies: To prevent excessive pricing a price-cap-regulation (with yardstick competition) is used, which is conducted by the economic regulator OFWAT (Office of Water). OFWAT is also in charge to set standards for the efficient operation of the companies (like e.g. the reduction of water leakage) and for the protection of the customer (with Customer

Service Committees). Other regulatory institutions include the Drinking Water Inspectorate, the Environmental Agency and the Competition Commission has to approve any mergers or other major changes in the structure of the water market.

In the second step, with the Competition and Service (utilities) Act 1992, competitive measures like inset appointments, cross border supplies or common carriage (third party access) were possible. The Competition Act 1998, which came into force on 1st of March 2000, strives to enforce more competitive elements in the water sector. It prohibits any anti-competitive agreements and abuse of dominant market positions, putting more pressure on the companies. As with the example of the German electricity market it has to be seen if even household customers will benefit from lower prices due to competition.

Tentative Results

The difficulty for the regulator to set effective price caps due to asymmetric information was seen in the first five years, when the profits earned by the privatised companies were way above the normal profits. The tariffs for water rose significantly during the first years, partly due to high capital investments (£ 33 billion in 1999 prices, according to Ofwat [1999]), partly due to wrong tariff setting. In 2000 new tariffs were introduced, implying a tariff reduction in real terms of 12.3% on average and using the efficiency gains of the companies (Ofwat, 1999). The customer satisfaction seem to have increased (Ofwat, 1999), but concerns about high water bills, water leakage and security of essential services remain. The usage of water meters rose significantly, enabling an improved billing according to real consumption.

The number of inset appointments is very limited – according to OFWAT data (Ofwat, 2000) there were 8 cases approved, 6 consultation processes completed and 9 additional applications. The very low number of 23 cases might result from the rather complicated conditions for inset appointments (like minimum demand for water). During the privatisation process, French and American companies bought some of the newly privatised enterprises. Just last year, the German RWE Aqua took over Thames Water, the third biggest Water Company in the world. While these were still “normal transactions” in a competitive market, the most recent transaction is somewhat different: A non-profit entity called Glas Cymru purchased Welsh Water (which is serving much of Wales and some adjoining areas of England). The striking point is the fact that there will be no shareholder value strategy, which is supposed to make substantial saving and enables reduced bills. (Reina, 2001). Interestingly, the company will come politically under the jurisdiction of the Welsh National Assembly – which can be seen as a major step away from privatisation.

TRANSFERABILITY

Lessons learned from the examples

The examples used in this paper focus on infrastructure sectors in HIC. The effect of this is to see the opportunities, but also the challenges of deregulation processes in a rather clear way under comparatively sound economic conditions. Before we draw some conclusions on the transferability of these experiences to developing countries, we would like to highlight some general characteristics of the water and electricity sector. In many market institutional discussions the apparent successes of one sector are simply being transferred to the other. The following table shows some shortcomings of this approach, using Germany as an example.

Table.2: Comparison of the German Water and Electricity Sector

Criteria	Water	Electricity
Infrastructure Characteristics (Production/ Generation – Transmission – Distribution – Consumption)	<ul style="list-style-type: none"> Decentralised water sources with varying qualities in terms of colour, smell, taste or turbidity Numerous, local or regional grids without interconnections Physical mass flows in transmission, local distances, production-consumption circle Physical product quality may well change depending on the supplier More than 6'000 utilities Water is basic foodstuff, i.e. essential for life and convenience good, e.g. for washing, water is tangible High psychological and emotional impact; politically 	<ul style="list-style-type: none"> Centralised power generation, all sources produce same quality of electricity in terms of voltage and frequency Interconnected transmission grid on a national, partly transnational scale Power flows instead of mass flows, long distances, no circle - electricity is transformed to heat Physical product characteristics rather homogeneous throughout the entire grid, physical product quality does not change with regards to supplier About 700 utilities Electricity is basic convenience good, i.e. essential for living,

	<p>sensitive with regards to product quality (this is also the case e.g. in Switzerland or Canada, and also in many developing countries)</p> <ul style="list-style-type: none"> • Alternatives in distribution, i.e. drinking water in bottles 	<p>electricity is intangible</p> <ul style="list-style-type: none"> • No particular emotional impact, politically sensitive with regards to electricity generation, e.g. nuclear power • No alternatives in distribution, little alternatives in autarkic generation
Cost structure	<ul style="list-style-type: none"> • Approx. 70-80% of the cost are invariable, main cost parts in the distribution (natural monopoly) and not in the generation (contestable market) • Financial savings under competition may be rather small, esp. for household customers 	<ul style="list-style-type: none"> • Less than 30% of the costs are related to transmission and distribution. Due to missing regulation monopoly rents are still available in this area. • Financial savings under competition may be significant, even for households
Environmental aspects	<ul style="list-style-type: none"> • Environmental effects are related both to production and consumption – on the production side more or less similar, on the consumption side very different (industrial, private) • Water consumption has mainly local environmental effects (quantity and quality effects) 	<ul style="list-style-type: none"> • Environmental effects (e.g. Greenhouse effect) are related to electricity production mainly and quite different in quality and quantity for each technology (nuclear, coal, gas, hydro) • With lower electricity prices the reduction of electricity consumption and increased efficiency is less attractive.
Political aspects	<ul style="list-style-type: none"> • Water is seen as a symbol for state autonomy and is very politically sensitive 	<ul style="list-style-type: none"> • Electric energy is essential for economic development and as soon as the security of supply is under question, electricity can become highly politically sensitive
Most likely type of competition	<ul style="list-style-type: none"> • Competition for the market (tender of management contracts or concessions etc.) where private companies operate the assets owned by the municipalities. • Increasing competition for industrial customers 	<ul style="list-style-type: none"> • Competition in the market, especially for industrial customers • Increasingly competition for market (electricity wholesale and strategic investments or take-overs of municipal utilities)
Regulation	<ul style="list-style-type: none"> • Very intense and detailed, but informally arranged since companies are public enterprises: <ul style="list-style-type: none"> • Environmental regulation • Health regulation • Price authority • Anti trust authority 	<ul style="list-style-type: none"> • Used to be highly regulated <ul style="list-style-type: none"> - price regulation, environmental regulation - public service obligation (safe supply, quality standard, supply of remote areas), - resource use / purchase obligations (oil, coal, renewables) • Deregulation with regards to price, resource use and public service • Re-regulation with regards to grid access and anti trust authority

As the table shows (not only for Germany) it is difficult to simply transfer the concept of deregulation from one sector to another. Nevertheless, some positive effects, which were seen on the electricity market, can be expected as well in the water market. The merger and acquisitions of small companies, which in many cases do not possess the proper company size in economic terms, will safeguard a cheaper and more sustainable operation of the facilities. Industrial customers who benefited most in the electricity sector already have the possibility of outsourcing their water supply to any private company, while individual households will not benefit much from a competition in the water market. Another lesson is that regulation plays a crucial part. Due to the lack of regulation in the German electricity sector, grid access fees are still very high and insecurity about possibilities and ways to change the supplier prevail. Here, improved regulation could reduce transaction cost and increase the general performance of the sector.

In the water sector, a deregulation like in the German electricity sector is very unlikely – even major private companies are in favour of privatisation instead of competition in the market (ZfK, 2001). Reasons like technical insecurities, the lack of a national grid or transportation cost are mentioned against the idea of competition in the market.

Since the type of competition is very different, the knowledge transfer is very difficult. A full divestiture like in England and Wales is also not on the agenda, and the activities to enforce competition with third party access and inset appointments are very unlikely, too. Nevertheless, the complex regulatory system used in England and Wales indicates the difficulty of increasing efficiency and safeguarding the interests of customers and the environment. The issue of regulation is very important, due to the special characteristics of the good and the political sensitiveness. Both, environmental and health aspects ask for strict compliance with the law, which of course has to be enforced. Thus, the institutional capacity of the relevant regulation authorities has to be strengthened; i.e. additional regulation capacities will be required to achieve the politically desired results in social and environmental issues. Even if TPA was used and the requirement for a price cap regulation did not exist /which is stated quite often in the discussion in England and Wales), the control of the quality standards would still require enormous regulation capacity. These induce additional cost which have to be borne by the taxpayer, and a cost-benefit-analysis has to bear these cost also in mind.

Beside this, the oligopoly structure on the supply side of privatisation services is also hampering the success of competition for the market processes. Since a few global players dominate the sector the competition for the market

is very limited. And even in Germany only a few companies are prepared to entry the market for privatisation contracts.

Regulation as the key issue

Municipalities often lack experience in tendering processes and contract negotiation, especially if they have to deal with experienced multinational operators. Since privatisation is already possible by federal law, even without deregulation (both for municipalities and companies), and many municipalities are looking for new ways to finance their infrastructure, the motivation to privatise the infrastructure sectors is likely to set the pace for deregulation. Therefore, especially the municipalities, but also the regulatory bodies have to be prepared for these privatisation processes. For a privatisation contract, many various topics have to be regulated, either by the municipalities or by the regulators. According to the various options of privatisation mentioned above the following table indicates some basic regulatory requirements (adapted from: The World Bank, 1997):

Table 3: Regulatory Requirements for various Deregulation Forms

Option	Regulate Prices	Promote Operating Efficiency	Specify/ Monitor Service Standards (O&M, Health, Environment)	Ensure Asset Development	Ensure Customer Orientation
Service contract	No	No	Yes	No	No
Management Contract	No	No	Yes	No	Yes
Lease	Yes	Yes	Yes	No	Yes
Concession	Yes	Yes	Yes	Yes	Yes
BOT	Yes	Yes	Yes	No	No
Divestiture	Yes	Yes	Yes	Yes	Yes
Enabling parallel pipelines	No	No	Yes	Yes	No
Enable TPA	No	No	Yes	Yes	No

The used privatisation option therefore should be selected according to the deregulation objective (see table 1) and also according to the short- to medium term regulatory capabilities. This holds true even more for MLICs.

CONCLUSION

The globalisation of the concept of deregulation is highlighting the importance of regulation. The important question often overseen in the global discussion of deregulation, especially with regard to MLICs is therefore: Are the public institutions capable of delivering the required framework to improve the efficiency, protect the customers and ensure reliability of rules and norms? The inefficiency of many public utilities is often correctly criticised, but in most cases the main reasons for the so-called ‘inefficiency’ are political influence on the daily operation issues. Since the same political institutions will be in charge for the set up of the necessary regulatory bodies to support deregulation, the assumption that they will be setting up a regulation process to overcome all the mentioned inefficiency must be critically reviewed. The most critical issues that have to be addressed are the allocation of tasks, the setting of appropriate incentives, how to overcome asymmetric information and to prevent the capture of the regulatory body by the regulated companies. To solve these requirements, without increasing the total size of the public economy, is the challenge. Taking the example of the UK, it can be seen that privatisation processes can induce a complex regulatory system. Competition in the market again has to be judged carefully, if and how it is possible – and what is the scale of benefits to be reaped for various customer groups. It has to be analysed if there are real cost savings possible or if, like in the German electricity market, marketing cost compensate the cost savings. A full cost-benefit analysis must also include the cost of setting up and maintaining the regulatory system – costs, which could differ a lot. The paper has shown that it is difficult to transfer experiences from one sector to another, and even within one sector there are major differences, according to the chosen form of deregulation and the available regulatory capacities. This has to be borne in mind when deregulation and privatisation is proposed as the universal solution. If even the regulating authorities in the United States (see California) and the UK fail to judge correctly the economic framework conditions in deregulated markets, can regulatory bodies in the MLICs be expected to be more successful?

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