Consumer-inclusive economic regulation: water pricing under different regulatory regimes

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Abstract

This paper investigates whether and how different regulatory regimes for water pricing incorporate mechanisms for consumer inclusion. A literature review suggests that the more separation between policymaking and economic regulation, the higher the incorporation of regulatory governance principles such as transparency, accountability and participation. Our comparative case studies of the system of self-regulation in The Netherlands, the bipartite negotiation model in Spain, and the Scottish model of independent regulation provides additional empirical evidence to this hypothesis.

Keywords: Accountability; Economic regulation; Governance; Participation; Tariff setting; Transparency

Introduction

The setting of water tariffs epitomizes most of the characteristics that make the water sector unique and controversial. It shows the difficulty of overcoming market failures present in its monopoly status and information asymmetries; it highlights affordability issues endured by consumers; it affects the long-term sustainability and cost recovery levels of the water provider; and it triggers governmental and political interference (\textsc{UNDP}, 2006). Indeed, the price decision has major financial consequences for customers, operators, and public authorities (\textsc{World Bank}, 2006).

For all of these reasons, it is imperative to carefully design how the tariff is set and to give due attention to the inclusion of key stakeholders (\textsc{Muzzini}, 2005; \textsc{Hood & Heald}, 2006). “Water development and management should be based on a participatory approach: involving users, planners and policy makers at all levels” (\textsc{ICWE}, 1992). This second principle from the Dublin Statements is one of many from the international community pleading for consumer inclusiveness. This call is echoed by the scholarly


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community (Jordana & Levi-Faur, 2005). Muller et al. (2008) contend that consumer inclusiveness leads to a pressure force to prevent slippage in performance and political capture. In a study in the electricity sector, Holburn & Spiller (2002) found that consumer involvement led to lower tariffs. Indeed, they concluded that, for those cases with consumer involvement, comparatively lower returns on equity were granted to the electricity providers. Yet Winward & O’Neill (1997) observe concerns from the European Commission that the interests of consumers are not always well represented in economic regulation. Muzzini (2005) shares this concern. She finds that the negotiation power of consumers is lower than that of other stakeholders because the consumers’ voice is generally distributed among interest groups with no clear channels to participate. Some authors have concerned themselves with whether and how consumers are involved in economic regulation. Rouse (2007), for example, is very critical of the model of self-regulation. He suggests that, since consumers are not involved in the process, they are left with very little information so that they are not encouraged to participate and expose their needs.

This paper complements and extends contemporary research into economic regulation by focusing on how three different regulatory regimes succeed in being inclusive of consumers in the water pricing process. In this pursuit, comparative case studies were conducted on a Dutch, a Spanish, and a Scottish setting, each representing a different regulatory regime. The paper is organized as follows: first, relevant background information on the different regulatory regimes is provided. Then we describe our research approach, justifying the selection of the three cases and the research methodology applied. This is followed by a description of how the tariff setting process is organized in each of the three cases. The core of the paper is the analytical part, where we assess how consumer inclusion is addressed in the three regulatory regimes. Finally, the paper concludes with a summary of the key findings as well as suggestions for future research.

**Economic regulation**

Groom et al. (2006) define economic regulation as the rules and regulations that set, monitor, enforce, and change the allowed tariffs and service standards for water providers. Economic regulation serves two objectives: (a) providing all consumers access to services of acceptable quality at the lowest minimum cost; and (b) ensuring the expectations of investors, in terms of rate of return on their investments (Stern & Holder, 1999; Palast et al., 2003; Muzzini, 2005).

Three regimes of economic regulation are available for policy makers. A first possibility is through self-regulation, in which the processes of management, investment, and the determination of the quality of service and tariff setting are carried out by the provider itself. A second approach is economic regulation through contract, or bipartite negotiation. Bipartite negotiations are associated with operation and maintenance, affermage/lease and concessions, which contain their governing rules. The operator is allowed to use the infrastructure to provide the service and the price calculation is stipulated in the contract. With the exception of concession contracts, this approach is focussed on the operational aspect of the water utility, generally reserving the duty of investment for the government. A third system is the so-called independent regulatory regime, which is traditionally associated with the absence of a contract between the parties. In this case, an independent regulator exercises its legal powers in the public interest over the private (UK and Chile) or public (Scotland) providers. An independent regulator calculates the tariff and sets the service standards. Even though these three regimes are frequently found, hybrid forms are also common.
Different authors have argued that the independent regulatory regime is superior to other regimes with respect to consumer involvement (Mueller, 1989; Levy & Spiller, 1996; Hern et al., 2005; Muzzini, 2005; Groom et al., 2006). Their argument is that, by separating policy making from economic regulation, it is likely that more transparency, participation, and accountability mechanisms will be in place. However, this argument is theoretically validated with little empirical support. One of the few relevant empirical studies is an investigation by Hern et al. (2005), using an analytical framework developed by Stern & Holder (1999). The framework distinguishes six main governance principles for economic regulation: clarity of roles and objectives, predictability, open access to information, transparency, accountability, and participation. Each of these governance principles was tested by Hern et al. in a survey of 36 regulatory agencies of different infrastructure sectors (water and sanitation, telecommunication, energy, and gas). Two case studies from the water sector were also included in the research, e.g. the English and Welsh Water Services Regulation Authority (Ofwat) and the Regulatory Office of the Manila Waterworks and Sewerage System, the first being a typical example of an independent regulatory regime, while the latter is an example of bipartite negotiation. The main conclusion from the research was that, in comparison to other sectors, water regulators scored lowest in terms of good regulatory governance. In addition, looking at the two water sector regulators in more detail, the independent regulatory regime of Ofwat did better than the bipartite negotiations in the Philippines. According to the research, the English independent regulatory regime included extensive consultation and communication with consumers throughout the price review process, while in the bipartite negotiation regime in Manila, consumer involvement was limited to the time when the contract was designed.

Muzzini (2005) carried out other research, on consumer participation in infrastructure regulation, that holds relevance for this study. She focused on infrastructure sectors in East Asia and the Pacific Region. She conducted a survey on 45 regulatory agencies from 21 countries, from which 11 were water and sanitation regulators. In establishing her conceptual framework, Muzzini used an adjusted version of the Ladder of citizen participation developed by Arnstein (1969). In this ladder, a higher rung means a higher degree of empowerment of the consumer in the decision-making process. Her conclusion was that there are different gradations of consumer participation in the regulatory process, varying to a significant extent across countries and sectors, and depending on the type of regulatory regime in place. Muzzini found that independent regulators tend to have more open disclosure policies and more formal procedures to deal with consumer complaints than do government regulators. Unfortunately, Muzzini did not differentiate between the sectors in presenting her conclusions, so no specific findings can be extracted for the water sector.

Research design

This research is motivated by our interest to find out the relationship between consumer inclusion in water pricing and the regulatory regimes. The literature review presented suggests that each regulatory regime incorporates different levels of consumer inclusiveness. However, the review also suggests that the available evidence is not sufficiently focussed on the water sector and, particularly, on the water pricing process. Most of the research draws conclusions that are generalised for all infrastructure sectors and for all of the regulatory processes. In addition, it is noted that the empirical basis on which conclusions are drawn is relatively small. The World Bank (2006) shares this observation, by pointing out that very little research has been conducted with respect to the topic of regulatory governance in the water sector. Particularly, it...
urges scholars to conduct empirical research on the subject, as such research would be helpful to promote improvements in this field.

In this research, we make a comparative analysis of three regulatory regimes on the extent to which they are consumer-inclusive in the water pricing process. Our hypotheses are that, with respect to tariff setting, the self-regulatory regime is the least consumer-inclusive, whilst the independent regulatory regime is the most consumer-inclusive. To test these hypotheses, we adopt a comparative case study approach, in which we select three cases to represent the different regulatory regimes. The focus is not to show a statistical generalisation but an analytical generalisation. To measure the level of consumer inclusion in the regulatory framework, we rely on a subset of the analytical framework developed by Stern & Holder (1999). The selection of this subset is motivated by the observation by Hern et al. (2005) that consumer inclusion subsumes three regulatory governance principles, i.e., informing consumers (transparency), resolving consumers’ complaints (accountability) and requesting consumer input (participation). Moreover, this framework dissects each element of governance (transparency, participation, and accountability) into different mechanisms for consumer inclusiveness, which support an analysis of the regulatory frameworks of the three cases. The collection of the data was carried out mainly through interviews with key informants and by the analysis of secondary data.

**Description of the selected cases**

To select relevant cases for the study at hand, a key criterion was the existence of a water pricing process under different regulatory regimes (see Table 1). In this respect, we selected the case of Vitens from The Netherlands to represent a self-regulatory regime, the case of Agbar, in Barcelona, to represent bipartite negotiation, and the case of Scottish Water, in Scotland, to represent an independent regulatory regime.

Vitens is one of the 10 Dutch public limited companies providing drinking water services. It is the largest of them, as a result of a series of acquisitions and mergers. The Dutch system relies on

<table>
<thead>
<tr>
<th>Function</th>
<th>Vitens, The Netherlands (self-regulation regime)</th>
<th>Agbar, Spain (bipartite negotiation)</th>
<th>Scottish Water, Scotland (independent regulation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policymaking</td>
<td>Ministry of Housing, Spatial Planning and Environment (national public authority)</td>
<td>EMA (local public authority and economic regulator)</td>
<td>Ministers (national public authority)</td>
</tr>
<tr>
<td>Economic Regulation</td>
<td>VITENS (public limited company)</td>
<td></td>
<td>Scottish Water (independent economic regulator)</td>
</tr>
<tr>
<td>Service Provision</td>
<td>AGBAR (private provider)</td>
<td></td>
<td>Scottish Water (public statutory body)</td>
</tr>
</tbody>
</table>

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1 The full format of the questionnaire as well as additional detailed information from the interviewees may be obtained from the authors.

2 Key informants included respondents from the regulators, the service providers, public authorities and consumers’ representative bodies.
self-regulation of companies. There is no regulatory body, although the Ministry of Housing, Spatial Planning, and Environment has a definite role in policymaking.

In Barcelona, the private company Agbar has been the authorized drinking water services provider since 1983 under the general regulation of a local governmental body EMA (Entidad Metropolitana de Medio Ambiente). EMA is responsible for policy-making and regulation of water services provision, and is accountable to all the municipalities where they are the responsible body for water services. To date, the relationship between Agbar and EMA has been made by agreements or temporary contracts. There is a small additional role in economic regulation for a regional body called the Prices Commission (Comisión de Precios).

Scottish Water is the national, publicly-owned drinking water services provider for Scotland and is regulated by an independent body called the Water Industry Commission for Scotland (WICS). WICS is accountable to Scottish Ministers and through the Ministers to the Scottish Parliament. This is the same model used in England and Wales, with the particularity that there is only one water utility (Scottish Water) and it is publicly-owned.

Care was taken to have similar characteristics in the three cases, apart from the regulatory regime. All three cases are relatively large companies situated in Western Europe with similar levels of water services provision. In all three cases, the tariff is set on a cost recovery level and tariffs have not undergone drastic increases in the last years, keeping pace with inflation levels. The effort to keep the cases relatively similar was to reduce the risk that possible conclusions on different levels of consumer inclusion were not to be ascribed to the regulatory system, but to some other element. Table 2 provides some key statistics for the three cases.

### The tariff setting processes

For Vitens, the tariff setting process is straightforward, and has minimum consumer inclusion. Each year, the management of the company proposes a tariff to the general shareholders’ meeting based on the

Table 2. Key statistics of the three selected cases for the year 2007.

<table>
<thead>
<tr>
<th></th>
<th>Vitens, The Netherlands (self-regulation)</th>
<th>Agbar, Spain (bipartite negotiation)</th>
<th>Scottish Water, Scotland (independent regulation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population served</td>
<td>5,400,000</td>
<td>1,595,110</td>
<td>5,116,900</td>
</tr>
<tr>
<td>Water supply coverage</td>
<td>100%</td>
<td>100%</td>
<td>94%</td>
</tr>
<tr>
<td>Sanitation coverage</td>
<td>n.a.</td>
<td>100%</td>
<td>91%</td>
</tr>
<tr>
<td>Network efficiency</td>
<td>94%</td>
<td>79.3%</td>
<td>45%</td>
</tr>
<tr>
<td>Annual cost of water per domestic consumer</td>
<td>€162.36&lt;sup&gt;4&lt;/sup&gt;</td>
<td>€180.00</td>
<td>€115,50&lt;sup&gt;5&lt;/sup&gt;</td>
</tr>
<tr>
<td>Collection rate</td>
<td>99%</td>
<td>99%</td>
<td>94%</td>
</tr>
</tbody>
</table>

<sup>1</sup> Information gathered from Vitens (2006) and from Vitens staff consultation.

<sup>2</sup> Information gathered from AGBAR (Department of Institutional Relations) staff consultation.

<sup>3</sup> Data gathered from WICS (2005), as well as direct consultation of staff from WICS.

<sup>4</sup> Calculation based on the average consumption per household multiplied by average household tariff in Vitens in 2007 (123 m³ per year × 1.32 €/m³) specified in Vitens (2006).

<sup>5</sup> Calculation based on the average household cost of water (£169.86) and average currency exchange rate for 2007 (£0.68/£1.00) specified in WICS (2005).
following year’s budget in combination with an estimation of its total volume of water sold. The shareholders of Vitens consist only of public bodies, such as municipalities or provinces. By law, it is drinking water providers are not allowed to have private shareholders. The shareholders’ role is to secure the public interest and, as such, they have the right to approve or reject the company’s tariff proposal.

In Barcelona, the rules for tariff setting are contained in Agreement 2004–2007 (Acuerdo Marco) which has been extended until the year 2011. The negotiations regarding this agreement are exclusively between Agbar and EMA, with no participation at any stage by consumers. In this agreement, the basis for the tariff relies on a formula that integrates four parts: water to be bought (the resource), the costs indexed with the consumer price index, a performance index in which several performance indicators are integrated, and investment activity. The performance index integrates indicators related to water quality, environmental management, quality of service and customer service. Not all the indicators have the same weight in the index, which makes it a mechanism to promote specific objectives over others for the regulator. Annually, an objective is set for each indicator. Depending on the performance achieved, the index varies, thus affecting the tariff level. If needed, Agbar can take the initiative to submit a tariff dossier (expediente de tarifas) to EMA requesting an increase in tariffs. This dossier should contain detailed information that supports the increase in tariff requested. The information that the dossiers should contain is regulated by a by-law. EMA assesses the tariff dossier and elaborates a technical assessment report in which they can either approve the dossier or decline it, asking for additional information from the provider. If the dossier is approved, both documents are sent to the Prices Commission. Decisions at the Prices Commission are reached by democratic vote, where consumers have 2 out of 18 votes. Once the tariff increase has been approved, the company cannot request additional increases for one year, unless unexpected circumstances regulated in the by-law occur. An advantage of the bipartite system is the high level of predictability (at least for the three years of the agreement), which is appreciated by Agbar which finds that the risk of making short-term investments decreases; Agbar’s statement contrasts with the Latin America experience where 75% of water concession contracts (bipartite negotiations) have been renegotiated (Guasch, 2004), thus showing a high level of unpredictability. Agbar have also commented that the system gives more transparency about Agbar’s performance to EMA, given that they have monthly follow-up sessions to monitor the indicators’ evolution.

In Scotland, the economic regulator WICS determines maximum amounts of charges (a price cap) taking into account the ministers’ objectives, the charging principles, the consultation responses, and the economic and financial viability plans of Scottish Water. The price caps are set for four years in the Strategic Review of Charges. Before making a final determination of the charges for the four year period, WICS must send a draft determination to the Scottish Ministers. The draft determination must be published and advertised to invite representations by stakeholders. According to the Water Service Act 2005/29B, WICS must take into account any representation made to the draft determination to develop the final determination of charges. Once the Final Determination of Charges is approved and accepted, it remains in force for five years. Each year, Scottish Water has to send a Charges Scheme to be approved by WICS, as the price cap needs to be adjusted depending on variations in the number of households connected each year. The Scottish process is marked by extensive consultation from the early stages of the tariff setting process. Both the Scottish Government and WICS advertise to receive responses from consumers and integrate them into the decisions-making process. Hence, the consumer representative body WaterWatch,

3 Before the 2010–2015 price review, the regulatory lag was four years.
and a wide range of other stakeholders, is actively involved in consultations on objectives, charging principles, methodology, and drafting the final review of charges.

**Application of regulatory governance principles**

The framework developed by Stern & Holder (1999) guides our analysis of the level of consumer inclusiveness in the setting of the water price for the three cases. In this respect, we pay specific attention to the regulatory principles of transparency, accountability, and participation. The three principles are interrelated: “participation in the regulatory process may help the regulator to make better decisions, while transparency and accountability will increase the pressure on him to do so” (Stern & Holder, 1999). Furthermore, the better informed consumers are, the better their understanding of the factors that influence the regulator’s decisions, and the more willing they will be to participate. Table 3 summarizes the results of a more elaborate analysis for each of the three governance principles. Note that the assignment of codes (L = Lowest, M = Middle or H = Highest) to each element of governance is intended only as a comparative measure against the other case studies. For example, Table 3 shows that for the first element of transparency, while the tariff setting process is legally regulated in Barcelona (M) and Scotland (in great

Table 3. Comparative fulfilment of governance principles for consumer inclusiveness.

<table>
<thead>
<tr>
<th>Transparency</th>
<th>Vitens, The Netherlands (self-regulation)</th>
<th>Agbar, Spain (bipartite negotiation)</th>
<th>Scottish Water, Scotland (independent regulation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tariff setting process is legally regulated</td>
<td>L</td>
<td>M</td>
<td>H</td>
</tr>
<tr>
<td>Publication of regulatory documents on tariff setting is legally obliged</td>
<td>H</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>Regulatory documents on tariff setting are published</td>
<td>M</td>
<td>M</td>
<td>H</td>
</tr>
<tr>
<td>Publication of tariff decision is legally obliged</td>
<td>H</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>Tariff decision is published</td>
<td>H</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>Publication of reasoning behind tariff decision is legally obliged</td>
<td>M</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>Reasoning behind tariff decision is published</td>
<td>L</td>
<td>L</td>
<td>H</td>
</tr>
<tr>
<td>Consumers have a right to access the tariff related documents on demand</td>
<td>L</td>
<td>H</td>
<td>H</td>
</tr>
</tbody>
</table>

**Participation**

| Legally required that consumers be involved in establishing the procedure to set the tariff | L | L | H |
| Legally required that consumers be involved in setting the tariff | L | M | H |
| Consultation processes on tariff setting are public | L | L | H |

**Accountability**

| Formal mechanism exists for consumers to challenge tariff level | L | H | L |
| Facility exists under primary law for a judicial review | L | H | L |
| The tariff setting entity is accountable to Parliament | L | M | H |
| The tariff setting entity can be dismissed for failing to fulfil its duties | L | M | H |

Legend: L = Lowest, M = Middle, H = Highest, compared to the other two cases.
detail) (H), it is not legally regulated in The Netherlands (L). On the other hand, Table 3 shows that in all of the cases the regulatory documents on tariff setting are published (the three cases score the same: H).

**Transparency**

Transparency requires access to information. A transparent regulatory process would reflect that the parties who are not necessarily involved in the decision-making process are able to access information that allows them to form options and to develop a criterion to assess how well managed the service is for which they are paying (Naurin & Curie, 2007). In this respect, the system of self-regulation in The Netherlands is clearly relatively weak. The Scottish case is found relatively to be the strongest, since most of the mechanisms for consumer inclusion were found.

Although in all three cases relevant legislation was found, the specifics of the legislation differed. In the Dutch case, the setting of the tariff is arranged for in the Drinking Water Act, dating from 1959. However, in this law no specifics are included on how the tariff is to be set. Essentially, the Act only establishes the self-regulatory system and delegates the responsibility to the providers. In Barcelona, there are several legal instruments that regulate the tariff, one of them being Decree 149/1988, or the *Reglamento General del Servicio Metropolitano de Abastecimiento Domiciliario de Agua en el ámbito Metropolitano* (2003). However, no clear methodology for the calculation of the tariff is defined. In Scotland, there are two main acts: the Water Industry (Scotland) Act 2002 and the Water Services etc (Scotland) Act 2005. Both acts determine the actors and stages of the review of charges process. Additionally, in the Strategic Review of Charges Process, WICS has elaborated a detailed document in which the methodology for revising the charges is explained. The Scottish case is also slightly more elaborative regarding the publishing of documents that regulate the tariff setting process. In the cases of Vitens and Agbar, the key documents on the tariff setting process are the companies’ by-laws. The by-laws of the Dutch water companies are gazetted (Blokland et al., 1999), and the by-laws of Agbar are published in an official diary of the region (Catalonia). In addition, the decrees and relevant legislation are both accessible through the EMA and Agbar websites; however, the EMA–AGBAR agreement that regulates the tariff revision process could not be found on the EMA website. In Scotland, all major regulatory documents are published and accessible easily on the websites belonging to the Office of Public Sector Information (OPSI) and to WICS.

In all three cases, once the tariff is decided, it is legally required to be published. However, in none of the cases is the publication of the reasons sustaining the decision compulsory. Hence, neither in the case of Vitens nor for Agbar is the reasoning made public. Only in the case of Scottish Water are the views related to objectives, charging principles and methodology for the tariff setting process published before the tariff has been set. For example, in the 2006–2010 Strategic Review of Charges, WICS published the Final Determination on the charge limits, detailed documents outlining WICS’ conclusions, and responses from the consultation process on the Draft Determination.

Apart from the documents that are published, consumers may demand to access other information. If so, consumers will have a hard time in The Netherlands, as they will be dependent on the willingness of the company to share this information. The Dutch water provider is in this respect no different from any other private company operating under private law. In Barcelona, Act 30/1992 allows any consumer who shows interest access to any document regarding the public service management if the dossier is already closed. This option only enables consumers to act over *faits accomplis*. At the Prices Commission, any interested person may access (at the premises of the Commission) the information on which the decision to authorize the tariff was based. In Scotland, there is a Freedom of Information (Scotland) Act 2002 which gives a
general right of access to all types of recorded information held by public authorities. It is made explicit that some information might not be disclosed so as not to breach the law of confidentiality or seriously prejudice the commercial interests of any person or organization. Note that the concept of commercial interest may be extended by a broad interpretation to most of the pricing process, and that the situation may render void the rule of transparency. In a similar way to the Spanish case, information related to the tariff setting process is not explicit.

**Participation**

Participation occurs when consumers (or other stakeholders) contribute to the regulatory process with their views, and they are then accepted or rejected with a clear explanation. Some of the forms of participation include formal consultation exercises, formal or informal hearings and surveys of customer views and priorities. Clearly, with respect to the level of participation of consumers in the tariff setting process, the Dutch case again scores relatively low. The Spanish case is slightly better although the participation of consumers through votes in the Pricing Commission is not very strong (just 2 votes out of 18). The strongest presence of participative mechanisms is found in Scotland, due to its extensive obligatory system of public consultations.

Neither the Dutch nor the Spanish case show any formal mechanism to promote participation of consumers in the tariff negotiation process before the tariff is set. In Barcelona, the EMA and Agbar are the two parties that negotiate and arrive at a figure. During these negotiations, there are no formal consultation processes. The participation of consumers is limited to the authorisation of the proposed tariff. At those stages, two members of the Prices Commission who are consumer representatives are asked to vote for the proposed tariff. However, these two members were, in the interview, rather sceptical about their level of influence. According to them, they receive the documentation approximately a week before the Commission is summoned. In session, they have 2 out of 18 votes, leaving them little option to make a difference. The Spanish EMA affirms that their decisions internalize the consumers’ interests. They comment that each time new tariffs are going to be approved they informally summon the neighbours’ associations of Catalonia (Confederación de Asociaciones de Vecinos de Cataluña) to inform and listen to them. It is a consultation process not formally regulated. In contrast, in Scotland extensive consultation processes are established from early stages. There are consultation processes launched by the government and by WICS, both related directly with the review of charges. WICS sends a draft determination of the charges to the consumer representative body WaterWatch to invite a response with regards to the document. During the interviews, it was noted that several respondents still found WaterWatch too young an organisation to have a strong influence. According to the Water Services etc (Scotland) Act 2005 section 29B, WICS is legally required to take into account any responses; and all the copies of the responses received from the consultation exercises (except those where the individual or organisation requested confidentiality) are placed in the Scottish Government library. The documents derived from the consultation processes for the methodology of the revision of charges, present a section in which the comments from the responses received and reasons why the final decisions were made are specified.

**Accountability**

Accountability involves “paying the price for one’s actions” (Naurin & Curie, 2007). In the context of the regulatory process, it requires that the regulator’s decision can be challenged and that there are
accessible mechanisms to challenge these decisions. In this respect, the Dutch case of self-regulation scores lowest compared to the other two. However, the case of bipartite negotiation from Barcelona and the case of independent regulation from Scotland seem to be almost equal with respect to how accountable they are.

Neither in The Netherlands nor in Scotland are there ways for consumers to appeal once the tariff is set. Although theoretically possible, a Scottish or Dutch consumer may pursue a judicial review; in reality, such a review is difficult to obtain. The consumer has to prove that they have a title and interest to be able to sue Scottish Water or Vitens. They then only get a judicial review if the following circumstances have happened in the price setting: a breach of duty, an excess of powers, a formal irregularity or something unreasonable and irrational having been done (Common Law, built on cases). On top of the legal technicalities, the cost of pursuing such remedy can be high. In contrast, in Barcelona, if someone wants to appeal the authorised tariff, s/he needs only present an administrative complaint within one month to the regional government department from which the Prices Commission depends, hierarchically. If the answer from this regional department is not satisfactory for the consumer, s/he can make a second appeal that would lead to judicial review. However, despite the existence of these mechanisms, we learned from our interviews that consumers’ representative bodies have so far made no appeals.

In Barcelona, the regulator EMA is not accountable to parliament and cannot be dismissed for failing to fulfil its duties, given that the regulatory functions are developed by the local government elected by the population. In Scotland, parliamentary control is stronger, and it may require WICS to attend its proceedings to give evidence or to produce documents concerning water pricing. WICS can be dissolved on any given date by the Scottish Ministers.

Discussion

During research design, implementation and reporting we have identified a number of issues that we left unresolved.

The first issue refers to how the regulatory regime is embedded in the history and context of a country. Di Maggio & Powel (1983) suggest that different regimes of economic regulation are the result of fundamental principles derived from the way societies are organised. They argue that the role played by each actor in the processes by which the utility industries are managed and governed is a result of historical attitudes. According to these authors, those attitudes are internalised and reflected in the role that consumer groups and other civil groups are given in the regulatory process. It would therefore be valuable to study comparatively, the degree of consumer inclusiveness in cases within countries with similar characteristics.

Concerning the analytical framework and, more specifically, the sources of information used, we recommend that, in addition to the assessment of formal mechanisms, informal mechanisms should be taken into consideration given that they can also influence the regulatory process. For example, in Barcelona, changes in two aspects related to the tariff (bill and tariff structure) were provoked through informal mechanisms of participation. Moreover, apart from the formal or informal communication of consumers with the regulator, information that the provider gets from consumers could also be considered as an input in the regulatory process.

A further step to complement and grant more relevancy to this line of research would be to analyse the effectiveness of consumer inclusiveness mechanisms in the regulatory systems. For that type of analysis,
frameworks such as the *Ladder of citizen participation* by Arnstein (1969), or the later comprehensive version by Franceys & Gerlach (2005), could be supportive. The effectiveness analysis of different consumer inclusive mechanisms is necessary, given that some of them might be used to distract the attention of stakeholders to discuss trivial issues, thus rendering participation useless.

**Conclusion**

In this paper, we have explored the existence of mechanisms that foster transparency, participation, and accountability in price regulation of water services in The Netherlands, Barcelona, and Scotland. Each of the cases represents a different regulatory regime, namely self-regulation, bipartite negotiation, and independent regulation, respectively.

With regard to transparency and participation, the independent regulatory regime we researched is clearly better attuned, compared to the bipartite negotiation and self-regulation regimes. In Scotland, the tariff setting process is regulated in detail, and the justifications behind decisions are published and accessible online. Scotland also has a legal instrument that regulates access to information related to public services by users and presents extensive formal consultation processes with different stakeholders, while in Barcelona there are no formal consultation processes before the approval of the tariff. Even though, in Barcelona, two members of consumers associations participate at a late stage in the authorisation of the tariff, we do not consider it as an effective mechanism of participation given that they only vote to approve or dismiss the tariff (after the decision has already been made) and their vote weight is diluted by the other 16 participants in the Prices Commission. In the case of Barcelona, the process is regulated and decisions are published, but not their justifications. Moreover, published information is not easily accessible. Although in Spain access to government information is regulated by different laws, there is no specific piece of legislation for water services information.

The results for accountability are mixed, although again it is clear that the system of self-regulation as applied in The Netherlands scores the lowest. In challenging regulatory decisions, Barcelona’s consumers can submit administrative complaints and have access to judicial review. In Scotland, despite having access to judicial review once the tariff decision is made, the grounds and procedures create high transaction costs that impose a barrier of entry for consumers. In Barcelona, the regulator (as an elected authority) cannot be dismissed when performing badly, whilst in Scotland the regulator can be dissolved. In Scotland, the regulator is accountable to Ministers and, through them, to the Parliament; in Barcelona the regulator is accountable to the local authorities that the EMA represents (as local government and regulator).

In conclusion, our research provides additional evidence to support the views of Hern *et al.* (2005), World Bank (2006) and Groom *et al.* (2006) that a higher separation of policy-making from regulation provides more mechanisms to promote transparency and participation in the tariff process.

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