

NBER WORKING PAPER SERIES

TRANSACTION COST REGULATION

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Working Paper 16735

<http://www.nber.org/papers/w16735>

NATIONAL BUREAU OF ECONOMIC RESEARCH

1050 Massachusetts Avenue

Cambridge, MA 02138

January 2011

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NBER Working Paper No. 16735  
January 2011  
JEL No. D02,D73,L14,L51

### **ABSTRACT**

This paper discusses the fundamental underpinnings and some implications of transaction cost regulation (TCR), a framework to analyze the interaction between governments and investors fundamentally, but not exclusively, in utility industries. TCR sees regulation as the governance structure of these interactions, and thus, as in standard transaction cost economics, it places emphasis in understanding the nature of the hazards inherent to these interactions. The emphasis on transactional hazards requires a microanalytical perspective, where performance assessment is undertaken within the realm of possible institutional alternative. In that sense, politics becomes fundamental to understanding regulation as the governance of public / private interactions. The paper discusses two fundamental hazards and their organizational implications: governmental and third party opportunism. Both interact to make regulatory processes and outcomes more rigid, formalistic, and prone to conflict than envisioned by relational contracting.

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Transaction cost regulation (TCR) consists of the study of the governance features of the interaction between governments and investors fundamentally,<sup>1</sup> but not exclusively, in utilities sectors. As in standard transaction cost economics, the nature of contracting hazards is what determines the fundamental features of the governance of these interactions (e.g. Williamson 1979). Regulation, and regulatory contracts, which are the forms that the governance of such interactions take, are then to be understood as coming to grips with the inherent hazards of these interactions.

Emphasizing regulation as the governance structure of these interactions, and understanding the organizational impact of their inherent contractual hazards, differentiates TCR from other approaches to regulation. In particular, the emphasis on contractual hazards requires assessing real behavior, by real people in real environments within real institutions.<sup>2</sup> While understanding real behavior also implies analyzing rent seeking and the role of distributional concerns, these manifest themselves in the interaction of sector hazards with the institutional environment within which they operate. In that sense, although politics is normally not necessary to understand private contracting, it becomes fundamental to understanding regulation as the governance of public / private interactions.<sup>3</sup> As emphasized first by Coase (1964) and subsequently by Williamson (1979), the analysis of regulation must be done within the proper institutional comparison, and with a heavy micro-analytic dose. Thus, the supposed inefficiency of

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<sup>1</sup> Observe that I did not say “transactions” but rather interactions, as a transaction only occurs if a regulatory action actually takes place, which, TCE would naturally require to be an endogenous result of the government / investor interaction.

<sup>2</sup> As a consequence, TCR rejects the notion of “optimal” regulation.

<sup>3</sup> For an institutional theory of public contracts, see Spiller (2009).

regulatory contracts, and of regulatory outcomes, must be assessed in reference to all relevant alternatives.<sup>4</sup>

### **I. Williamson's Incipient TCR**

In his path-breaking 1976 BJE,<sup>5</sup> Williamson sketched the fundamental tenets of a TCR approach.<sup>6</sup> Williamson (1976) analyzes in detail the alleged advantages of franchise bidding in CATV service regulation, by emphasizing the contractual details involved in undertaking a franchise bidding as well as a more standard regulatory process. He starts, following Coase (1964), by emphasizing the need to perform real institutional comparisons:

“Merely to show that regulation is flawed, however, does not establish that regulation is an inferior mode of organizing economic activity....

Secondly, before regulation is supplanted, there is an obligation to assess the properties of the proposed alternative – not only in general, but also specifically with respect to the activity in question. If the proposed mode is flawed in similar or different respects, the purported advantages of shifting out of regulation may be illusory.”<sup>7</sup>

Using the incipient TCE approach, Williamson (1976, p. 75) then highlights seven features relevant to evaluating alternative modes of organizing natural monopoly supply

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<sup>4</sup> See also Williamson (1996).

<sup>5</sup> See, Williamson (1976).

<sup>6</sup> A parallel, although different, application of TCE to regulation can be found in Goldberg (1976). For an application to comparative regulatory governance, see Spiller (1993), later developed in Levy ad Spiller (1994).

<sup>7</sup> See, Williamson (1976, p 73).

(with emphasis on comparing franchise bidding to other forms of regulation – including no regulation):

“(1) the costs of ascertaining and aggregating consumer preferences through direct solicitation; (2) the efficacy of scalar bidding; (3) the degree to which technology is well developed; (4) demand uncertainty; (5) the degree to which incumbent suppliers acquire idiosyncratic skills; (6) the extent to which specialized, long-lived equipment is involved; and (7) the susceptibility of the political process to opportunistic representations and the differential proclivity, among modes, to make them.”

We can reclassify these seven considerations into four that are basically transaction cost considerations (items 3- technology, 4- demand uncertainty, 5 & 6- specific investments /skills) and three that arise from political considerations (1 – preference aggregation, 2– efficacy of scalar bidding and 3- political opportunism). Williamson (1976), then, set out the two fundamental pillars of TCR – transaction costs economics, and positive political theory. TCE’s emphasis on identifying the transaction hazards as the basis for understanding governance, and the consequent discriminating alignment of governance and underlying risks; and positive political theory, which by highlighting the political dynamics associated to these interactions, helps to elucidate the full extent of the hazards associated with these interactions.

## **II. What Characterizes Utilities?**

Elsewhere I have defined utilities as those sectors having three fundamental features:<sup>8</sup> first, their products are consumed widely; second they exhibit important economies of scale and scope at the relevant levels of demand; and finally, that their investments are characterized by a high level of physical specificity (i.e., have a high component of sunk investments).

Consider, for example, a water distribution company. Its assets have very little value in alternative uses (it is very expensive to dig out water mains, meters, etc); network externalities and economies of density imply that it may not be economical to have multiple water networks deployed along the same street or even neighborhoods; and finally, its product is consumed by a large proportion of the city's population. Compare this situation to that of another industry characterized by large sunk investments: steel. While steel mills have very little value in alternative uses, the economies of scale and scope are trivial compared to the size of the market, and furthermore, while everybody indirectly consume steel products, very few individuals in society pay any attention to the price of steel. Thus, it is not simply specific investments that characterize utilities.

Nor is it just economies of scale. Consider, newspapers. It is quite clear that there are large economies of scale and scope in the operation of city-newspapers. The increase in the speed of communications and the increased use of computer design has drastically increased the extent of economies of scale in the sector, while the diffusion of the internet has equally drastically reduced readership. While readers may still be a relatively

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<sup>8</sup> See Spiller (1995).

important portion of the population (at least of the voting population), newspapers are not utilities. Although there may be substantial amount of sector specific human capital (reporters' contacts with local politicians may be specific to the locality), the technology is increasingly generic. Printing presses may print multiple newspapers, and are movable, while the remaining physical assets are highly generic (computers, furniture, general office buildings).

Thus, what separates utilities from the rest of the economy is the combination of three features: specific investments, economies of scale and scope and widespread domestic consumption. These features are at the core of the contracting problems that have traditionally marred government / utility investors' relations.<sup>9</sup> In turn, they make the pricing of utilities inherently political. I posit that in the presence of highly specific assets, the fundamental hazards in government / utility investor interactions arise from two types of opportunism: governmental and third-party opportunism.<sup>10</sup>

### **III. Governmental Opportunism**

Governmental opportunism consists of the ability of governments to change the rules of the game via the standard use of governmental powers to extract the quasi-rents of utility investors.<sup>11</sup> Changes in the rules of the game can be done in multiple, subtle and not so subtle ways. Governments may issue legislation making illegal a particular type of conduct, contract or pricing, even one it may have originally encouraged or even formally agreed to. Consider the history of San Francisco's hydrant rates in the late 1880s as

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<sup>9</sup> See, among others, Williamson (1976); Goldberg (1976), Williamson (1988); Levy and Spiller (1994) and Spiller (1993).

<sup>10</sup> This does not imply that utility operators/investors may not behave opportunistically (such as withholding information), but such opportunism is of the "standard" nature, discussed at length by the literature. I will discuss the implications of private opportunism later.

<sup>11</sup> See Spiller (1996), Levy and Spiller (1994).

recently discussed in Masten (2009).<sup>12</sup> “To overcome the water company resistance to new investment ..., the San Francisco Board of Supervisors agreed to payments of \$2.50 per hydrant per month in 1882, increased to \$5.00 in 1895, “in return for the company making investments in system extension and pipe enlargement for fire protection”.... Beginning in 1898, however, following investments by the company that achieved an increase in per-capita consumption of more than a third between 1880 and 1890 despite population growth of almost 30%, the city undertook a series of rate reductions - characterized as a “breach of trust” by the company- cut[ting] hydrant payments...from the previous level of \$5.00 per hydrant per month to a rate amounting [to] \$1.75 per hydrant per month..., despite previous implicit agreements with Spring Valley to maintain existing charges in return for water company investments in system improvements....”

Governmental opportunism, however, does not have to be so drastic as a law or Decree, or a municipal decision, cancelling or changing the nature of contracts, pricing or allowable practices, but can be achieved via the subtle works of administrative process. The imposition of fines on a public utility for alleged quality deficiencies, or a regulatory decision denying a tariff increase could just do the trick. What may seem as innocuous acts of regulatory supervision, may actually be nothing else but governmental opportunism, attempting to extract part of the utility’s quasi-rents. The recent case of Compañía de Aguas del Aconquija is an interesting example. A water and sewage services concession granted by the Province of Tucumán, Argentina, in 1995 and terminated by the Province just two years later. The process that led to the contract

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<sup>12</sup> Masten (2009).



termination, and described in unusual detail by the Arbitration Panel in its Award,<sup>13</sup> is a textbook, and probably an extreme, example of what I call governmental opportunism, whereby a government uses its regulatory and executive powers to achieve a tariff reduction not allowed by the regulatory framework. In fact, the *Aguas del Aconquija* Award shows the multiplicity of instruments governments have at their disposal to attempt to extract a utility's quasi-rents. In this case, the Provincial Government seems to have used all its formal powers - regulatory decisions, legislative acts, executive decrees, attorney general recommendations, even judicial decisions— and informal powers – press releases, Ombudsman's letters, public announcements, and the like-, to force the company's hand.<sup>14</sup>

Investors facing the risk of governmental opportunism will either not invest, or demand up-front compensation for that risk. Either strategy, however, as the case of *Aguas del Aconquija* shows, may not alleviate the risk, but rather may, at the end, exacerbate it.

Government opportunism affects not only private investors but public operators as well. Since the government has direct control over publicly owned companies, Savedoff and Spiller<sup>15</sup> explain how the threat of governmental opportunism against publicly owned companies may lead those companies to protect their cash flows against such hazards by undertaking actions,<sup>16</sup> such as hiring too many permanent or transitory employees, granting excessive benefits, and the like, which translate into low efficiency and quality levels.

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<sup>13</sup> See, Award – “In the Arbitration between Compañía de Aguas del Aconquija S.A. and Vivendi Universal S.A. Claimants v. Argentine Republic, Respondent, Case No. ARB/97/3” issued on 20 August 2007.

<sup>14</sup> At the end, the company attempted to rescind the contract due to Governmental breach, at which point the Province terminated the concession. The service remained in the company's hand for another year, at which point it was taken over by ENHOSA, a federal water service entity. See, Award, at page 112.

<sup>15</sup> Savedoff and Spiller (1999).

<sup>16</sup> Savedoff and Spiller (1999, p. 17) generically describe this practice as “cash hiding.”

It is the existence of sunk investments that makes governmental opportunism a fundamental hazard in government/utility investor interactions. First, the fact that a large component of a utility's investments is sunk implies that once the investment is undertaken the operator will be willing to continue operating as long as operating revenues exceed operating costs. Since operating costs do not include a return on investments (but only on the alternative value of these assets), the operating company will be willing to operate even if prices are below total average costs. Second, the existence of strong economies of scale and scope implies that there will be few suppliers in each locality. Thus, the whiff of monopoly will always surround utility operations. And finally, because utility services tend to be massively consumed, politicians and interest groups will care about the level of utility pricing.

Sunk investments, then, provide politicians with the opportunity to behave opportunistically vis-à-vis the investing company. In other words, sunk investments expose the utility to the risk of potential expropriation, which may be indirect and undertaken by subtle means.

As in private contracting, if specific assets are at stake, safeguards are needed for investments to be forthcoming in an efficient manner or at reasonable prices. In the absence of safeguards investment inefficiencies may arise in several fronts. First, underinvestment will be the norm. Second, investments may take place exclusively in segments whose market return is very high and where the payback period is relatively short.<sup>17</sup> Third, maintenance expenditures may be kept to the minimum, thus degrading

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<sup>17</sup> An alternative way of reducing the specificity of the investment is by customers undertaking the financing of the sunk assets. For example, SAGUAPAC, the water public service cooperative of Santa Cruz, Bolivia, required commitment of customer financing prior to undertaking an expansion plan. For a

quality. Fourth, investment may be undertaken with technologies that have a lower degree of specificity, even at the cost of, again, degrading quality.<sup>18</sup> Fifth, up-front rents may be achieved by very high prices which although may provide incentives for some investment, may be politically unsustainable.<sup>19</sup>

Governance schemes that do not limit the potential for governmental opportunism, then, create strong inefficiencies and poor sector performance.<sup>20</sup> Poor quality, lack of investments and high prices lead, eventually, to more conflicts between the operator and the government. Unless those are resolved, popular support for efficient pricing will fade, as higher prices will not translate into improved service. In those environments, government ownership may be the only feasible mode.<sup>21</sup>

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discussion of Saguapac's strategy, see Walton (2003). Similarly, Chile's Electricity Services General Law of 1982 allows the utilities to require that customers requesting service finance, via a reimbursable charge, any required expansion cost, or that they undertake the investment directly. See Arts. 75 and 76. (<http://www.sec.cl/OpenDocs/data/13/DFL%201%20Electricidad.doc>)

<sup>18</sup> In this sense it is not surprising that private telecommunications operators that rushed to develop the telecommunications sector in Easter European and African countries, moved first and foremost into cellular rather than fixed link networks. While cellular has a higher long run cost than fixed link, and on some quality dimensions is also an inferior product, the magnitude of investment in specific assets is much smaller than in fixed link networks. Furthermore, a large portion of the specific investments in cellular telephony are undertaken by the customers themselves (who purchase the handsets). See also, Waverman et al (nd).

<sup>19</sup> The privatization of Argentina's telecommunications companies is particularly illuminating. Prior to the privatization, telephone prices were raised well beyond international levels. It is not surprising, that following the privatization the government reneged on aspects of the license, like its price indexation as ways to limit the quasi-rents of the investors. The initial high prices, though, allowed the companies to remain profitable, even following government's deviation from the license provisions. See Levy and Spiller (1996).

<sup>20</sup> While the link between aggregate institutional features of a country and general economic growth is by now a growth industry, few have taken the step of linking actual country's general and regulatory institutions and explored the impact on sector performance. For such examples, see Henisz and Zelner (2001) for an application to investment in telecommunications, and Henisz (2002) for an application to railways, telecommunications and electricity generation across 129 countries over the period 1815-1998.

<sup>21</sup> For an analysis to the water sector, see Savedoff and Spiller (1999). For an alternative view, see Masten (2009).

*III.1 Regulation as a Response to Governmental Opportunism*

Facing the threat of governmental opportunism, utility investors would require particular safeguards to invest. That is, the development of institutional arrangements that will limit the government's ability to behave opportunistically once the utility undertook its investment program. Such institutional arrangements are nothing but the design of a regulatory framework. They will have to stipulate price setting and conflict resolution procedures (arbitration or judicial), investment policies, quality controls and so on and so forth, that are both credible, in the sense that the Government will not be able to by-pass them easily, and at the same time substantially limit the government discretionary interpretation of the same. In other words, regulatory procedures, if credible, must restrain the government from opportunistically expropriating the utilities' sunk investments. This, however, does not mean that the utility has to receive assurances of a rate of return nature, or that it has to receive exclusive licenses. In some countries, however, such assurances may be the only way to limit the government's discretionary powers.

*III.2 Sources of Regulatory Commitment – Positive Political Theory*

The limits to governmental opportunism are, however, institutional.<sup>22</sup> The potential for the opportunistic use of legislative powers depends, to a large extent, on the control the executive may exercise over the legislature. Thus, a fragmented polity may provide more assurances to investors than a highly centralized government. Similarly, a judiciary with a tradition of independence may put some limits on opportunistic governmental behavior. Concession contracts, as long as they are upheld by local courts, may also provide a level

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<sup>22</sup> Spiller (1996a) and Spiller (1996b).

of commitment against opportunistic behavior. It is, thus, not surprising that the UK, a country characterized by a centralized government but with a long tradition of judicial independence, would have adopted a regulatory system based on concession contracts, while the regulatory structure in the US, a country characterized by fragmented government, is based on judicial review of administrative procedures (Spiller 1996a).

Political and social institutions not only affect the ability to restrain administrative action, but also have an independent impact on the type of regulation that can be implemented, and hence on the appropriate balance between commitment and flexibility. For example, regulatory rules involving relatively high power incentive rules (e.g., price caps, incentive schemes, use of competition) usually require granting substantial discretion to the regulators. Thus, unless the country's institutions allow for the separation of arbitrariness from useful regulatory discretion, systems that grant too much administrative discretion may not generate the high levels of investment and welfare expected from private utility investment.<sup>23</sup> Conversely, some countries might have regulatory regimes that drastically limit the scope of regulatory flexibility.<sup>24</sup> Although such regulatory governance schemes may look inefficient, they may in fact fit the institutional endowments of the countries in question, and may provide substantial incentives for investment.<sup>25</sup>

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<sup>23</sup> See Levy and Spiller (1996) for an overall discussion of how various countries adjusted their regulatory structure to their institutional environments so as to cope with potential exercise of governmental opportunism.

<sup>24</sup> Spiller and Sampson (1996) make the case that monopoly and rate of return regulation in Jamaica telecommunications in the 1990s provided such incentives, at the cost of regulatory and technological flexibility.

<sup>25</sup> The impact of institutional arrangements on utility investment has received some attention during the last 10 years. See footnote 20 *supra*. Cross country analyses, however, have substantial difficulties in overcoming fundamental endogeneity concerns of the type discussed in Hamilton and Nickerson (2003).

### *III.3 Contrasting Firm with Governmental Opportunism*

At the core of most theories of regulation is a normative or passive view of the regulatory process. For some, regulation is perceived as an arena where conflicting private interests are accommodated, while in others regulatory rules are optimally designed to placate the firm's profit motive subject to informational constraints. The former approaches political actors as essentially passive, while the latter represents political actors as benevolent, or at best as functionally utilitarian, in having objective functions reflecting the welfare of multiple constituencies. TCR sees political actors differently. They are not different from any other economic agents, they are neither passive nor benevolent. As Williamson (1975, p.26) say, they are opportunistic – willing to lie and deceive and to pursue “self-interest with guile.”

There is, though, a fundamental difference between governmental opportunism and the opportunism or exercise of market power that is perceived, by most neoclassical economists, to be at the root of the regulatory problem. If what drives regulatory policy-making is market power, then that could be managed by the application of general antitrust (and common law) provisions.<sup>26</sup> There would be no need for industry specific regulation. In the US regulatory agencies were created more than 100 years ago, at times when the pressing regulatory issues were investment incentives in the presence of strong pressure to limit prices.<sup>27</sup> Thus, although on a day-to-day regulators' main concerns are indeed firm opportunism and the restraint of market power, rather than thinking how to

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<sup>26</sup> This light-handed regulation approach was implemented in New Zealand following the reforms of the mid 1980s. See Evans et al (1996).

<sup>27</sup> Troesken (1996) and (1997) has argued that the early 1900 movement away from municipal regulation towards state regulation was a way to reduce the incentives to behave opportunistically by the municipal regulators. See also Troesken and Geddes (2003) analysis of the municipalization of water works in the late 1800s early 1900s in the US. See Masten (2009) for a differing view.

restrain themselves from expropriating the firms' quasi-rents, the origins of regulatory governance is rooted in providing investment incentives by restraining governmental opportunism.

Although in some environments regulatory governance may have also been designed to facilitate private capture, such design exposes the regulatory process to *political capture* following a turn of the political wheel.<sup>28</sup> Private investors fearing such events will be cautious on long-term investments, and more interested in short term gains. Thus, institutional and regulatory designs that limit the potential for governmental opportunism may not only facilitate investment, but may also serve to credibly enhance the political restraint over operators' opportunism.

#### **IV. Third Party Opportunism<sup>29</sup>**

The essence of public policy, of which utility regulation is one, is that it relies on the state's monopoly to use peoples' monies without their expressed consent. Public utility regulation is not an exception, as it involves, directly or indirectly, the use of the state's monopoly over public funds.<sup>30</sup> Reasonably working societies, then, will naturally develop ways for public policy to be subject to public scrutiny so as to avoid corruption and graft.<sup>31</sup> Public contract scrutiny, for example, is normally undertaken by designated agencies in charge of contract supervision. In the United States, while individual

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<sup>28</sup> See, Esfahani (1996), pp: 145-201 for a fascinating description of the regulatory process in the Philippines, where political alignment between the utilities' shareholders and the government seems to have been determinative of the shareholders' incentives to invest.

<sup>29</sup> This discussion follows Spiller (2009).

<sup>30</sup> Utility regulation can be construed as an implicit system of taxes and subsidies, and hence, can be thought as using public funds, even if 100% of the utility revenues come from customers.

<sup>31</sup> Purely private contracts, on the other hand, are normally protected against public scrutiny, often requiring a judicial act to make a private contract subject to public scrutiny. Some private contracts, however, are public for obvious reasons. The registration of land ownership requires the registration of real estate transactions, making some aspects of real estate transactions then potentially open to public scrutiny.

departments have agencies in charge of auditing their procurement, the Office of Management and Budget, the Government Accountability Office, and the Congressional Budget Office routinely examine the procurement performance of government agencies and of the auditing agencies themselves.<sup>32</sup>

Regulatory agencies in the United States, however, are seldom supervised by another agency.<sup>33</sup> Instead, they tend to be supervised directly by congressional committees whose work is influenced by interested third parties.<sup>34</sup> In fact, in their seminal article McCubbins and Schwartz (1984) argue that politicians can manage the bureaucracy via “fire alarms,” whereby interest groups (interested third parties) will “pull the alarm” when agencies stray from the politician’s preferred policy path. They further make the point that “*a predominantly fire-alarm oversight policy is likely to be more effective ... than a predominantly police-patrol policy.*”<sup>35</sup> Thus, third party supervision is fundamental in a democratic society.

A fundamental feature of interest groups as monitors, though, is that they are interested. In other words, they are biased. They provide information only when it is to their advantage. That is, the third party (or parties) may behave opportunistically. As it relates to government / utility interactions, interested third parties may have incentives to

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<sup>32</sup> For example, the Defense Contract Audit Agency, formed in 1965, is in charge of performing audits to all the US Defense Department contracts. The performance of the DCAA, in turn, is supervised by the OMB, while the GOA and the CBO routinely review specific programs of the Department of Defense. See, for example, CBO, “Replacing and Repairing Equipment Used in Iraq and Afghanistan: The Army’s Reset Program,” Pub. No. 2809, September 2007; see also, GAO, *Defense Acquisitions: Department of Defense Actions on Program Manager Empowerment and Accountability*, November 9, 2007.

<sup>33</sup> In the UK, however, the regulatory process involves the use of the competition commission. See Spiller and Vogelsang (1997)

<sup>34</sup> See, McCubbins and Schwartz (1984); McCubbins, Noll and Weingast (1987); McCubbins, Noll and Weingast (1989). deFigueiredo, Spiller and Urbiztondo (1999) also show that politicians prefer not only a proliferation of interested interest groups monitoring agencies, but also prefer them to come from divergent perspectives.

<sup>35</sup> McCubbins and Schwartz (1984: 171).



challenge, when by such action they benefit, the “probity” of the interaction, thereby affecting directly the perceived probity of the public agent in charge. Such incentives may exist when third parties compete with the public agent in the political market.

Benefits, however, may arise also in the economic sphere. In both it may involve the displacement of the incumbent (and competing) public agent. In the political sphere, the challenge may be deemed successful if because of the challenge the public agent is replaced by an agent related, or more to the liking, of the interested third party. As it relates to the economic sphere, the challenge may be deemed successful if the private party is replaced or the terms of the contract or dimensions of the utility’s conduct are changed in ways that benefit the third party. But it is precisely because of competition in the political market that such challenges are particularly dangerous to the private and public agent alike.<sup>36</sup>

In a competitive political market environment third party opportunism, depending on the challenger’s credibility, may entail significant costs to the public agent. The public agent may have to incur significant time and expense to defend its actions,<sup>37</sup> may have to leave its public position, or in the extreme, if the challenge is fully successful, may be demoted or prosecuted.<sup>38</sup>

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<sup>36</sup> For example, the replacement of the private party may damage the political credibility of the incumbent public agent, weakening its position vis-à-vis a third party interested in its replacement.

<sup>37</sup> Public agents would not be expected to leave their positions without a (political) fight. Multiple interest groups may be expected to contribute to the public discussion following a challenge. Some groups, aligned with the beneficiaries of the particular contract or policy, may come to the public agent defense, and help to limit the effectiveness, or credibility, of the challenge (de Figueiredo et al 1999).

<sup>38</sup> This effect works, although dampened, also in non-democratic environments, as long as there is competition for political power. In such environments, though, allegations of corruption and graft may be rationally seen as politically motivated equilibrium outcomes, and hence not have a high degree of credibility. For an excellent application of this idea, and its implication for the organization of society, see Di Tella and Dal Bó (2003).

Given the inherent informational asymmetries between the interested third party, the courts, and the public in general, the challenge may be exercised even if the action is ethical and/or legal. In fact, the more complex the government/utility interaction is, the higher the inherent informational asymmetries, and thus, the higher the probability of third party opportunism.

The recent example of Aguas del Tunari (AdT), another failed water concession contract, provides a potential illustration of third party opportunism. Aguas del Tunari was a 40 year water and sewage services management contract in the City of Cochabamba, granted by Government of Bolivia, in September 1999, to the AdT consortium led by International Water (Tunary) Ltd, a Cayman company fully owned by Bechtel Enterprise Holdings Inc, a US corporation.<sup>39</sup> Operations started in November 1999. In January 2000 a tariff increase was instituted, raising average revenue between 35% and 51%,<sup>40</sup> with tariff increases ranging, according to Bechtel, from 10% for the poorest segments to more than 100% for the richest segments of Cochabamba.<sup>41</sup> Although there were Right away, civil protests started. Initially led by a “Civic Committee,” demanding the renegotiation of the contract, the “Coalition in Defense of Water and Life,” representing Cochabamba

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<sup>39</sup> Aguas del Tunari S.A. v República de Bolivia, ICSID Case No. ARB/02/3, Decision on Respondent’s Objections to Jurisdiction, October 21, 2005, Washington DC, at p.13.

<sup>40</sup> Bechtel claims the average increase was 35% while the Democracy Center reports a study run by SEMAPA, the public utility that operated the water services prior to AdT, claiming that prices increase by 51% on average. See Bechtel Bechtel Corporation, “Bechtel Perspective on the Aguas del Tunari Water Concession in Cochabamba, Bolivia,” March 16, 2005, available at [http://www.bechtel.com/2005-03-16\\_38.html](http://www.bechtel.com/2005-03-16_38.html), and Bechtel, “Cochabamba and the Aguas del Tunari Consortium,” March 2005, available at <http://www.bechtel.com/assets/files/PDF/Cochabambafacts0305.pdf>. Democracy Center, “Bechtel vs. Bolivia, the Water Rate Hikes by Bechtel’s Bolivian Company (Aguas del Tunari) The Real Numbers,” n.d., available at <http://democracyctr.org/bolivia/investigations/water/waterbills-global.htm>.

<sup>41</sup> See Bechtel (2005). The Democracy Center’s computation of rate increases, however, shows a relatively homogen

citizens, but also *tanqueros*,<sup>42</sup> coca growers, and industry, started to demand the termination of the contract. Violent protests started in February, which led to the roll back of the tariff increase. Violence pursued and intensified in April 2000, leading to several deaths. After the violence erupted, the Government terminated the contract, and reversed the water privatization efforts.

The issues surrounding the granting and termination of AdT are highly complex. A prior privatization attempt in 1998 failed to attract any bidders. A subsequent bid attracted only a single bidder, the AdT consortium. Under the new contract, the consortium was not required to own facilities nor resources. It was, however, required to invest in what seemed to be an unprofitable dam and aqueduct (Misicuni) project,<sup>43</sup> and was required to pay down the public utility's debt. The contract involved only potable water, not agricultural water, and affected only connected, not private or community wells.

Nevertheless, the emphasis of the interest groups was on agricultural and local water rights, fear of appropriation by AdT of privately developed wells, and potentially very high rate hikes for the poor; issues that, in principle, were not to take place. The complexity of the concession contract, the negotiated arrangement – with a claim of lack of transparency-<sup>44</sup> rather than a transparent bid, its monopoly nature, as well as the multiplicity of those affected by the granting of the concession (including the *tanqueros*, urban dwellers, industry, among others) and those who may benefit from the political

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<sup>42</sup> *Tanqueros* are water truck operators who distribute water in unserved areas. According to commentators, tanqueros in Bolivia charge those without access 10 times what water distribution companies do. See Finnegan (2002). Walker et.al. (1999, see box 2.4) reports similar results for Tegucigalpa, where homes without connection to the water system paid in 1994 L27 per m3, while they would have paid L2 per m3 if they were connected.

<sup>43</sup> See Bechtel (2005).

<sup>44</sup> According to the Decision on Jurisdiction (at p.13/14), "...on September 3, 1999 ... was a newspaper article reported that the Defense of Water Committee criticized the negotiations as lacking of transparency and requested that the Bolivian government publicize the true rates that would govern before it concluded the Concession."

response (opposition politicians,<sup>45</sup> coca growers,<sup>46</sup> union leaders, among others) created a highly fertile environment in which claims about corruption, potential appropriation of water pipes and agricultural water rights, exacerbated by the tariff increases, could not be easily countered by neither the state nor the company.<sup>47</sup> The result was widespread protests –in multiple other cities, and many on topics wholly unrelated to the water concession,<sup>48</sup> leading to a military curfew, six deaths, the subsequent termination of the concession in April 2000 and the reversal of the privatization process.<sup>49</sup>

#### *IV.1 Implications*

The exposure to third-party opportunism creates risks to both the public agent and the utility investor. In response, both will have incentives to formalize their relation (i.e., to move away from implicit agreements), and to make it highly specific. Furthermore, to mitigate the risk of third-party opportunism, these regulatory contracts will be designed so as to limit potential challenges, both at the signing and implementation stages. As a consequence, regulatory contracts will tend to demand relatively simple compensation schemes, limit high volatility in cash flows to the investor, and rigid procedural

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<sup>45</sup> For an interesting interview with President Evo Morales, who at the time was a national legislator and leader of the coca growers, about the role of the political opposition in the AdT case, see Democracy Now!, “Bolivian President Evo Morales on President Obama: “I Can’t Believe a Black President Can Hold So Much Vengeance Against an Indian President,” April 23, 2010, available at [http://www.democracynow.org/2010/4/23/bolivian\\_president\\_evo\\_morales\\_to\\_president](http://www.democracynow.org/2010/4/23/bolivian_president_evo_morales_to_president).

<sup>46</sup> Coca growers were at the time on a conflict with the Government because of the Bolivian coca eradication program (Finnegan 2002).

<sup>47</sup> According to the Decision on Jurisdiction (at p.14) Bolivia, in its Memorial objecting to ICSID jurisdiction, stated “In fairness, no one negotiating the concession agreement could have anticipated the intensely hostile reaction that greeted AdT immediately upon the Agreement’s signing.” See also Bechtel (2005).

<sup>48</sup> Finnegan (2002).

<sup>49</sup> Finnegan (2002). A similar group then fought the “gas wars” in 2003 during the presidency of Sanchez de Lozada, this time under the leadership of future president Evo Morales.

processes, including formal procedures for renegotiation.<sup>50</sup> As in private contracting, though, these adjustments may not fully mitigate third-party opportunism, and government/utility investors' interactions are likely to experience a higher degree of conflict than contracts among private parties.

In other words, the risk of third-party opportunism means that “relational” contracting is less likely to evolve in utility regulation. Governments, then, will have difficulty entering into close relations with utilities, in which contract adaptation takes place without formal renegotiations, specific administrative processes and/or litigation. Furthermore, regulation will tend to be complex, involving multiple rules and procedures, and will be subject to substantial litigation. The added complexity required to limit the potential for third party opportunism will make regulation look as if marred by “red-tape,” “conflict driven” and “inefficient” overall. This inefficiency, however, may fail Williamson’s remedialness test.<sup>51</sup> In other words, the perceived inefficiency of regulation is an equilibrium response to its hazards, and in particular, to the hazards of third party opportunism, a defining feature of public contracting in general, and of regulation in particular.

#### *IV.2 Institutional Environments*

The potential for third party opportunism will depend, to a large extent, on the nature of the institutional environment in which the investment will take place. To thrive, third party opportunism requires some extent of political contestability and fragmentation.

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<sup>50</sup> Complex compensation schemes may not pass public scrutiny and be perceived as consenting to investors’ demands. Similarly, high payoff volatility must imply instances where investors may receive very high transfers, which may not be easy to explain to the public, and perceived as corrupt. In the same way, flexible procedures may be perceived as granting favors to the investor, and thus increase the public agent exposure to third party opportunism.

<sup>51</sup> See, Williamson (1999).

Although internal party politics could provide the environment for fragmentation, and for the type of political displacement required for third party opportunists to prosper, centralized party power limits the upward mobility of political mavericks, and thus the potential for internal third party opportunists.<sup>52</sup> On the other hand, political instability, the caldron where governmental opportunism thrives, is also conducive for third party opportunism as the cost of removing incumbent politicians falls. In the middle, between stable centralized party control and rampant political instability, is where most of the world democracies fall. “Open access” states naturally facilitate the development and organization of third party interest groups.<sup>53</sup> In these societies, public policies become de-personalized, and governments are constrained in their ability to limit – whether by withdrawing funding, political harassment or direct violence – the development and organization of such groups. It is in these societies where the threat of third party opportunism becomes more credible, as such challenges may not be easily covered up by side payments or the direct threat of the recourse to violence. In “natural” states, following again North, Wallis and Weingast (2006) nomenclature, the public agent may have more instruments at her disposal to quash such challenges, and thus, it could be argued that her ability to overcome a third party challenge is increased.<sup>54</sup>

This discussion, then, suggests that third party opportunism and governmental opportunism may not appear in similar circumstances. While the potential for

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<sup>52</sup> Two interesting parallel examples are the demise of the PRI and the LDP in Mexico and Japan respectively. Both parties controlled their respective polities for more than half a century, providing internal party mechanisms for resolution of public conflicts, as well as for the rotation, displacement and succession of public agents. The framework provided in this paper predicts that public contracting in general, and regulation in particular, became much more cumbersome and rigid in Mexico and Japan since these parties lost power. This is a topic for future research.

<sup>53</sup> Following the nomenclature introduced by North, Wallis and Weingast (2006).

<sup>54</sup> Di Tella and Dal Bó (2003) consider a model where, in equilibrium, the party in power spends resources to counter smear campaigns, judicial harassment or assassination attempts by interest groups who, in equilibrium, are intended to remove the president from office.

governmental opportunism requires an institutional environment with few institutional limitations to governmental discretion, the essence of “natural” states, the potential for third party opportunism is limited in such environments by the same discretionary ability of governments. Third party opportunism, then, would be more effective in open access than in “natural” states, while the risk of governmental opportunism may be acute in the latter.

#### *IV.3 Interactions*

Thus, the adaptation of regulatory responses to hazards would require paying more attention to procedures in environments more prone to third party opportunism, while environments characterized by the threat of governmental opportunism would require more attention to limiting regulatory discretion. When these adaptations cannot be easily implemented, then, vertical integration, i.e., public ownership, would be the norm.

Vertical integration, however, may not alleviate the problems associated with third party and governmental opportunism. Public vertical integration may not solve the “within the bureaucracy” contracting problems. Not only, as discussed, governmental opportunism affects public and private entities alike, but third party opportunism concerns arise also with the implementation of high power incentives within the bureaucracy itself. For the same reason that high power incentives may not be appropriate for regulatory schemes, high power incentives are not often appropriate for within the bureaucracy relations as high transfers to public employees will naturally raise probity questions, and will thus increase the risk of third party opportunism.<sup>55</sup>

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<sup>55</sup> There are many instances, though, of the introduction of some type of high power incentives in bureaucracies. For example, Mexico’s higher bureaucratic echelon under the PRI has traditionally been composed of a high paid technocracy, linked by a network of personal and political relations to the

Complete absence of government intervention in the utility sector, however, may not be feasible either. The same forces that drive governmental opportunism imply that governmental absence from intervention in utility sectors may simply not be credible.<sup>56</sup> Thus, regulatory governance is unavoidable in the utility sector, even without having to consider monopoly power.

There are, then, three basic types of equilibrium organizations for utilities: public ownership, flexible regulation and rigid regulation.<sup>57</sup> The type of organizational outcome observed in a jurisdiction, then, is the combined result of the polity's ability to provide commitment against governmental opportunism, and the potential threats from third party opportunism.

In sum, government/utility investor's interactions are plagued by third party and governmental opportunism. While the institutional environment most propitious for the development of both types of opportunism differ and so differ the nature of governance structures that may each generate, the framework provided here suggests that both types of hazards interact in increasing the specificity and rigidity of regulation and of regulatory contracts causing difficulties in adapting to shocks and leading to low-powered incentives. Similarly, both types of hazards, and their combination, lead to more litigation and conflict, including the potential "inefficient" termination of utility providers, than would normally be observed in private contracts. These "inefficiencies"

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members of cabinet. As a consequence, career advancement has been based on informal norms of reciprocity and loyalty, where bad performance implies disloyal behavior, leading to discontinuation either right away or when the bureau chief moves to another position. See, Grindle (1977).

<sup>56</sup> This does not mean, however, that if technology changes, and economies of scale drastically fall, or investments become less sunk, that lack of intervention by governments is not feasible. In fact, the development of electricity transmission over long ranges imply that electricity generation lost its "utility" characteristic, leading to major deregulation attempts throughout the world. For an early description of New Zealand's light handed regulation experiment, see Evans et al (1996).

<sup>57</sup> I will place the light handed regulation approaches within the "flexible regulation" framework.



persist in equilibrium, and thus utility regulation cannot be simply compared to competitive environments where the hazards characterizing utility investment are not present.

## **V. TCR and Alternative Theories of Regulation**

I'll discuss here briefly the relation of TCR to two alternative theories of regulation: The Chicago School and Incentive Theory. TCR differs from the Chicago School, as exemplified in the path breaking work by Stigler (1971), Peltzman (1976) and Posner (1971), in that, although rent seeking and distributional effects are important to understand regulatory outcomes, TCR emphasizes the interaction between the particular hazards associated with the sector and the institutional environment in which the sector operates. The solution to the associated hazards, then, will impact on the nature of regulatory institutions, how regulation operates, and on sector performance. In other words, TCR calls for the opening of the black box of regulation. TCR also differs from the incentives theory of regulation, as developed following the path breaking work of, among others, Loeb and Magat (1979), Baron and Myerson (1982), and Laffont and Tirole,<sup>58</sup> in two main respects. First, TCR emphasizes that the contracting schemes that are required to provide second best incentives are dependent on the institutional environment in which the firms operate. By developing the link between the institutional environment and the type of regulatory institutions that are feasible, we can, implicitly, develop the institutional conditions under which incentive regulation becomes feasible. Second, since the incentive theory of regulation shares the "black box" approach to

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<sup>58</sup> See the summary of their work in Laffont and Tirole (1993).

politics of the Chicago School,<sup>59</sup> the emphasis on institutional determinants rather than pure efficiency incentives separates TCR also from the incentive theory of regulation.

## **VI. Conclusion**

The brief introduction to TCR presented here provides a comparative framework to understand both the rise and evolution of regulatory institutions over time and across jurisdictions. It emphasizes that regulatory governances cannot be mimicked, nor can easily be compared across jurisdictions, as regulatory performance also responds to the hazards inherent to the institutional environment in which it operates. In sum, TCR calls for a detailed analysis of hazards inherent to utilities given the institutional environment in which they operate.

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<sup>59</sup> Observe that in most of the incentive theory of regulation literature, the regulatory process is described by a regulator's utility function. Interesting extensions into hierarchical or more dynamic models of regulation have brought some institutional flavors to this literature. See, for example, Demski and Sappington (1987); Baron and Besanko (1987); and Laffont and Tirole (1993).

References

- Baron D., and R. Myerson. 1982. "Regulating a Monopolist with Unknown Costs," 50, *Econometrica*: 911-930.
- Baron D. and D. Besanko. 1987. "Commitment and Fairness in a Continuing Regulatory Relationship," *Review of Economic Studies*.
- Coase, Ronald. 1964. "The Regulated Industries: Discussion," 54 *American Economic Review*, pp: 194-197.
- Dal Bó, E. and R. Di Tella. 2003. "Capture by Threat," *Journal of Political Economy*, 111(5): 1123-1154.
- deFigueiredo R., P. T. Spiller and S. Urbiztondo. 1999. "An Informational Perspective on Administrative Procedures," 15 *Journal of Law, Economics & Organization*, pp:283-305
- Demski, J. and D. Sappington. 1987. "Hierarchical Regulatory Control," *The Rand Journal of Economics*, Vol. 18(3), pp. 369-383;
- Esfahani, H. 1996. "The Political Economy of the Philippines' Telecommunications Sector," in Levy, B. and P.T. Spiller, eds., *Regulations, Institutions and Commitment: The Case of Telecommunications*, Cambridge University Press: 1996, pp: 145-201
- Evans, L., A. Grimes, D.J. Teece, and B. Wilkinson. 1996. "Economic Reform in New Zealand 1984-95: The Pursuit of Efficiency," *Journal of Economic Literature* 34: 1856-902.
- Finnegan, W. 2002. "Leasing the Rain," *The New Yorker*, April 8, 2002.
- Goldberg, V. 1976. "Regulation and Administered Contracts." *Bell Journal of Economics*. pp:426-452.
- Grindle, M. S. 1977. "Patrons and Clients in the Bureaucracy: Career Networks in Mexico," 12 No. 1, *Latin American Research Review*, 37-66.
- Hamilton, B.H. and J.A. Nickerson. 2003. "Correcting for Endogeneity in Strategic Management Research," *Strategic Organization*, 10(1): 51-78.
- Henisz, V. 2002. "The Institutional Environment for Infrastructure Investment," *Industrial and Corporate Change*, 11(2):355-389
- Henisz, V. and B. Zelner, 2001. "The Institutional Environment for Telecommunications Investment," *Journal of Economics, Management and Strategy*, 10(1):123-147
- Laffont, J.J. and J. Tirole, 1993. A Theory of Incentives in Procurement and Regulation. Cambridge, MIT Press.
- Levy, B. and P. T. Spiller. 1994. "The Institutional Foundations of Regulatory Commitment: A Comparative Analysis of Telecommunications Regulation," 10 *Journal of Law, Economics, and Organization*, N.1, pp:201-246.
- Loeb, M. and W. A. Magat. 1979. "A Decentralized Method of Utility Regulation," *Journal of Law and Economics*, pp. 399-404.

- Masten, S. E. 2009. "Public Utility Ownership in 19th-Century America: The "Aberrant" Case of Water. Unpublished manuscript.
- McCubbins, M. and T. Schwartz, 1984. "Congressional Oversight Overlooked: Police Patrols versus Fire Alarms," 28 *American Journal of Political Science*, pp: 165-179.
- McCubbins, M., R. Noll and B. Weingast 1987. "Administrative Procedures as Instruments of Political Control," 3 *Journal of Law, Economics and Organization*, pp 243-277.
- McCubbins, M., R. Noll and B. Weingast, 1989. "Structure and Process, Politics and Policy: Administrative Arrangements and the Political Control of Agencies," 75 *Virginia Law Review*, pp: 431-482.
- North, D., J.J. Wallis and B.R. Weingast, 2006. "A Conceptual Framework for Understanding Recorded Human History," NBER Working Paper 12795.
- Savedoff, W. D. and P. T. Spiller. 1999. Spilled water: institutional commitment in the provision of water services, InterAmerican Development Bank, Washington DC.
- Spiller, P. T. 1993. "Institutions and Regulatory Commitment in Utilities' Privatization," *Industrial and Corporate Change*.
- Spiller, P. T. 1995. "A Positive Political Theory of Regulatory Instruments: Contracts, Administrative Law or Regulatory Specificity," *USC Law Review*.
- Spiller, P. T. 1996a. "A Positive Political Theory of Regulatory Instruments: Contracts, Administrative Law or Regulatory Specificity?," 69 *Southern California Law Review*, pp: 477-515.
- Spiller, P. T. 1996b. "Institutions and Commitment," 5 *Industrial and Corporate Change*, pp:421-452.
- Spiller, P. T. 2009. "An Institutional Theory of Public Contracts: Regulatory Implications," in Menard, C. and M. Ghertman, Regulation, Deregulation, Reregulation – Institutional Perspectives, Edward Elgar, 2009, pp:45-66.
- Spiller, P.T. 2010. "Regulation: A Transactions Cost Perspective," *California Management Review*, 52(2):147-158.
- Spiller P. T. and I. Vogelsang, 1997. "The Institutional Foundations of Regulatory Commitment in the UK: The Case of Telecommunications," *Journal of Institutional and Theoretical Economics*, vol. 153(4).
- Troesken, W. 1996. Why Regulate Utilities? The New Institutional Economics and the Chicago Gas Industry, 1849-1924, University of Michigan Press.
- Troesken, W. 1997. The Sources of Public Ownership: Historical Evidence from the Gas Industry, *Journal of Law, Economics and Organization*, 13(1), pp:1-25.
- Troesken, W. and R. Geddes. 2003. "Municipalizing American Waterworks, 1897–1915," *Journal of Law, Economics and Organization*, 19(2): 373-400
- Walker, I.; Velasquez, M.; Ordoñez, F. and F. Rodriguez. 1999. "Reform Efforts and Low Level Equilibrium in the Honduran Water Sector," Chapter 2 of Savedoff, W. and

P.T. Spiller, Eds. Spilled Water – Institutional Commitment in the Provision of Water Services, Inter-American Development Bank, Washington DC.

Walton B. 2003. “Bolivia - A Perspective on Water Supply and Sewerage,” WEDC, Loughborough University.

Waverman, L., M. Meschi, and M. Fuss. Nd. “The Impact of Telecoms on Economic Growth in Developing Countries”. mimeo.

Weingast, B. R. 1995. “The Economic Role of Institutions: Market Preserving Federalism and Economic Development,” Vol 11, No. 1, *Journal of Law, Economics and Organization*, pp:1-31

Williamson, O. E. 1975. Markets and Hierarchies: Analysis and Antitrust Implications. New York: Free Press.

Williamson, O. E. 1976. “Franchise bidding for natural monopolies-in general and with respect to CATV,” *The Bell Journal of Economics*, Vol. 7, No. 1, Spring, pp. 73-104.

Williamson, O. E., 1979. "Transaction-Cost Economics: The Governance of Contractual Relations." *Journal of Law and Economics* 3-61.

Williamson, O. E. 1988. “The Logic of Economic Organization.” *Journal of Law, Economics and Organization*, pp: 65-93

Williamson, O. E. 1996. The Mechanisms of Governance. Oxford: Oxford University Press.

Williamson, O. E, 1999. "Public and Private Bureaucracies: A Transaction Cost Economics Perspectives." 15 *Journal of Law Economics and Organization*, pp. 306-42.