

**INFORMATION ASYMMETRIES AND REGULATORY RATE-MAKING:
CASE STUDY EVIDENCE FROM COMMONWEALTH EDISON AND DUKE ENERGY**

Adam Fremeth

University of Minnesota
Curtis Carlson School of Management
321 19th Ave South.
Minneapolis, Minnesota 55455
United States of America
Tel: (612) 624-3582
Fax: (612) 626-1316
Email: afremeth@csom.umn.edu

Guy L. F. Holburn

University of Western Ontario
Richard Ivey School of Business
1151 Richmond Street North,
London, Ontario N6A 3K7
Canada
Tel: (519) 661-4247
Fax: (519) 661-3485
Email: gholburn@ivey.uwo.ca

Published in *Regulation, Deregulation, and Reregulation: Institutional Perspectives*. 2009. eds.
Claude Menard and Michel Ghertman. Northampton, MA: Edward Elgar Publishing: 289-326.

1. Introduction

Since Baron and Myerson (1982) a large theoretical literature has explored the impact of asymmetric information on the design of optimal regulatory policies for natural monopolies (Armstrong and Sappington, 2007; Laffont and Tirole, 1993). A central insight from this research is that regulators who are uninformed about firm costs or market demand conditions can maximize social welfare by offering pricing structures that effectively pay informational rents to the firm. These induce the firm to truthfully reveal true costs or market demand. Subsequent models have built on Baron and Myerson by adopting alternative assumptions on dimensions such as the firm's technology, regulatory policy instruments and commitment abilities. Despite these theoretical extensions, there has been little empirical assessment of the relationship between asymmetric information and regulated rates.

In this chapter we conduct a qualitative investigation of the relationship between regulators' knowledge of regulated firms and their policy decisions. While directly observing the extent of regulatory knowledge presents a measurement challenge for researchers, we instead identify mechanisms through which information about regulated entities is revealed to external parties, including regulators. We focus our attention on three types of mechanism: the first considers the development of tacit knowledge through a regulator's prior experience in office in the task of administering regulatory policies; the second is the publication of codified knowledge about a firm in the form of other agency, or judicial, rules or orders. Greater first-hand regulatory experience and greater amounts of external information both reduce information asymmetries and the evidentiary barriers to regulators implementing new policies, increasing their incidence. Thirdly, organized interest groups, such as consumers or NGO's, can provide information which, if credible, can establish the evidentiary basis for a policy decision.

We consider evidence for our hypotheses in the context of two in-depth case studies of rate changes implemented for two major investor-owned electric utilities in the United States, Commonwealth Edison and Duke Energy.

2. Asymmetric Information, Evidence and Regulatory Policy

In the canonical principal-agent formulation of regulatory policy-making under conditions of asymmetric information, the degree of information asymmetry between firms and regulators is assumed to be a fixed constant. An alternative assumption, however, is that agencies differ in their knowledge and understanding of the firms they regulate, depending on factors such as staff experience and learning from prior monitoring activities. Agencies may also vary in their willingness to expend effort in the acquisition of expertise and information (Bawn, 1995; Aghion and Tirole, 1997; Bender and Meirowitz, 2004; Stephenson, 2007).

We contend that one impact of differing regulatory information asymmetries on the policy-making process is to affect the costs to the regulator of collating evidence to support a policy decision. A common administrative requirement is that regulators base their decisions on documented evidence presented during quasi-judicial hearings. In the U.S., utility regulators must specify "findings of fact" after formal hearings which form the basis for establishing rates. Obtaining supportive evidence, however, can be a costly exercise for regulators who wish to initiate new policies. Regulators who are less well informed about the firm, and thus about policy alternatives and consequences, find it more difficult to justify a change in policy since it takes longer to collect and analyze data, and to consult with other parties. Well informed agencies are

better able to identify and assess the impact of alternative policies on firms and external parties, and hence to collate supporting evidence for their decisions at relatively low cost.

There are two implications for policy-making: first, agencies with better information will be more likely to initiate policy changes since the costs of obtaining the necessary evidence to justify the change will be lower. In the pharmaceutical industry, for example, more experienced FDA regulators have a greater tendency to detect non-compliant manufacturing processes during inspections, and hence to impose sanctions (Macher, Mayo and Nickerson, 2007). Conversely, more poorly informed agencies will be less likely to identify firms that are out of compliance. If they do so, they will incur greater costs of obtaining sufficient evidence to justify a change in policy. Without evidence, the agency would be at risk of being overturned by the courts on procedural grounds. Courts have often deferred to regulatory agencies on matters of substance though are more willing to overturn on procedural grounds (Studness, 1992). Section 706 of the Administrative Procedure Act (APA) enables federal courts to “set aside agency action, findings, and conclusions found to be arbitrary, capricious, [or] an abuse of discretion”. Federal judicial precedent has established that an agency demonstrate it has “examine[d] the relevant data and articulate[d] a satisfactory explanation for its action, including a rational connection between the facts found and the choice made” (State Farm v. Motor Vehicles Manufacturers’ Association, 463 U.S. 29 (1983)). Similar “hard look” provisions exist for state-level agencies.

Second, more expert agencies will be better positioned to block firm-initiated policy proposals. When regulated firms present evidence to support a new policy – for example, the authorization of a new pharmaceutical drug, new utility rates or a new technical standard – agencies with a deeper understanding of the firms or industries will be more able to identify biases in their arguments and to assess the validity of their claims, thereby providing the grounds for denial. Less expert agencies, on the other hand, will have a higher cost of countering the evidentiary basis of such proposals, increasing the probability of acceptance.

In the next section we develop this thesis in greater depth in the context of changes to regulated rates in the utilities sector.

3. Utility Rate-making in the United States

In the United States, regulatory policies in the utilities sector are primarily designed and implemented by state-level independent agencies, Public Utility Commissions (PUCs). PUC mandates are broadly defined: federal legal precedent establishes that PUCs must set rates that enable utilities to earn a “fair and reasonable” return on “used and useful” assets (Lesser, 2002; Howe, 1985), though methodologies for assessing such criteria are not specified. Rates are determined through periodic rate reviews which can be initiated at any point by the PUC or by the utility. Upon initiation of a rate review, a series of public hearings is held where the utility, PUC staff and any admitted interest groups present arguments and information supporting their positions about justifiable allowed rates-of-return, operating costs and assets to be included in the rate base (Hyman, 2000). At the end of this process, which may extend up to a year or more in duration, PUC commissioners make a majority decision on the rates that final consumers are obliged to pay. Depending on the commissioners’ assessment of utility costs and the allowed rate of return, rates may increase or decrease as compared to the status quo.

Utilities have an incentive to initiate rate reviews if they expect that the PUC will establish the allowed rate of return at a level above the actual level the utility is currently earning. Since rates are otherwise fixed, the actual earned rate of return on assets decreases as the

utility's operating and investment costs increase, all else equal. Historically, utilities have thus tended to initiate reviews after periods when costs have risen, for instance after the construction of new infrastructure facilities, in order to obtain higher rates and profits (Joskow, 1974). PUCs, on the other hand, have an incentive to trigger rate reviews if they consider actual earned profits to be above the level determined by the target allowed rate of return. In this case, a rate review would lead to a reduction in rates and profits for the utility.

Information asymmetries between the utility and PUC affect the initiation decisions of each party. For the PUC, it is difficult to observe accurately the utility's earned rate of return at any point in time and hence whether a rate reduction is justified. Better informed PUCs are more likely to identify, and be able to document, whether a utility is over-earning, and hence to implement rate reductions. More astute PUCs are also better able to assess the validity of any utility claims that they are under-earning and that rate increases are required. Anticipating greater levels of scrutiny and an increased probability of denial, utilities will be less likely to initiate reviews that call for rate increases when PUCs have better information about the utility. In general, then, we predict that conditions of reduced information asymmetries will be correlated with more rate reductions and fewer rate increases. We now identify several natural sources of information heterogeneity among regulators in order to develop specific hypotheses about factors affecting the incidence of utility rate increases and decreases.

Regulatory Resources

One source of regulator knowledge about utility costs, operations and market conditions is direct regulatory experience (Macher, Mayo and Nickerson, 2007). As regulatory commissioners and staff accumulate more experience over time through monitoring and evaluation activities, they develop deeper knowledge about specific regulated entities. Some of this knowledge exists tacitly within agency personnel; other aspects become codified and transmitted through documented analyses and reports. Agencies with relatively greater financial resources are also able to devote more resources to overseeing each regulated firm, thereby contributing to the stock of organizational knowledge.

With greater experience and resources, regulators become more adept at understanding utility true costs, profits and managerial capabilities, as well as the impact of exogenous events – such as changes in weather patterns, regional economic growth, environmental standards or financial market conditions – on utility earnings. All else equal, then, regulators with greater human and financial resources will be better able to identify when rate reductions are justified and to provide the necessary evidence during a rate review; and to challenge utility requests for rate increases.

External Information

Information on utility costs and operations can originate from sources other than an agency's own experience and oversight activities. In the electric utility sector, federal agencies such as the Nuclear Regulatory Commission (NRC) or the Environmental Protection Agency monitor selected aspects of utility performance and have the authority to punish violations. The NRC, for instance, can impose financial penalties, ranging from \$75,000 for security breaches to \$450,000 for technical violations requiring a plant shutdown (Feinstein, 1989). Information revealed by independent agencies can shape Public Utility Commission beliefs about utility costs and management prudence. Similarly, for utilities that operate in multiple states, other PUC rate determinations can also yield valuable information about corporate management practices and

abilities (Lyon and Mayo, 2005). Both types of information assist PUCs in justifying rate reductions or in countering utility claims that costs have risen and that rates should be increased.

Interest Group Opposition

Organized interest groups also have an incentive to provide credible information to PUCs on regulated firms and regulatory policy consequences in order to influence policy outcomes (Grossman and Helpman, 2001). State administrative procedure acts generally grant authority to major interested parties, such as large industrial consumers or consumer advocates, to have standing in public rate hearings (De Figueiredo and Vanden Bergh, 2004; Holburn and Vanden Bergh, 2006). Standing provides interest groups with the chance to access utility informational filings, to present arguments and evidence regarding policy and to challenge utility claims. Interest groups can also petition PUCs to initiate rate investigations or rate reductions though PUCs need not comply with such requests.

We argue that interest group opposition is more effective at limiting the incidence of rate increases than at promoting rate decreases. Due to informational asymmetries regarding utility costs, it is difficult for interest groups to independently obtain and provide evidence to a PUC that would justify a reduction in rates. Interest groups do not have authority to access utility records or management accounts in the same ways that PUCs do. Imperfect information about utility costs thus makes it difficult for interest groups to credibly petition the PUC to initiate a rate review with the purpose of ultimately reducing rates. However, lobbying for intervener status during utility-triggered rate reviews – which then provides access to utility information - is less costly. When a utility initiates a rate review it makes available to the PUC and interested parties the informational basis of its claim for a rate increase. This documentation can provide the basis for interest groups to more carefully scrutinize utility operations and to formulate counter arguments. Anticipating such behavior, utilities will be less likely to request rate increases in adverse environments, including those characterized by strong interest group competition.

In summary, we anticipate that regulators are more likely to implement rate decreases and less likely to implement rate increases when they are endowed with greater amounts of experience, resources, and external information. Furthermore, we predict a differential effect from interest group and political opposition as we expect a reduction in the incidence of rate increases but a smaller effect on the incidence of rate decreases.

4. Commonwealth Edison and Duke Energy Rate Reviews

We now consider our predictions in the empirical context of two case studies of recent reviews of the regulated rates of U.S. electric utilities, one involving a rate increase, the other a decrease. One case involves an increase to rates ordered by the Illinois Commerce Commission (ICC) in 2006 for Commonwealth Edison (ComEd), while the other is a rate decrease ordered in 2003 by the South Carolina Public Service Commission (SCPSC) for Duke Energy (Duke). While these two rate cases are not necessarily typical of rate reviews in general, the contrast of the preceding events, and of the informational environment, between a rate increase and decrease are informative.

Between 2003 and 2005, ComEd, the largest electric utility in Illinois, had made substantial investments in its transmission and distribution networks in response to worsening reliability performance¹, notably rising frequency and duration of service interruptions.² The claimed value of this investment was more than \$2 billion, a substantial increase above the existing ICC-approved rate base that had been valued at \$3.6 billion in the firm's previous rate case in 2003. Consequently, the financial rate of return that the firm earned on its assets had fallen below the 8.99% level previously authorized by the ICC in 2003.

Having made these investments, ComEd had an incentive to reveal its increased costs to the ICC in order to obtain financial recovery. In August 2005 it filed for an annual rate revenue increase of \$345 million. Since the burden of proof lay with ComEd to justify the proposed change in policy, it provided a substantial amount of documented evidence that supported its claim. The initial filing contained over 600 pages of evidence covering more than 100 cost issues. After almost a year of administrative hearings and analysis, during which the ICC and other parties considered ComEd's original and additional evidence, the ICC deemed that an increase in rates was justified, though not by the full amount that ComEd had requested.³

By contrast, utilities do not typically have an incentive outside of normal reporting procedures to voluntarily reveal reductions in costs or increased earned rates of return, which would then motivate regulators to reduce rates and allowed profits. The burden of proof thus rests with regulatory agencies to document excessive earnings though, in the presence of asymmetric information, this can be a costly and uncertain exercise. Agencies also typically operate under fixed budgets that are determined annually through political budgeting procedures, implying the existence of opportunity costs associated with earnings investigations.

The circumstances surrounding the decision of the South Carolina Public Service Commission to reduce Duke's annual rates by \$30 million in 2003 illustrates differences in the mechanisms through which information is revealed in rate reductions. Prior to the 2003 rate case, Duke had been embroiled in a 15 month investigation of its accounting practices. According to a whistleblower, Barron Stone, a senior business analyst within the accounting department at Duke, and later confirmed by an independent audit by Grant Thornton, the firm had used unorthodox accounting practices to intentionally underreport its income by \$124 million from 1998 to 2000. Duke had allegedly included expenses from its unregulated retail operations in its regulated accounts and had additionally not correctly reported \$84 million of insurance rebates on its nuclear power plants. Such accounting maneuvers enabled Duke to effectively boost its regulated profits significantly above the level permitted by the SCPSC. These remained undetected by the SCPSC for almost a 3 year period.⁴ Duke eventually settled the case with the SCPSC, a condition of which involved implementing more transparent accounting policies.

¹ Reliability problems came to the forefront for ComEd when in the summer of 1999 power failures left many parts of Chicago without electricity for multiple days and closed the commodity exchanges and courthouses.

² Illinois Commerce Commission, No. 05-0597: Executive Summary (Springfield, Illinois: Illinois Commerce Commission, 30 Aug. 2005), 1-2.

³ ComEd was also allowed to recover \$8 million of administrative costs it had incurred to conduct the rate review. Illinois Commerce Commission, No. 05-0597: Order (Springfield, Illinois: Illinois Commerce Commission, 26 July 2006), 45-50.

⁴ Stan Choe, "Duke Energy settles accounting case with North Carolina Utilities Commission", *The Charlotte Observer*, 30 October 2002.

These in turn enabled the SCPSC to identify over-earning in 2003: the commission staff had determined in a quarterly financial report dated March 31, 2003 that the firm had earned an excessive amount of revenue due to an increased demand for energy during colder-than average winter temperatures. Duke had surpassed its allowed operating revenues by \$41 million and earned a return on equity of 14.25% rather than the regulated target of 12.25% which had been set in a prior rate case. The executive director of the SCPSC had called this over-earning “unprecedented in the recent past for an electric utility”. In an effort to avoid a full rate investigation that would have examined many more cost issues, Duke accepted the SCPSC’s order and agreed to reduce its rates by \$30 million and to write down \$16 million of long term debt. This would effectively reduce its return on equity to 12.03%.

The contrast in the origin of information that motivated these rate changes is clear. In Illinois, extensive information on cost increases was purposively documented by ComEd for the ICC. In South Carolina, however, an exogenous signal – in the form of an internal whistleblower – alerted the regulatory authority to hitherto undetected excess profits several years beforehand. In general, as the burden of proof shifts to less informed parties, the likelihoods of both a comprehensive rate review case and a rate decrease are diminished.

Regulatory Resources

The ability of regulatory agencies to assess true utility profitability varies with their experience and resources. Public utility commissions that are well funded, and that have experienced and knowledgeable commissioners and staff are partly able to mitigate their informational disadvantage. As a result, commissions that are rich in such resources can not only more effectively deliberate utility requests for rate increases but also identify circumstances that justify a rate decrease. In the period 1980-2000, there were approximately 950 electric utility rate increases implemented by PUCs, and approximately 220 rate decreases. Our analysis of average PUC commissioner experience, as gauged by time in office, is consistent with our expectations about the greater amount of PUC commissioner experience required to successfully implement a decrease compared to an increase: we find that in the typical rate increase, the average commissioner in a PUC had 3.38 years of experience in office, whereas the equivalent figure is 4.10 years for rate decreases.

Consistent with this general pattern, Duke’s 2003 rate decrease was ordered by a relatively experienced regulatory body. The SCPSC is headed by seven commissioners who are elected by the General Assembly of South Carolina for four year terms. In 2003 these commissioners had on average over 5 years of experience in that role, greater than the historic national average. In fact, Commissioner William Saunders had sat on the PSC for over ten years, enabling newer members to benefit from his experience. In addition, the executive director of the SCPSC, Gary Walsh, had 30 years of experience in the organization, providing him with an intimate understanding of Duke’s operations even though Duke had not had a formal rate review for more than a decade.

The stock of organizational experience thus allowed the commission to develop a relatively nuanced understanding of the three electricity firms that they regulated and to identify circumstances that might warrant a rate reduction. Indeed, in 1998 the SCPSC ordered a rate cut for South Carolina Electric and Gas (SCE&G) which had exceeded its return target by 1.04%.

Five out of the seven commissioners that ordered the Duke decrease in 2003 had also participated in the 1998 SCE&G rate case.⁵

Unlike the SCPSC, the Illinois Commerce Commission had a relatively inexperienced set of commissioners with, on average, less than three years in office at the time ComEd's rate case in 2006. The most experienced was Kevin Wright, appointed by the prior governor, George Ryan, in September 2002. However, the commissioners were supported by a well funded and professionally staffed organization. The ICC operated with an annual budget of \$125 million and had almost 300 employees, placing it in the top 20% among state public utility commissions as ranked by budget. Furthermore, ComEd's previous rate case from a mere two years earlier allowed three of the five commissioners and the commission staff to have a deeper understanding of ComEd's operations.^{6,7}

The familiarity of the commission staff with ComEd's position allowed it to develop a rebuttal to some of the evidence presented by the firm. The staff responded to over sixty issues in a 77 page document and provided as much information as ComEd in its recommendation on the appropriate rate of return.⁸ The firm had its allowed rate of return decreased by almost a full percentage point from the 2003 ruling.⁹ In addition, the staff focused on rebutting ComEd's attempt to include an \$853 million pension asset within its allowed rate base. The staff argued, with the support of expert witness testimony, that this action was unnecessary to support the firm's current bond rating status and that it would more appropriately be included within the firm's unregulated operations. Again the ICC ruled in accordance with the staff on this issue, ordering the rate base to be set at \$665 million below ComEd's request.

External Information

In addition to the tacit knowledge that accumulates through experience in an organization and its employees, an understanding of regulated entities can be shaped by external information and evidentiary sources. Both the Duke and ComEd cases illustrate how such evidence can influence the decisions of a regulatory commission.

Duke operates as a regulated utility in North Carolina, where it serves 1.7 million customers, as well as in South Carolina, where it has 600,000 customers. As a result of the federal and state investigations initiated in response to claims of accounting improprieties at Duke in 2002, Duke reached an \$18.25 million settlement in its largest state, North Carolina. The settlement imposed strict rules on Duke which required the firm to meet with the regulatory staff of the NCUC every quarter and to discuss operations and accounting procedures, and for Duke's senior officers to certify all financial documents filed with the commission. Not surprisingly, the South Carolina PSC had closely monitored events in North Carolina. Based on the evidence that

⁵ Stan Choe, "High profits at Duke Power may prompt rate cut for South Carolina customers", *The Charlotte Observer*, 15 July. 2003.

⁶ Commissioners Hurley and Ford voted on the 2003 decision, and Commissioner O'Connell-Diaz was the Administrative Law Judge on the case at that time.

⁷ Illinois Commerce Commission Docket 01-0423.

⁸ Illinois Commerce Commission, No. 05-0597: Summary of Positions of the Staff of the Illinois Commerce Commission (Springfield, Illinois: Illinois Commerce Commission, 4 May 2006).

⁹ Philip S. Cross, "Regulators trust, but verify", *Public Utilities Fortnightly*, November 2006.

emerged initially from the events triggered in Duke's North Carolina business, it too negotiated a financial settlement with Duke that reduced rates, as well as new operational monitoring procedures.

ComEd's rate case in Illinois coincided with extensive public deliberation about a proposed merger between Exelon, ComEd's parent company, and Public Service Enterprise Group (PSEG). The \$17 billion merger would have created the largest utility in the country, though regulatory hurdles and interest group pressures ultimately ended negotiations between the companies in September 2006. As part of the original merger filings to both state and federal regulators, a significant body of evidence had been revealed concerning the appropriate return on equity that ComEd would require in order to attract investors. The Consumers Utility Board (CUB), which acts as the public advocate in Illinois, along with the support of the city of Chicago and Cook County, had used some of this information when establishing its position in the 2006 rate case.¹⁰ In particular, these interest groups used the stock valuations for the merger which were conducted by three major investment banks (Morgan Stanley, JP Morgan, and Lehman Brothers) which indicated that a 7.75% return on equity would be appropriate for ComEd. This was substantially below the returns allowed by public utility commissions in other states and also below the 11.0% that ComEd had requested. With its limited budget, the CUB leveraged this secondary evidence to build a case that the traditional valuation techniques, including the capital asset pricing model and the discounted cash flow model, were overly subjective and led to inflated return figures. Adopting the recommendations of investment banks represented a novel approach to the regulatory review process and industry publications took note of this strategy.¹¹ Although the ICC did not adopt the CUB position, it selected a return on equity of 10.04% that was still substantially below the firm's demand and even below that recommended by the ICC staff. The language of the final order explicitly commented on the CUB's methodology and noted that in future such evidence could continue to complement traditional valuation techniques. Thus, as with the case of Duke Energy in South Carolina, it appears that evidence on utility operations emanating from external sources played an important role in rate case outcomes.

Interest Group and Political Opposition

The ComEd rate case illustrates how, by initiating formal policy reviews, firms can expose themselves to political and interest group opposition which, in the absence of a review, may pose less of a threat to the firm. In 2005, when ComEd initiated proceedings with the ICC, electricity policy had already become a salient political issue as the state was undertaking restructuring of the power generation market. Public debates over the merits of uniform wholesale power auctions, which ComEd supported, had focused on concerns that rates could rise by more than 15%.¹² As a result, ComEd's transmission and distribution rate case attracted significant attention. In the political arena, Rod Blagojevich, the Democrat governor of Illinois, had taken a strong public stand against ComEd's rate request. Blagojevich had written to the ICC

¹⁰ Illinois Commerce Commission, No. 05-0597: The Statement of positions of the Citizens Utility Board, the Cook County state's attorney's office, and the City of Chicago (Springfield, Illinois: Illinois Commerce Commission, 4 May 2006).

¹¹ Philip S. Cross, "Regulators trust, but verify", *Public Utilities Fortnightly*, November 2006.

¹² Arthur Laffer and Patrick Giordano, "Exelon Rex", *Wall Street Journal*, 1 December 2005.

stating that rate increases should be avoided and that he was prepared to dismiss any commissioner who supported an increase, despite the absence of a clear legal basis for doing so.¹³ Since his election to office in 2003, Blagojevich had appointed four out of the five ICC commissioners, including the chairman, Charles Box (see Table 1).

Although the ICC has a legally independent status as a regulatory agency, its policy decisions are monitored by the state legislature, which has responsibility for establishing budgets, conducting hearings and which, additionally, can enact legislation to modify agency rulings. The political environment of the state house and senate thus also has the ability to shape ICC decisions. In 2005, both chambers of the legislature were dominated by Democrats. For the first time in five election cycles the Democrat party had sizable majorities in the house and senate (See Table 2). Traditionally, the Democrat party had tended to favor consumer over shareholder interests, as compared to Republicans. Democrat control then of the executive, legislature and ICC did not augur favorably for ComEd.¹⁴

In addition to a political environment that appeared to be stacked against it, ComEd opened a Pandora's Box of organized interest group opposition when it launched its rate case. Thirty-three parties registered as intervenors in the rate case, enabling them to obtain ComEd's evidence and testimony and to present their own arguments during administrative hearings (see Table 3 for a full list). The most active participants were the Attorney General, the Citizens Utility Board (which was supported by the city of Chicago and Cook County), and Illinois Industrial Energy Consumers (IIEC). These groups selectively challenged specific elements of ComEd's filing. The CUB, for instance, dedicated part of its budget to engage the services of an expert witness who, on the basis of an alternative method of analysis, argued for a smaller rate of return and a significant reduction to the return on equity. The IIEC adopted a similar strategy, advocating a return on equity of 9.9% and a capital structure that favored debt. The Attorney General's office supported many of the arguments of the ICC staff and CUB but devoted considerable attention to arguing against including certain pension fund monies in the rate base. The staff of the ICC was required to respond to all issues presented by ComEd but developed a particularly strong challenge to the size of the firm's rate base and its operating expenses. Tables 4 and 5 illustrate the differences between these parties' positions on the allowed rate of return, rate base, operating expenses and the final order made by the ICC.

The final ICC order on July 26, 2006 barely improved ComEd's financial position. Whereas ComEd had originally requested a revenue increase of \$345 million, the ICC permitted only an \$8 million adjustment. Although utilities rarely receive the full amount of their requests in rate reviews, the magnitude of the difference in ComEd's is unusual. During the 1980s and

¹³ Robert Manor, "ComEd bankruptcy warning sounded", *Chicago Tribune*, 29 September. 2005. In fact, this was not an idle threat as soon after he apparently forced the current chair of the commission, Edward C. Hurley, to resign in what Blagojevich referred to as a decision that was "being made for all of the right reasons". The governor then attempted to install in his place Marty Cohen, the executive director of the consumer advocacy office, the Citizen's Utility Board. While the Senate rejected the governor's proposal, the vote against the confirmation was only narrowly passed with a 3 vote majority (31-28).

¹⁴ ComEd had in fact sought to develop some political support in an otherwise hostile political environment. In particular, it had courted Emil Jones Jr., the Illinois senate president. Jones had raised 14% of his 2005 campaign contributions at a "Buffet-by-the-Pool" event hosted at the home of ComEd CEO, Frank Clark. At least \$78,000 of the \$127,000 raised at this June 5, 2005 fundraiser was contributed by executives or board members at ComEd or its parent company, Exelon. Jones subsequently confronted Blagojevich when he tried to appoint the consumer advocate to the ICC. See Greg Hinz and Steve Daniels, "ComEd's juice sparks high-powered ally" *Crain's Chicago Business*, 29 August 2005.

1990s, U.S. electric utilities received, on average, 58% of their requested revenue increases.¹⁵ It is instructive to examine more closely the three components of the ICC decision – the allowed rate of return, the rate base and operating expenses – in order to understand the basis of the ruling.

First, public utility commissions have some discretion to select their preferred rates of return since legislative acts and judicial precedent do not specify particular methodologies for calculating them.¹⁶ The ICC’s ruling on the allowed return on equity was significantly below that requested by ComEd, and was even lower than that recommended by the staff of the ICC. In fact, compared to public utility commission rulings in other states, the return on equity of 10.04% was one of the lowest allowed in 2006 (See Table 6). This provides evidence of greater weight being placed by the ICC on consumer over shareholder interests.

Second, the ICC’s decision on the allowed rate base also demonstrates how regulatory discretion can be utilized when competing claims are both supported by evidence. A substantial component of ComEd’s proposed increase to the rate base consisted of a pension asset valued at \$853 million. ComEd testified that they had chosen to ‘fully fund’ its portion of Exelon’s, ComEd’s parent company, pension plan in an effort to improve their credit rating. According to the firm, the net result would save ratepayers approximately \$30 million in reduced annual pension expenses and that shareholders should be compensated for this investment. The ICC, however, chose to completely disallow this asset, referring to the staff’s argument that funding the pension asset at that time was unnecessary.

Third, the ICC drastically cut much of ComEd’s requested operating expense increase. For instance, ComEd had sought a raise of \$84 million in “Administrative and General” costs since its last rate case, which represented a 55% increase. The firm had argued that the operations of the organization had changed significantly since generation assets had been transferred to Exelon and that many of the firm’s activities had now been restructured. The ICC ruled, however, that ComEd had not met the required evidentiary standard to prove that its proposed A&G expenses were prudent and reasonable. The commission ruled close to the staff’s position by permitting only a \$17 million increase in this line item.¹⁷

While the ICC ruled in favor of ComEd on a variety of sub-issues during the course of the rate case, the organized interest group opposition that ComEd confronted on many of the components provided the evidentiary basis for the ICC to justify its decision. On other issues, the ICC was able to claim that ComEd had not provided sufficient information to make its proposal credible. Given the nature of the broader policy environment in which electricity policy was

¹⁵ These figures were calculated by the authors using data from all major electric utility rate cases that resulted in rate increases during the 1980s and 1990s, totaling 947 cases.

¹⁶ As the New Mexico Public Utility Commission commented about its discretionary powers, “[*there is*] a zone of reasonableness between confiscation [*of utility assets*] and extortion [*of consumers*] in which the Commission has great discretion in setting just and reasonable rates”. (New Mexico PUC Brief, Supreme Court Case No. 24,148, PNM Gas Services vs. NMPUC. 1998).

¹⁷ ComEd appealed the order and provided detailed evidence upon rehearing how it required a further increase to its G&A expense. The ICC’s rehearing order on December 20, 2006 increased this allowed expense a further \$50 million. The majority of this increase was in wage and salaries and restructuring allocations that were related to the firm’s recent organizational restructuring.

becoming highly politicized at the time of the rate case, it is less surprising that ComEd failed to achieve a significant earnings improvement.

In contrast to ComEd's rate case in Illinois, adverse political forces did not appear to be a factor in Duke's 2003 rate change in South Carolina. Indeed, although the SCPSC cut Duke's rate revenue, it nonetheless permitted the utility to still earn a relatively generous return on equity. The SCPSC set this at 12.03%, which was within the top 25% of electric utility ROE rulings in the country during 2003, ranging from 9.5% to 12.75% (see Table 7). The overall political environment was also relatively benign, with Republican control of the legislature and Republican-appointed PSC commissioners (see Tables 8 and 9).

As already noted, organized interest group opposition was not responsible for triggering the prior accounting investigation and ultimate rate reduction. In fact, following the SCPSC's determination that Duke had overearned, Elliot Elam, the consumer advocate in South Carolina, had requested a comprehensive examination of Duke's rates, which would have included a full investigation of the rate base, as well as the appropriate rate of return and operating expenses. However, unable to provide specific new evidence about the reasonableness of the firm's costs, such claims were dismissed by the PSC. While the PSC had the authority to launch a full rate review of its own accord, this would have been a costly exercise, especially for a relatively small commission with 90 staff and wide range of regulatory responsibilities.

5. Conclusion

The general argument we advance here is that the extent of information asymmetries between regulators, interest groups and regulated firms affects the administrative costs of policy-making. By relaxing the traditional assumption in principal-agent models of policy-making that ex ante information asymmetries are a non-varying constant, we explore various mechanisms through which regulators can become more informed about utility costs and profitability. Factors such as prior regulatory experience, agency resources, external agency rulings and interest group monitoring can all lower the costs of rate-making, thereby enabling regulators to adjust policy in response to external shocks and to block firm-initiated proposals. Regulated firms also act strategically by not requesting favorable policy changes when the decision costs to the regulator of denying or substantially modifying such requests are lower.

Our prediction that greater information asymmetries increase the rents accruing to regulated firms – in the form of higher rates – is similar to the predictions of Baron and Myerson's 1982 model. However, an important difference is in the mechanism through which this rent transfer occurs. While Baron and Myerson anticipate that uninformed regulators should design a menu of rate options, either at or above utility costs, we argue that the administrative cost of obtaining evidence on the true state of utility costs can outweigh the expected benefits – lending a status quo bias to rates when costs fall, and a tendency to raise rates too much when costs increase.

In our two case studies we present some preliminary evidence that is consistent with our expectation that richer informational environments will exert downward pressure on regulatory rate decisions. Nonetheless, an important limiting factor that weakens our ability to make causal inferences is in the inability to directly observe the extent of regulatory knowledge. Future research might also broaden the empirical scope to include a statistical examination of our predictions regarding rate changes for a larger population of electric utilities.

6. References

- Aghion, P. and Tirole, J. 1997. "Formal and Real Authority in Organizations." *Journal of Political Economy*, 105: 1-29.
- Armstrong M. and Sappington D.E.M.. 2007. "Recent Developments in the Theory of Regulation." In M. Armstrong and R. Porter, eds., *Handbook of Industrial Organization (Vol. 3)*. Amsterdam: North-Holland.
- Baron, D.P. and Myerson, R.B. 1982. "Regulating a monopolist with unknown costs." *Economertica*, 50: 911-930.
- Bawn, K. (1995). Political control versus expertise: Congressional choices about administrative procedures. *American Political Science Review*, 89, 62–73.
- Bendor, J. and Meirowitz, A. 2004. "Spatial models of delegation." *American Political Science Review*, 98: 293-310.
- De Figueiredo, R. J. and Vanden Bergh, R. G. 2004. "The political economy of state-level administrative procedure acts." *Journal of Law and Economics*, 47: 569–588.
- Feinstein, J.S. 1989. "The safety regulation of U.S. nuclear power plants: Violations, inspections, and abnormal occurrences." *Journal of Political Economy*, 97: 115-154.
- Grossman, G.M. and Helpman, E. 2001. *Special Interest Politics*. Boston: MIT Press
- Holburn, G.L.F. and Vanden Bergh, R.G. 2006. "Consumer capture of regulatory institutions: The creation of public utility consumer advocates in the United States." *Public Choice* 126: 45-73.
- Howe, S. 1985. "The used and useful standard: What should the criteria be?" *Public Utilities Fortnightly*, February 7.
- Hyman, L.S. 2000. *America's Electric Utilities: Past, Present and Future*. Arlington, VA,: Public Utilities Reports.
- Joskow, P.L. 1974. "Inflation and environmental concern: Structural change in the process of public utility price regulation." *The Journal of Law and Economics*. 17: 291-327.
- Laffont, J.J., and J. Tirole. 1993. *A Theory of Incentives in Regulation and Procurement*. Boston: MIT Press.
- Lesser, J.A. 2002. "The used and useful test: Implications for a restructured electric industry." *Energy Law Journal*. 23: 349-382.

Lyon, T.P. and Mayo, J.W. 2005. "Regulatory opportunism and investment behavior: evidence from the U.S. electric utility industry." *RAND Journal of Economics*. 36: 628-644.

Nickerson, J., Macher, J.T. and Mayo, J.W. 2007. "*Exploring the Information Asymmetry Gap: Evidence from FDA Regulation.*" Working Paper.

Stephenson, M.C. 2007. "Bureaucratic decision costs and endogenous agency expertise." *Journal of Law, Economics, and Organization*. 23: 469-498.

Studness, C.M. 1992. "Implications of imprudence and deregulation for utility financial policy." *Public Utilities Fortnightly*. May 1.

Table 1: ICC Commissioners in 2005-06

<i>Commissioner</i>	<i>Political Affiliation</i>	<i>Prior Profession</i>	<i>Start of Term</i>	<i>Expiry of Term</i>	<i>Appointed by</i>
Charles Box	Democrat	Mayor	January 2006	January 2009	Rod Blagojevich
Robert Lieberman	Democrat	CEO of Center for Neighborhood Technology	February 2005	January 2010	Rod Blagojevich
Lula Ford	Democrat	Teacher	January 2003	January 2008	Rod Blagojevich
Erin O'Connell-Diaz	Republican	Administrative Law Judge at ICC	April 2003	January 2008	Rod Blagojevich
Kevin Wright	Independent	Political staffer	September 2002	January 2007	George Ryan

Table 2: Political Party Control of Illinois House of Representatives and Senate

<i>Election Year</i>	<i>House</i>		<i>Senate</i>	
	<i>Democrats</i>	<i>Republicans</i>	<i>Democrats</i>	<i>Republicans</i>
2006	66	52	37	22
2004	64	53	31	27
2002	64	54	32	26
2000	62	56	27	32
1998	60	58	28	31

Table 3: Intervenor in the 2006 Commonwealth Edison Rate Case

Attorney General of the State of Illinois	Downers Grove Sanitary District
BlueStar Energy Services, Inc.	Dynegy Inc.
Building Owners and Managers Association of Chicago	Illinois Association of Wastewater Agencies
Castwell Products, Inc.	Ford Motor Company
Chicago Transit Authority	Corn Products International, Inc.
Caterpillar Inc.	Merchandise Mart Properties, Inc.
Abbott Laboratories, Inc.	Sterling Steel Company, LLC
Citgo Petroleum Corporation	Daimler Chrysler, Inc.
Citizens Utility Board	ISG Riverdale, Inc.
City of Chicago Community Action for Fair Utility Practice	MidAmerican Energy Company
Constellation Energy Commodities Group, Inc.	Midwest Generation EME, LLC
Constellation NewEnergy, Inc.	Northeast Illinois Regional Commuter Railroad Corporation, d/b/a Metra
The Cook County State's Attorney's Office	Peoples Energy Services Corporation
United States Department of Energy	University of Illinois
Direct Energy Services, L.L.C.	Thermal Chicago Corporation
Illinois Industrial Energy Consumers	Coalition of Energy Suppliers

Table 4: Commonwealth Edison Rate Case: *Policy positions*

	<i>ComEd</i>	<i>CUB</i>	<i>ICC Staff</i>	<i>Final Order: ICC Commissioners¹⁸</i>
Rate of return	8.94%	6.69%	7.86%	8.01%
- Return on equity	11.0%	7.75%	10.19%	10.04%
- Return on debt	6.50%	6.23%	6.48%	6.48%
- Debt ratio	45.8%	62.8%	62.8%	57.14%
Rate Base (\$'000)	\$6,186,933	\$5,946,592	\$5,301,687	\$5,521,350
Operating Revenues (\$'000)	\$1,923,215	\$1,733,090	\$1,598,847	\$1,585,997
Revenue Increase (\$'000)	\$337,218	\$155,534	\$21,181	\$8,331

Table 5: Commonwealth Edison Rate Case: *Historical Comparison*

	<i>2003 Rate Case Order</i>	<i>2004 Test Year</i>	<i>ComEd Requested Increase to 2004 Test Year</i>	<i>2006 ICC Final Order</i>	<i>Difference between Final Order and Test Year</i>
Revenues (\$'000)	\$1,507,636	\$1,577,686	\$345,529	\$1,585,997	\$8,311
Operating Expenses (\$'000)	\$1,237,297	\$1,235,546	\$139,102	\$1,238,885	\$3,339
Rate of Return	8.99%	7.07%	1.87%	8.01%	0.94%
Rate Base (\$'000)	\$3,616,663	\$6,185,134	\$1,799	\$5,521,350	(\$663,784)

¹⁸ Illinois Commerce Commission, *No. 05-0597: Final Order* (Springfield, Illinois: Illinois Commerce Commission, 26 July 2006) 306.

Table 6: Return on Equity Rulings for Electric Utilities in 2006

<i>Utility</i>	<i>Regulating State</i>	<i>Authorized ROE</i>
Jersey Central Power & Light Co.	New Jersey	9.55
Kansas Gas & Electric Co.	Kansas	10.00
Pacific Power & Light Co.	Oregon	10.00
Commonwealth Edison Co.	Illinois	10.04
Maine Public Service Co.	Maine	10.20
Cincinnati Gas & Electric Co.	Ohio	10.29
Interstate Power & Light Co.	Minnesota	10.39
Avista Corp.	Washington	10.40
Interstate Power & Light Co.	Iowa	10.40
Kentucky Power Co.	Kentucky	10.50
Northern States Power Co.	Minnesota	10.54
Sierra Pacific Power Co.	Nevada	10.60
Entergy Gulf States	Louisiana	10.65
Oklahoma Gas & Electric Co.	Oklahoma	10.75
Upper Penninsula Power Co.	Michigan	10.75
San Diego Gas & Electric Co.	California	10.79
Detroit Edison Co.	Michigan	11.00
Madison Gas & Electric Co.	Wisconsin	11.00
Northern States Power Co. - WI	Wisconsin	11.00
Wisconsin Public Service Corp.	Wisconsin	11.00
Consumers Energy Co.	Michigan	11.15
Wisconsin Electric Power Co.	Wisconsin	11.20
CLECO Power LLC	Louisiana	11.25
Pacific Gas & Electric Co.	California	11.35
Southern California Edison Co.	California	11.60
Florida Power & Light Co.	Florida	11.75
Progress Energy Florida	Florida	11.75

Table 7: Return on Equity Rulings for Electric Utilities in 2003

<i>Utility</i>	<i>Regulating State</i>	<i>Authorized ROE</i>
Jersey Central Power & Light	New Jersey	9.5
Public Service Electric & Gas	New Jersey	9.75
Rockland Electric Co.	New Jersey	9.75
Maine Public Service Co.	Maine	10.25
United Illuminating Co.	Connecticut	10.45
Pacific Power & Light	Oregon	10.5
Aquila Inc.	Colorado	10.75
Public Service Co. of Colorado	Colorado	10.75
PacifiCorp	Wyoming	10.75
San Diego Gas & Electric Co.	California	10.9
Sierra Pacific Power Co.	California	10.9
Kentucky Power Co.	Kentucky	11
Central Vermont Public Service Corp.	Vermont	11
ENTERGY Gulf States, Inc.	Louisiana	11.1
Interstate Power & Light Co.	Iowa	11.11
Pacific Gas & Electric Co.	California	11.2
Empire District Electric Co.	Oklahoma	11.27
Southern California Edison Co.	California	11.6
Commonwealth Edison Co.	Illinois	11.72
Duke Power	South Carolina	12.03
Cleco Power LLC	Louisiana	12.25
Madison Gas & Electric Co.	Wisconsin	12.3
South Carolina Electric & Gas	South Carolina	12.45
Orange & Rockland Utilities Inc.	New York	12.75

Table 8: SCPSC Commissioners in 2003

<i>Commissioner</i>	<i>Political Affiliation</i>	<i>Prior Profession</i>	<i>Start of Term</i>	<i>Expiry of Term</i>	<i>Majority of General Assembly at Election</i>
Mignon Clyburn	Democrat	Journalist	July 1998	Present	Republican
William Saunders	Democrat	Broadcaster	March 1994	March 2004	Democrat
James Blake Atkins	Democrat	Scientist	February 2000	March 2004	Republican
Randy Mitchell	Democrat	Judge	July 1998	Present	Republican
H. Clay Carruth	Undisclosed	Lawyer	July 1998	March 2004	Republican
Nick Theodore	Democrat	Lt. Governor	July 2002	March 2004	Republican
C. Robert Moseley	Republican	Banker	July 1998	Present	Republican

Table 9: Political Party Control of South Carolina House of Representatives and Senate

<i>Election Year</i>	<i>House</i>		<i>Senate</i>	
	<i>Democrats</i>	<i>Republicans</i>	<i>Democrats</i>	<i>Republicans</i>
2002	51	74	21	25
2000	54	70	22	24
1998	59	64	24	22
1996	53	70	26	20
1992	72	50	32	14