Electing Regulators: The Case of Public Utility Commissioners

Kenneth W. Costello†

Governments presumably institute regulatory systems to serve the interests of the public. Sometimes, however, the interests of individual regulators may diverge from those of the public.¹ For example, because regulated industries typically are better organized than the consumers of their products or services, a regulator may maximize his political support by serving the interests of the regulated industry instead of consumer interests. Pluralist commentators on this regulatory dilemma have suggested that subjecting regulators to greater public accountability would reduce the incentives for such behavior.² They recommend that, since specialized political interests have less influence over the elective process than over appointments, regulators should be elected rather than appointed.³

This Article assesses this recommendation in the context of the electric utility industry, which is regulated in part by state public utility commissions (PUCs). In general, public utility commissioners are appointed by the governor of a state. However, several states have recently considered proposals to institute public elections of utility commissioners.⁴ This legislative activity results primarily from the harsh attacks PUCs have sustained in recent years from competing interest groups. One group argues that, unless PUCs are more responsive to the financial problems of electric utilities, the industry will continue to underinvest in cost-effective

† Senior Economist, Policy Analysis & Research Division, Illinois Commerce Commission. The work performed for this article was conducted as an independent project by the author. This article reflects the views and opinions of the author only and does not necessarily represent those of the Illinois Commerce Commission.

¹ The Stigler-Peltzman model of regulation, for example, views the regulator as a politician who attempts to maximize constituent support. See Stigler, The Theory of Economic Regulation, 2 BELL J. ECON. & MGMT. SCI. 3 (1971); Peltzman, Toward a More General Theory of Regulation, 19 J. L. & ECON. 211 (1976).


⁴ See infra notes 38, 39 and accompanying text. Commissioners currently are elected in nine states: Alabama, Arizona, Georgia, Louisiana, Mississippi, Montana, North Dakota, Oklahoma, and South Dakota. ELECTRICITY CONSUMERS RESOURCE COUNCIL, STATE ELECTRICITY PROFILES 3, 11, 39, 71, 95, 103, 135, 143, 163 (1981).
generating capacity, perhaps resulting in power shortages before 1990. An opposing group argues that PUCs have been unsympathetic to the welfare of ratepayers and have allowed electric utilities “excessive” rate increases. They contend that PUCs have not paid sufficient attention to the prudence of utilities’ expenditures or to whether rapid rate increases inflict too much hardship upon low-income consumers. Recent developments in the electric utility industry, such as costly cancellations of nuclear and coal generating plants, have shaken the financial stability of many utilities and have exacerbated this conflict among competing groups.

The evidence presented in this Article suggests that supplanting appointed PUCs with elected PUCs will not lead to lower electricity prices for consumers, contrary to the belief generally held by supporters of elected PUCs. The first section of the Article briefly reviews previous studies of the commissioner selection process. The second section presents new evidence of the effect of elected commissions on electricity rates. This evidence is based on historical data from 1973 through 1980. The third section attempts to explain why electricity rates generally are lower in states which elect their PUCs than in states which appoint them. It also discusses an additional piece of evidence suggesting the undesirability of electing regulators: the perception of investment houses that public election of PUCs creates an unfavorable regulatory climate.


6. The Department of Energy (DOE) has recently criticized state public utility commissions for providing inadequate rate relief to electric utilities. See ELECTRICITY POLICY PROJECT, U.S. DEPT OF ENERGY, THE FUTURE OF ELECTRIC POWER IN AMERICA: ECONOMIC SUPPLY FOR ECONOMIC GROWTH ES-17-18 (1983) [hereinafter cited as ELECTRICITY POLICY PROJECT]. DOE warns that shortages of generating capacity and higher rates from the operation of economically obsolete power plants may occur because of the inability of utilities to raise adequate capital funding. See id. at ES-21-22.


8. See, e.g., id.


11. This Article, as well as most other studies on this topic, does not address the question of which selection process would better foster economic efficiency. The exception is the Smiley and Greene study, infra note 28, which explicitly examines whether the decisions of elected PUCs better accord with the economic standard of effective regulation than those of appointed PUCs.
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I. Overview of the Literature

Several studies have sought to explain, among other things, why the price of electricity is lower in states with elected commissions than in states with appointed commissions. Most of these studies begin by asking the fundamental question: "Does the election of commissioners result in lower electricity rates to individual groups of ratepayers?" Generally, the next step in such studies is developing a mathematical model employing the different variables that the authors believe affect the price of electricity. These variables usually include the costs of inputs for producing electricity, the various characteristics of the demand for electricity, and the regulatory and political situation.²

Although some of the studies provide weak evidence that the election of commissioners accounts for the lower electricity prices observed in states with elected commissions, the studies are often inconclusive and sometimes contradict each other. A study by Crain and McCormick, using state data from 1967, found that residential electricity prices were twelve percent lower in states with elected commissions when demand and supply conditions were controlled.³ The study also found that elected commissions accounted for lower industrial rates.⁴ Basing their model on the general theory of regulation,⁵ Crain and McCormick treated politicians and producers as one interest group, consumers as a competing interest group, and regulators as a separate competing interest group, with each group pursuing the maximization of its own wealth.⁶ A study by Mann and Primeaux using data from 1979 also produced some evidence that the election of commissioners had a dampening effect on electricity rates.⁷

12. The general model applied in these studies is

\[ P_i = f(CT, DD, REG) \]

where \( P_i \) is the average price for the \( i \)th customer class (e.g., residential); \( CT \) and \( DD \) include the cost and demand determinants of price, respectively; and \( REG \) comprises commission and political characteristics (e.g., term of commissioners, selection process of commissioners) that might affect price. The symbol \( f \) indicates that price is a function of these factors.


14. Id. at 32. In this study, the coefficient of the dummy variable representing the method of commission selection was significant at the 10% level of significance in the residential and industrial price equations, using the two-stage least squares regression results.

The statistical analyst uses the concept of a “percent level of confidence” because he takes only a sampling of the available information in his area of study. When a statement is made at a particular percent level of confidence, it means that if a large number of samples were taken, the statement would be correct in the stated percentage of cases. A variable is said to be significant at a certain level when it does not equal zero at that level of confidence. For a more thorough explanation of confidence levels (and statistical analysis in general), see T. WONNACOTT & R. WONNACOTT, INTRODUCTORY STATISTICS 141-48, 187-93, 297-99 (1972) (discussing “interval estimation” and “hypothesis testing”).

15. The formal development of the general theory of regulation is contained in Peltzman, supra note 1.


17. See P. Mann & W. Primeaux, Regulator Selection and Electricity Prices 16 (1982) (Univer-
Other studies have shown contrary results, however. A study by Pelsoci showed that, for 1975, the election of commissioners may have led to higher residential electricity rates. Moreover, recent studies by Harris and Navarro, and by ICF, Inc., contradict the view that elected commissions significantly restrained rates during the period following the oil embargo.

Other studies have looked at the effects of PUC selection methods on other variables that either directly or indirectly affect electricity rates. These variables include the allowed rate of return on equity, the percentage of requested rate increases allowed, the relative cost of capital, and overall “regulatory effectiveness.” An important study by Hagerman and Ratchford developed a political-economic model to explain differences in the allowed rates of return on equity among electric utilities for the year 1975. The authors included the method of selecting commissioners as an explanatory variable. Their results surprisingly showed that whether or not commissioners are elected does not affect return on equity. This is inconsistent with the conventional wisdom that elected commissioners are responsive to the public interest, i.e., give lower returns.

A study by Gormley examined the effects of administrative and political
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factors on rate case decisions and PUC policies. Gormley applied his "public advocacy" model to utility data to explain differences in the percentage of rate increase requests granted by elected and appointed PUCs. He included the method of selecting commissioners in his model and found that the selection method was not a significant factor in predicting the percentage of rate increases granted by commissions during 1977 and 1978.

Other studies indirectly examining the effect of elected commissions on electricity prices have shown that, in the long run, elected commissions may lead to a "poor regulatory climate" rating by investment houses. This, in turn, can lead to higher rates for electricity consumers. Navarro has developed a model that accounts for the effects of ideological, institutional, and political variables, including the effect of public election of commissioners on regulatory climate. In a study based on 1978 data, Navarro found that a change from an appointed to an elected commission would increase the probability of the investment community's giving a utility an "unfavorable regulatory climate" rating from twenty-one percent to sixty-two percent. Dubin and Navarro later estimated that a shift in the regulatory climate from a more favorable rating to a less favorable one would increase the cost of equity for an average utility by 2.28 percentage points. The major implication of Navarro's studies is that, even if elected commissioners tend to keep electric rates down in the short term, rates may rise more than otherwise in the long term because of the adverse effect of elected regulators on regulatory climate. An unfavorable regulatory climate rating may make it difficult for utilities to obtain

23. See Gormley, Policy, Politics, and Public Utility Regulation, 27 AM. J. POL. SCI. 86 (1983). Gormley's regression model contains the following explanatory variables: grassroots advocacy, proxy advocacy, regulatory resources, political culture, and method of commission selection. Id. at 95. These variables are supposed to affect specific commission policies based on a theory of public advocacy. Id. at 91-92. Gormley uses a sample of 89 electric utilities for which rate case decisions were made during 1977 and 1978. Id. at 94-95.

24. See id. at 95, table 2.

25. See Navarro, Public Utility Commission Regulation: Performance, Determinants, and Energy Policy Impacts, ENERGY J., Apr. 1982, at 119, 123, 133. In addition to the selection method of commissioners, the other political variables are the sources of funding of commissions, the percentage of oil used by utilities to generate electricity, and the length of terms of commissioners. Institutional variables are specified as the salary structure of commissioners, commission qualifications, and commission expenditure level. The ideological variables are represented by a regional dummy variable and the percentage of commissioners who are Democrats. Id. at 125-28.

26. Id. at 133.

the capital necessary for investment in cost-effective generating facilities, or may increase the cost of such capital.

Finally, a study by Smiley and Greene produced results which conflict with the conclusions of the Navarro studies. Their study, based on 1970 data, suggests that electric utilities regulated by elected PUCs enjoy a more favorable regulatory climate than those regulated by appointed PUCs. For example, utilities regulated by elected PUCs tend to have higher market-to-book ratios than their counterparts regulated by appointed commissions.

In summary, past studies of the effects of electing commissioners have produced conflicting results. Some studies provide weak evidence that elected PUCs tend to keep electric rates down, while others reach the opposite conclusion.

II. New Evidence

This section offers new empirical evidence on the economic effect of the PUC selection process. It first presents the results of the author's re-estimation of the Mann-Primeaux, Crain-McCormick, and Pelsoci models using more recent data. The results raise questions about the soundness of some earlier studies because they indicate that the PUC selection method has no effect on electric rates. The section next discusses recent evidence of the effect of the PUC selection process on the structure of electricity rates, that is, the relative prices of electricity to residential, commercial, and industrial customers. This evidence suggests that, contrary to what one might expect, elected commissions do not favor residential customers any more than appointed commissions do.

A. Re-estimating the Models with New Data

Mann and Primeaux observed that "there is some evidence that elected regulators have a constraining effect on electricity rates." A re-estimation of Mann and Primeaux's model with 1980 data, however, produces

28. See Smiley & Greene, Determinants of the Effectiveness of Electric Utility Regulation, 5 RESOURCES & ENERGY 65 (1983). The major part of the study measured the level of effectiveness of regulators in the following areas: setting average rates distant from those of an unregulated monopolist; structuring rates based on marginal costs; and allowing utilities to earn normal profits. Id. at 67-70.

29. See R. Smiley & W. Greene, Determinants of the Effectiveness of Electric Utility Regulation 26-27, table 4 (1978) (Cornell University, Working Paper No. 172). The market-to-book ratio was greater than one for all but two of the 72 utilities studied. See id. Taken together, these results give some support for the inference that elected commissioners allowed utilities to earn above-normal profits to a greater degree than did appointed commissioners (other things held constant).

30. Mann & Primeaux, supra note 17, at 15.
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contrary results. Although the evidence obtained by Mann and Primeaux suggested that the average electricity price for residential customers was directly related to the appointment of commissioners, the regression results using 1980 data (admittedly a smaller sample) indicate that no significant relationship exists between the method of commissioner selection and the average electricity price. Table 1 compares the regression results for the residential average price equation obtained by Mann and Primeaux (column 1) with the re-estimated model using 1980 data (column 2). The t-ratios (in parentheses) for the selection method variable (COMM) show that the method of selection was statistically significant in the original regression, but was not statistically significant in the re-estimation.

31. Thirteen of the 82 utilities selected serve customers in elected states. The sample comprises the large electric utilities in each of 46 states. Nebraska has been excluded from this study because it has no investor-owned utilities. Tennessee has been excluded because it has only one small electric utility subject to state regulation. Virginia and South Carolina have been excluded because their utility commissioners are elected by the state legislature, making it unclear whether these commissioners are elected or appointed. Particular utilities were excluded if they served two or more states with different PUC selection processes. For example, Oklahoma Gas and Electric Company was excluded from the sample even though it is the largest utility serving Oklahoma. The service area of the utility includes part of Arkansas (an appointed state), as well as Oklahoma (an elected state). Finally, some utilities were excluded from the data set because there were not adequate data for their inclusion in the models.

The Mann-Primeaux model is specified as

\[ P_i = \beta_0 + \beta_1 SS + \beta_2 DC + \beta_3 TX + \beta_4 PC + \beta_5 COMM \]

where \( P_i \) = average revenue per kwh for the \( i \)th customer class or the monthly typical bill for electricity; \( SS \) = net electric utility plant; \( DC \) = total distribution expenses per kwh sales; \( TX \) = total tax payments (sum of income tax and other taxes) per kwh sales; \( PC \) = total production expenses per kwh sales; and \( COMM \) = dummy variable representing method of commission selection (0 = elected, 1 = appointed). Mann & Primeaux, supra note 17, at 11-12.

The data for the variables used in the re-estimation of the model came from the following sources: for \( P_i \), see ENERGY INFORMATION ADMINISTRATION, U.S. DEPT OF ENERGY, STATISTICS OF PRIVATELY OWNED ELECTRIC UTILITIES IN THE UNITED STATES 1980 ANNUAL 227-60 (1981) [hereinafter cited as 1980 ANNUAL]; for \( SS \), see id. at 371-470; for \( DC \) and \( PC \), see id. at 227-366; for \( TX \), see id. at 120-87; and for \( COMM \), see STATE ELECTRICITY PROFILES, supra note 4.

The regression results for all of the equations estimated for this article are on file with the Yale Journal on Regulation and can be obtained upon request.

32. In re-running the Mann and Primeaux general model using various electricity price variables (e.g., commercial rates, industrial rates, typical bills), no regression produced a dummy variable coefficient (representing the effect of selection method) that was statistically significant at the 90% level or higher. Furthermore, the coefficient of determination (R²: the proportion of the total variation in the explained variable that is explained by the explanatory variables) does not change at all with the inclusion of the dummy variable in any of the estimated regression equations. Somewhat surprisingly, no problem of multicollinearity (a relationship between two or more explanatory variables) was detected. The exclusion of the dummy variable had little effect on the estimated coefficients and the standard errors of the other explanatory variables in the models. The estimated coefficients and the t-ratios for the average residential revenue per kwh equation excluding the dummy variable, for example, are comparable with those when the dummy variable is included in the equation. A t-ratio is the estimated coefficient divided by its standard deviation, a measure of the extent of variation of the sample data. It can be used to measure the statistical significance of the coefficient and, thus, of the variable.
Re-estimating the model used by Crain and McCormick with data for 1973 and 1980 again reversed the original conclusion. The original study showed that elected commissions had a downward effect on electricity prices for the year 1967. Re-estimation of the model, however, fails to support this conclusion. Table 2 compares the regression results for the residential average price equation obtained by Crain and McCormick (column 1) with those obtained from the modified model using 1973 data (column 2) and 1980 data (column 3). The t-ratio for COMM, using

33. See W. Crain & R. McCormick, supra note 13, at 28. The Crain and McCormick model, as specified in their paper, had serious statistical problems. The main problem was collinearity between their load factor (LF) and the proportion of residential customers (PRORES). The model was thus modified for use in this Article. LF was replaced with a different explanatory variable, RHG (proportion of total generation from hydro sources). The new model achieved stronger statistical results (in a linear form as opposed to a logarithmic form). The modified model retains the reduced form supply and demand character of the original model. It is specified as:

\[ P_1 = f(PINC, RHG, FC, RRC, RG, COMM), \]
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the original model and 1967 data, provides weak support for the claim that elected PUCs were responsible for lower rates. As in the case of the Mann and Primeaux model, however, the new regressions reverse the original conclusion. The t-ratios associated with COMM for both 1973 and 1980 indicate that the method of selecting commissioners had no statistically significant effect on price.

\[ P_i = \text{average revenue per kwh for the } i\text{th customer class}; PINC = \text{per capita personal income (in 1972 dollars); RHG = proportion of total generation from hydro sources; FC = cost of fossil fuel per net kwh; RRC = proportion of average ultimate customers that is residential; RG = net generation per kilowatt of installed generating capacity (nameplate); and COMM = dummy variable representing method of commission selection (0 = elected, 1 = appointed).} \]

The 1973 data for the variables used in the estimation of the modified model came from the following sources: for \( P_i \), see FEDERAL POWER COMMISSION, STATISTICS OF PRIVATELY OWNED ELECTRIC UTILITIES IN THE UNITED STATES 1973, at 401-28 (1974); for RHG, see id. at 701-28; for PINC, see BUREAU OF THE CENSUS, U.S. DEPT OF COMMERCE, STATISTICAL ABSTRACT OF THE UNITED STATES 380, table 611 (95th ed. 1974); for FC, see EDISON ELECTRIC INSTITUTE, STATISTICAL YEAR BOOK OF THE ELECTRIC UTILITY INDUSTRY FOR 1973, at 51, table 43 S (1974); for RRC, see id. at 39, table 30 S; for RG, see id. at 9, 24, tables 4 S and 15 S; and for COMM, see NATIONAL ASS'N OF REGULATORY UTIL. COMM'R, 1977 ANNUAL REPORT ON UTIL. AND CARRIER REGULATION 210-42 (1978) [hereinafter cited as 1977 ANNUAL].

The 1980 data for the variables used in the re-estimation of the model came from the following sources: for \( P_i \), see 1980 ANNUAL, supra note 31, at 227-60; for RHG, see id. at 477-543; for PINC, see BUREAU OF THE CENSUS, U.S. DEPT OF COMMERCE, STATISTICAL ABSTRACT OF THE UNITED STATES 429, table 715 (102nd ed. 1981) [hereinafter cited as ABSTRACT]; for FC, see EDISON ELECTRIC INSTITUTE, STATISTICAL YEAR BOOK OF THE ELECTRIC UTILITY INDUSTRY/1980, at 35, table 26 (1981) [hereinafter cited as YEAR BOOK]; for RRC, see id. at 47, table 42; for RG, see id. at 11, table 4; and for COMM, see STATE ELECTRICITY PROFILES, supra note 4.
TABLE 2
Estimations of the Crain-McCormick Model

<table>
<thead>
<tr>
<th></th>
<th>1967*</th>
<th>1973b</th>
<th>1980</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant Term</td>
<td>.911</td>
<td>-1.67</td>
<td></td>
</tr>
<tr>
<td>PINC</td>
<td>0.037</td>
<td>0.019</td>
<td>0.023</td>
</tr>
<tr>
<td></td>
<td>(0.11)</td>
<td>(1.80)</td>
<td>(1.08)</td>
</tr>
<tr>
<td>RHG (LF)</td>
<td>0.12</td>
<td>-1.28</td>
<td>-3.53</td>
</tr>
<tr>
<td></td>
<td>(-.60)</td>
<td>(-3.91)</td>
<td>(-4.58)</td>
</tr>
<tr>
<td>FC</td>
<td>0.20</td>
<td>1.11</td>
<td>0.557</td>
</tr>
<tr>
<td></td>
<td>(4.61)</td>
<td>(3.40)</td>
<td>(4.66)</td>
</tr>
<tr>
<td>RRC</td>
<td>-2.32</td>
<td>-0.99</td>
<td>6.28</td>
</tr>
<tr>
<td></td>
<td>(-1.25)</td>
<td>(-0.03)</td>
<td>(0.83)</td>
</tr>
<tr>
<td>RG</td>
<td>-0.025</td>
<td>0.053</td>
<td>-0.205</td>
</tr>
<tr>
<td></td>
<td>(-.62)</td>
<td>(1.57)</td>
<td>(-1.15)</td>
</tr>
<tr>
<td>COMM</td>
<td>-0.38</td>
<td>0.093</td>
<td>0.040</td>
</tr>
<tr>
<td></td>
<td>(-1.62)</td>
<td>(0.58)</td>
<td>(0.10)</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>0.44</td>
<td>0.50</td>
<td>0.63</td>
</tr>
<tr>
<td>F Value</td>
<td>5.46</td>
<td>5.7</td>
<td>10.8</td>
</tr>
<tr>
<td>N</td>
<td>50</td>
<td>43</td>
<td>46</td>
</tr>
</tbody>
</table>

\( a \) Variables: per capita personal income in 1972 dollars (PINC); proportion of total generation from hydro sources (RHG); kwh produced divided by net generating capacity (LF); cost of fossil fuel per net kwh (FC); proportion of average ultimate customers that is residential (RRC); net generation per kilowatt of installed generating capacity (nameplate) (RG); and dummy variable representing method of commission selection (0 = elected, 1 = appointed) (COMM). The dependent variable is average revenue per kwh for residential customers. The regression used for column 1 took the natural logarithm of the variables described. RHG was used in place of LF in columns 2 and 3 for reasons explained in note 33.

\( b \) The 1973 data excluded those states which did not regulate electric utilities at the state level (Minnesota, South Dakota, and Texas), and Nebraska, Tennessee, South Carolina and Virginia. The last four states that were excluded were also omitted from the 1980 sample, either because they had no privately owned utilities (Nebraska), one small privately owned utility (Tennessee) or because the commissioners were elected by the legislature (South Carolina, Virginia).

\( c \) Numbers in parentheses are t-ratios.

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Finally, re-estimation of the model developed by Pelsoci,\textsuperscript{34} using 1980 data,\textsuperscript{38} also suggests that the method of selection had no discernable effect on the level of rates over different historical periods. Table 3 compares the regression results for the residential average price equation obtained by Pelsoci (column 1) with those for the re-estimation using 1980 data (column 2). The t-ratios for the variable COMM show that Pelsoci’s original conclusion continues to hold: The PUC selection method has no statistically significant effect on rates.

\textsuperscript{34} See Pelsoci, \textit{supra} note 18, at 107. The Pelsoci model is specified as:

\[
P_i = f(PINC, FC, CS, SU, PP, CA, COMM),
\]

where \(P_i\) = average revenue per kwh for the \(i\)th customer class (only residential rates examined); \(PINC\) = per capita personal income (in 1972 dollars); \(FC\) = cost of fossil fuel per net kwh; \(CS\) = number of commissioners; \(SU\) = number of commission staff per privately-owned utility; \(PP\) = proportion of total electricity sales made by publicly-owned utilities; \(CA\) = years since last major reorganization of PUC (or age of commission); and \(COMM\) = dummy variable representing method of selection (0 = elected, 1 = appointed). \textit{Id.}

The data for the variables used in the re-estimation of the model came from the following sources: for \(P_i\), see 1980 \textit{ANNUAL}, \textit{supra} note 31, at 227-60; for \(PINC\), see \textit{ABSTRACT}, \textit{supra} note 33, at 429, table 715; for \(FC\), see \textit{YEAR BOOK}, \textit{supra} note 33, at 35, table 26; for \(PP\), see \textit{id.} at 46-47, tables 41-42; for \(CS\), see \textit{SALOMON BROTHERS, INC., ELECTRIC UTILITY REGULATION—SEMIANNUAL REVIEW} 12-21 (Feb. 11, 1983); for \(CA\), see 1977 \textit{ANNUAL} \textit{supra} note 33, at 210-42; and for \(COMM\), see \textit{STATE ELECTRICITY PROFILES}, \textit{supra} note 4.

\textsuperscript{35} No published source containing accurate data on the number of professional and other employees disaggregated by public utility and motor carrier responsibilities was found by the author. For this reason, the SU variable had to be dropped from the re-estimation.
### TABLE 3
Estimations of the Pelsoci Model\(^a\)

<table>
<thead>
<tr>
<th></th>
<th>1975(^*)</th>
<th>1980</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant Term</td>
<td>0.105</td>
<td>3.53</td>
</tr>
<tr>
<td>PINC</td>
<td>0.435 (2.59)(^b)</td>
<td>0.474 (1.80)</td>
</tr>
<tr>
<td>FC</td>
<td>0.327 (2.09)</td>
<td>0.348 (2.28)</td>
</tr>
<tr>
<td>CS</td>
<td>0.162 (2.06)</td>
<td>0.035 (0.24)</td>
</tr>
<tr>
<td>SU(^c)</td>
<td>-0.005 (-2.40)</td>
<td>—</td>
</tr>
<tr>
<td>PP</td>
<td>-0.013 (-2.21)</td>
<td>-0.029 (-2.78)</td>
</tr>
<tr>
<td>CA</td>
<td>0.009 (1.55)</td>
<td>-0.013 (-1.36)</td>
</tr>
<tr>
<td>COMM</td>
<td>0.225 (0.83)</td>
<td>0.350 (0.72)</td>
</tr>
<tr>
<td>(R^2) Including COMM</td>
<td>0.54</td>
<td>0.40</td>
</tr>
<tr>
<td>(R^2) Excluding COMM</td>
<td>—</td>
<td>0.39</td>
</tr>
<tr>
<td>F Value</td>
<td>6.5</td>
<td>4.4</td>
</tr>
<tr>
<td>N</td>
<td>47</td>
<td>46</td>
</tr>
</tbody>
</table>

\(^a\)Variables: per capita personal income in 1972 dollars (PINC); cost of fossil fuel per net kwh (FC); number of commissioners (CS); number of commission staff per privately-owned utility (SU); proportion of total electricity sales made by publicly-owned utilities (PP); years since last major reorganization of PUC (or age of commission) (CA); and dummy variable representing method of selection (0 = elected, 1 = appointed) (COMM). The dependent variable is average revenue per kwh for residential customers.

\(^b\)Numbers in parentheses are t-ratios.

\(^c\)Staff sizes of commissions broken down by public utility and motor carrier responsibilities are not publicly available for all of the states.


In sum, the regression results obtained from re-estimating all three models with new data fail to support the hypothesis that elected commissioners constrain the level of electricity rates. Some limited evidence for 1980 even indicates that elected commissioners may have caused an increase in the level of electricity rates.\(^{36}\)

36. In most of the other regression results, the sign of the dummy variable (i.e. the method of
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B. Do Elected Commissions Favor Residential Customers?

Some who believe that the method of selection affects rates think that one way elected PUCs provide lower rates to residential customers is by discriminating against commercial and industrial consumers. Industrial users, in particular, have strongly opposed the election of commissioners, fearing that elected commissioners will face strong political incentives to establish cross-subsidized rates favoring residential customers. For example, a petition drive in Arkansas to include a constitutional amendment requiring the election of public utility commissioners on the November 1982 ballot was defeated in a court action brought in part by industrial electricity customers. These industrial consumers evidently believed they would suffer economic losses if the commissioners were elected rather than appointed.

Recent evidence, in addition to the regression results discussed above, suggests that such fears are unjustified. Table 4 shows that, from 1973 to 1980, electricity prices to all three customer classes rose at similar rates in states where commissioners are elected and in states where they are appointed. For each category of states, the prices to industrial customers had a materially higher growth rate than the prices to residential and commercial customers. These data suggest three conclusions. First, elected commissioners do not discriminate against industrial and commercial customers any more than appointed commissioners do. Second, elected and appointed PUCs may both discriminate against industrial users in favor of commercial and residential users. Finally, since the early 1970's, elected PUCs have been no more successful than their appointed counterparts in holding down electricity prices to residential customers.

(Selection) coefficient was negative (similar to the result shown in Table 1, column 2), indicating that elected commissions as a group may have exerted an upward pressure on electricity rates in 1980.

37. See Industrial Users Wary of Electric Regulatory Reform, Energy User News, Apr. 25, 1983, at 18: "Industrial users oppose elected commissions because of the highly politicized nature of regulation under that method of selection. This is not to say that appointed commissions are apolitical; they just don't seem to be as preoccupied with politics." (comments of Jay B. Kennedy, Executive Director of Electricity Consumers Resource Council).


39. In November 1982, a referendum to elect public utility commissioners was placed on the ballots in Michigan and Ohio. The electorate in each state voted against the election of commissioners. Voters Reject Elected Commissions, Split on Pass-Alongs, Consumer Advocacy, Electrical Wk., Nov. 8, 1982, at 1-2. The voting results in Michigan and Ohio show that consumers do not necessarily favor regulation that would supposedly favor them in the short-term at the expense of utility investors. Consumers' preferences may be such that they do not favor "rate suppressive" policies by commissions, whether they are appointed or elected.

40. The data, however, are far from conclusive on this point. For example, the higher rate of growth in industrial prices may reflect changing cost conditions that affect industrial users more than others. The data in the table were produced without controlling for these factors.
### TABLE 4

Growth Rates of Revenue Per KWH for the Period 1973-1980*

<table>
<thead>
<tr>
<th></th>
<th>Elected 1973</th>
<th>Growth Rate (Average Annual)</th>
<th>Appointed 1973</th>
<th>Growth Rate (Average Annual)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Residential Revenue</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per KWH (¢/KWH)</td>
<td>2.31</td>
<td>4.58</td>
<td>2.62</td>
<td>5.39</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10.3%</td>
<td>10.9%</td>
<td></td>
</tr>
<tr>
<td>Average Commercial Revenue</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per KWH (¢/KWH)</td>
<td>2.35</td>
<td>4.65</td>
<td>2.50</td>
<td>5.30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10.2</td>
<td>11.3</td>
<td></td>
</tr>
<tr>
<td>Average Industrial Revenue</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per KWH (¢/KWH)</td>
<td>1.26</td>
<td>3.19</td>
<td>1.40</td>
<td>3.79</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14.2</td>
<td>15.3</td>
<td></td>
</tr>
</tbody>
</table>


Additional evidence, presented in Tables 5 and 6, shows that states with elected and appointed PUCs had similar rate structures for the years 1973 and 1980. In light of the arguments made by industrial electricity customers, one might expect lower ratios of residential to commercial and industrial rate levels in states with elected PUCs. Data for investor-owned electric utilities (Table 5) appear to confirm this expectation, with the exception that the 1980 average ratio of residential to industrial rates was higher in states with elected PUCs. However, the difference in the mean ratios has statistical significance (at the ninety-five percent level) only for the 1973 ratio of residential to commercial average revenue.** A comparison of typical bills for the residential and industrial customers of seventy-two electric utilities (Table 6) shows that, although the rate structure is more favorable to the residential class in states with elected commissioners, the differences in the average ratios only show statistical significance (at the ninety percent level) for the large industrial (400,000 kwh - 1000 kw) and small residential (250 kwh) comparison.

---

41. The 1980 average ratios for the group of 82 electric utilities are comparable to those calculated from state data: the mean residential/commercial ratios were 0.987 and 1.023 for the utilities regulated by elected and appointed commissions, respectively; the residential/industrial ratios were 1.462 and 1.419 for the utilities regulated by elected and appointed commissions, respectively. None of the ratios was statistically significant at the 95% or 90% levels. See YEAR BOOK, supra note 33, at 47, 60, tables 42, 60.
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### TABLE 5

Ratios of Average Revenue Per KWH

<table>
<thead>
<tr>
<th>Year</th>
<th>Selection Method</th>
<th>Number of States(^a)</th>
<th>Mean Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>RESIDENTIAL AND COMMERCIAL</td>
</tr>
<tr>
<td>1973</td>
<td>Elected</td>
<td>9</td>
<td>0.987</td>
</tr>
<tr>
<td></td>
<td>Appointed</td>
<td>34</td>
<td>1.057</td>
</tr>
<tr>
<td>1980</td>
<td>Elected</td>
<td>9</td>
<td>0.994</td>
</tr>
<tr>
<td></td>
<td>Appointed</td>
<td>37</td>
<td>1.022</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RESIDENTIAL AND INDUSTRIAL</td>
</tr>
<tr>
<td>1973</td>
<td>Elected</td>
<td>9</td>
<td>1.898</td>
</tr>
<tr>
<td></td>
<td>Appointed</td>
<td>34</td>
<td>1.933</td>
</tr>
<tr>
<td>1980</td>
<td>Elected</td>
<td>9</td>
<td>1.493</td>
</tr>
<tr>
<td></td>
<td>Appointed</td>
<td>37</td>
<td>1.451</td>
</tr>
</tbody>
</table>

\(^a\)1973 data excludes Minnesota, South Dakota and Texas (see *, TABLE 4). Florida was classified as an elected state for 1973.

**Sources:** Edison Electric Institute, Statistical Year Book of the Electric Utility Industry for 1973 at 34, 46, tables 235 and 375 (1974); Edison Electric Institute, Statistical Year Book of the Electric Utility Industry/1980 at 47, 60, tables 42, 60 (1981).

### TABLE 6

Ratios of Industrial to Residential Typical Monthly Bills*

<table>
<thead>
<tr>
<th>Year</th>
<th>Selection Method</th>
<th>Number of Utilities</th>
<th>Mean Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Large Industrial (400,000 KWH—1000 KW) and Small Residential (250 KWH)</td>
<td></td>
</tr>
<tr>
<td>1980</td>
<td>Elected</td>
<td>12</td>
<td>882.0</td>
</tr>
<tr>
<td></td>
<td>Appointed</td>
<td>60</td>
<td>998.0</td>
</tr>
<tr>
<td></td>
<td>Large Industrial (400,000 KWH—1000 KW) and Medium Residential (500 KWH)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1980</td>
<td>Elected</td>
<td>12</td>
<td>508.5</td>
</tr>
<tr>
<td></td>
<td>Appointed</td>
<td>60</td>
<td>562.6</td>
</tr>
<tr>
<td></td>
<td>Large Industrial (400,000 KWH—1000 KW) and Large Residential (1000 KWH)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1980</td>
<td>Elected</td>
<td>12</td>
<td>292.3</td>
</tr>
<tr>
<td></td>
<td>Appointed</td>
<td>60</td>
<td>322.4</td>
</tr>
<tr>
<td></td>
<td>Small Industrial (60,000 KWH—150 KW) and Small Residential (250 KWH)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1980</td>
<td>Elected</td>
<td>12</td>
<td>154.7</td>
</tr>
<tr>
<td></td>
<td>Appointed</td>
<td>60</td>
<td>162.4</td>
</tr>
<tr>
<td></td>
<td>Small Industrial (60,000 KWH—150 KW) and Medium Residential (500 KWH)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1980</td>
<td>Elected</td>
<td>12</td>
<td>89.2</td>
</tr>
<tr>
<td></td>
<td>Appointed</td>
<td>60</td>
<td>91.3</td>
</tr>
</tbody>
</table>

*Typical monthly electric bills are not reported for the electric utilities which do not serve any city of 50,000 population or more. Typical bills that were selected are those published for the largest city served by each utility.

Furthermore, the re-estimation of the Mann-Primeaux and the Crain-McCormick models shows that the commission selection method had no effect on the price of electricity for any consumer classes. If electing PUCs has no effect on industrial, commercial, or residential electricity rates, then it is obvious that elected PUCs have not structured rates in favor of residential consumers any more than their appointed counterparts have.

There are two likely explanations for this result. First, contrary to popular belief, elected PUCs may not be more willing to redistribute wealth from utility stockholders to customers, even if they had the discretion to do so. Second, federal and state statutes and judicial interpretations of those statutes may confront the elected PUCs with constraints and incentive structures similar to those faced by their appointed counterparts.

The evidence, therefore, does not lend much support to the hypothesis that elected PUCs establish rate structures which are significantly different from those established by appointed PUCs. Indeed, it may be that PUCs, whether elected or appointed, play a passive role in the determination of rate structures.

III. Explanations

The evidence presented in the preceding section strongly suggests that the method of commissioner selection has no effect on residential electricity rates. It also leads to two additional questions. The first is why we observe lower electricity rates in states with elected commissions than in states with appointed commissions. A second, related question is why the

42. See supra note 36 and accompanying text.
43. See infra text accompanying note 68 for a discussion of the financial pressures on elected officials.
44. See, e.g. Bluefield Water Works & Improvement Co. v. Pub. Serv. Comm. of W. Va., 262 U.S. 679 (1923) (establishing criteria to guide PUCs in setting a fair rate of return); see also Public Utility Regulatory Policies Act, 16 U.S.C. §§ 2611-2627 (1978), which requires PUCs to consider, and adopt if found appropriate, 11 ratemaking and regulatory standards for improving energy and utility efficiency. In 14 states (two of which have elected PUCs) PUCs are prohibited from allowing any construction work in progress (CWIP) in the rate base. See SALOMON BROTHERS, INC., supra note 34, at 12-21.

A final possibility is that, during the time period considered, the increased electricity prices were predominantly caused by certain market conditions unrelated to the selection method of PUCs. See ELECTRICITY POLICY PROJECT, supra note 6, at 5-3. These market conditions (including inflation) might obscure any effect that the PUC selection method might have on the rate structure. However, these conditions would not obscure such an effect if the data were subjected to regression analysis, as in the preceding section. See supra text accompanying notes 31-36. Thus, this explanation for the data is probably incorrect.

45. One traditional hypothesis is that elected PUCs grant a smaller percentage of rate increase requests than do appointed PUCs. Empirical evidence supports this theory. A sample of 291 electric utility rate cases (representing the cases involving the sample of 82 utilities studied in this article) decided by PUCs during the period from 1977 to 1982 (45 of which were in states with elected PUCs), reveals a mean percentage (that is, increase granted as a fraction of increase requested) of 64.2% for appointed PUCs and 51.6% for elected PUCs. The amount of increase granted is that level
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investment community's unfavorable ratings do not appear to exert upward pressure on rates in states with elected PUCs.

A. The Rate Differential

The answer to the first question seems to lie in higher fuel costs, distribution costs, and taxes in the states with appointed PUCs. The average 1980 steam power production cost per kwh was roughly fifty-three percent higher for the electric utilities regulated by appointed PUCs.46 A review of fuel costs for December 1980 showed that these utilities pay ten percent and twenty percent more for coal and natural gas, respectively.47 In addition, the states with elected PUCs, on average, are more favorably located near coal-producing regions.48 By contrast, electric utilities in states with appointed PUCs generate a much higher percentage of their electricity with oil-fired plants.49 Oil costs were more than 300% higher than coal costs in 1980.50

Utilities located in states with appointed PUCs also face higher distribution costs and taxes. In 1980, the average total production and distribution expenses for the sample of eighty-two electric utilities were 3.17 cents/kwh in the states with elected PUCs and 2.55 cents/kwh in the states with appointed PUCs—a cost differential of 0.62 cents/kwh.51 At

designated in a commission's original rate order. Increases specified in final orders, pursuant to a judicial remand of a commission's rate case order, are not included in the calculations. The difference in means is statistically significant at the 95% level. The data in the sample came from Utility Industry, Quarterly Regulatory Reports, issued by Merrill Lynch, Pierce, Fenner & Smith, Inc., during the years 1977 to 1982.

The question of whether the higher percentage can be attributed solely to the election of commissioners requires further examination. In fact, utilities regulated by elected PUCs may have asked for larger rate increases than utilities regulated by appointed PUCs (holding other things constant), anticipating that the PUC would grant them a smaller percentage of their request. The fact that actual rate increases granted since 1973, as shown earlier, were similar for the two types of PUCs, suggests that this strategic behavior on the part of utilities regulated by elected PUCs may well occur. This factor could explain the observed differential in the percentage of the requested rate relief granted.

46. See 1980 ANNUAL, supra note 31, at 265-366. Steam power production expense is mostly made up of fossil fuel costs; however, steam power maintenance expenses are also included in the measurement of steam fuel cost. The data were obtained for the 82 electric utilities in the sample used for this article.


48. See EXECUTIVE OFFICE OF THE PRESIDENT COUNCIL ON WAGE AND PRICE STABILITY, A STUDY OF COAL PRICES 67 (Mar. 1976) (states with elected commissions are located near either the western coal reserves or the Appalachian coal reserves).

49. See ELECTRIC POWER MONTHLY, supra note 47, at 103-08, tables 64-69. The average percentage of total generation from oil-fired power plants (for Dec. 1980) was 2.9% and 20.3% for the electric utilities located in the elected and appointed states, respectively.

50. See id. at 103, 105, tables 64, 66. These costs are measured in cents per unit of net generating capacity.

the same time, the differences in average rates for electric utilities located in states with appointed PUCs and those located in states with elected PUCs were 0.68 cents/kwh, 0.48 cents/kwh and 0.63 cents/kwh for the residential, commercial, and industrial classes, respectively. The rate differentials, then, are very similar to the cost differential. It thus appears that the lower average electric rates in the states with elected PUCs result from more favorable cost conditions rather than from the regulatory activities of the elected PUCs.

B. Perceptions of the Regulatory Climate

An additional puzzle arises from the fact that cost differences seem to explain completely the differences in rates between states with elected PUCs and states with appointed PUCs. That fact appears inconsistent with evidence that the regulatory climate under elected PUCs is less favorable than that under appointed PUCs. An unfavorable regulatory climate often coincides with higher costs of capital, which should be reflected in a higher price for electricity. The present discussion first describes the criteria that investment houses use to categorize regulatory climates. It then suggests ways to resolve the apparent conflict between the evidence of an unfavorable regulatory climate in states with elected PUCs and the conclusion of Section II that the method of PUC selection has no effect on utility rates.

The investment community generally regards elected PUCs with some suspicion. Most states with elected PUCs fall within the "unfavorable regulatory climate" category of the investment house classifications. The 1982 rating of PUCs by Salomon Brothers, shown in Table 7, illustrates this categorization: Six out of the nine states with elected PUCs received unfavorable ratings, whereas only three out of the thirty-six states with appointed PUCs received such a low rating.

52. See id. The average rates to the different classes of customers were also calculated from the sample of 82 electric utilities.

53. See supra note 26 and accompanying text.

54. See supra note 27 and accompanying text.

55. This classification is based on Merrill Lynch, Salomon Brothers, and Dubin-Navarro composite regulatory climate rankings. See MERRILL LYNCH, PIERCE, FENNER & SMITH, INC., UTILITY INDUSTRY—OPINIONS ON REGULATION (Sept. 1982); SALOMON BROTHERS, INC., ELECTRIC UTILITY REGULATION (Aug. 16, 1982); Dubin & Navarro, supra note 27, at 144, table 7-1.
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TABLE 7

Regulatory Climate Rankings of Public Utility Commissions\(^{a}\)

<table>
<thead>
<tr>
<th>Category</th>
<th>States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Favorable</td>
<td>Indiana, Texas, Utah, Florida, North Carolina, Wisconsin, California, Hawaii, Kentucky, New Mexico, New York, Ohio</td>
</tr>
<tr>
<td>Average</td>
<td>Arizona (E), Colorado, Connecticut, Delaware, Illinois, Nevada, New Jersey, Oregon, Vermont, Washington, Arkansas, Kansas, Maryland, Massachusetts, Minnesota, New Hampshire, Oklahoma (E), South Carolina(^{b}), Virginia(^{b}), Wyoming, Idaho, Iowa, Maine, Louisiana (E), Michigan, Pennsylvania</td>
</tr>
<tr>
<td>Unfavorable</td>
<td>Georgia (E), Mississippi (E), Montana (E), North Dakota (E), Rhode Island, South Dakota (E), West Virginia, Alabama (E), Missouri</td>
</tr>
</tbody>
</table>

\(^{a}\)An (E) after a state indicates that PUCs in that state are elected. PUCs in all other states are appointed.

\(^{b}\)In South Carolina and Virginia, the legislature elects commissioners, thus making the classification of selection method unclear.

SOURCE: SALOMON BROTHERS, INC., ELECTRIC UTILITY REGULATION 5, figure 4 (Aug. 16, 1982).

Given the unfavorable ratings, one wonders what specific types of policies and decisions by elected PUCs cause investment research firms to view the regulatory climate in those states as generally unfavorable. The criteria used by the investment houses to rank a regulatory climate include the level of allowed rate of return on equity, the type of test year used—i.e., future or historical—to calculate revenue requirements, the inclusion of construction work in progress in the rate base, the accounting treatment of deferred taxes and investment tax credits, the existence of fuel adjustment clauses, and the lapse of time between a rate filing and a rate order decision (i.e., "regulatory lag").\(^{56}\) These criteria are weighed subjectively to determine the "quality" and predictability of earnings. For example, Merrill Lynch expressed concerns about several aspects of recent

\(^{56}\) A simple decisional model of a PUC's rate determination would look like this:

\[
\text{Revenue Requirement} = \text{Operating Costs} + (\text{Rate Base} \times \text{Fair Return})
\]

The revenue requirement is what the commission finds the utility needs. A utility's needs include an ability to cover costs as well as the ability to earn a fair profit. Operating costs include such things as labor, fuel, materials, and current depreciation expense. The rate base is the amount that the commission feels is the appropriate value for capital committed to the utility service. Fair return is the rate of return that the commission has determined will yield investors in the utility a reasonable but not monopolistic profit. Weiss, State Regulation of Public Utilities and Marginal-cost Pricing, in CASE STUDIES IN REGULATION 262, 265 (L. Weiss & M. Klass eds. 1981).

The factors listed in the text can have a significant effect on profitability. Using a future rather than a historical test year for determining operating costs increases the revenue requirement and thereby increases rates. Including construction work in progress (CWIP) produces the same result. In addition, fuel adjustment clauses allow rates to rise automatically. See id. at 265-270.

Obviously, the PUCs have to make several subjective judgments in making a rate increase decision. Because the judgments are subjective, they permit criticism from the investment community, resulting in the rankings for regulatory climate.
rate case decisions by elected commissions. These included the failure to recognize a completed plant in the rate base, the allowance of below average returns on equity, the influence of political factors in rate case orders, and the unpredictability resulting from the necessity of resorting to court action to win many of the rate increases. In summary, the general impression of investment analysts is that elected PUCs are more unpredictable and allow lower rates of return on equity.

An examination of individual factors used by investment houses to measure the regulatory climate of PUCs provides some explanation for the poor ratings of elected commissions. For example, the average allowed rate of return on equity (using a sample of 291 electric rate cases since 1977) was higher to a statistically significant degree (at the ninety-five percent level) in states with appointed PUCs: 14.51 percent for the states with appointed PUCs compared with 13.92 percent for the states with elected PUCs.

If, as suggested by these data, the regulatory climate is more unfavorable in states with elected PUCs, one would expect the cost of capital to be higher in those states, ceteris paribus. In fact, the studies by Dubin and Navarro conclude that an unfavorable rating would cause a significant increase in the cost of capital. Credit scores calculated by Salomon Brothers as of June 30, 1982, tend to confirm Dubin and Navarro’s conclusion. The average credit standing of a sample of fifty-three electric utilities regulated by appointed PUCs was higher to a statistically significant degree (at the ninety-five percent level) than that of a group of ten utilities regulated by elected PUCs.

It thus would appear that the unfavorable regulatory climate should, in

57. See MERRILL LYNCH, PIERCE, FENNER & SMITH, INC., QUARTERLY REGULATORY REPORTS (Dec. 1982).
58. But see Hagerman & Ratchford, supra note 21, at 54.
59. See MERRILL LYNCH, PIERCE, FENNER & SMITH, INC., supra note 57, at 9-32.
60. See MERRILL LYNCH, PIERCE, FENNER & SMITH, INC., UTILITY INDUSTRY, QUARTERLY
REGULATORY REPORTS, supra note 45.
61. In their “Summary and Conclusions” section Dubin and Navarro state:
Using a utility’s M/B [market-to-book] ratio as a measure of its cost of equity capital, we
find conclusive evidence that an unfavorable regulatory climate (from an investor’s point of
view) substantially increases the cost of equity capital. Our estimates show the M/B ratio falls
8 points and the cost of equity capital increases 228 basis points for the otherwise average
utility which moves from a more- to a less-favorable regulatory climate.
A complementary analysis of the effect of regulatory climate on bond ratings suggests that
moving the otherwise average utility from a very favorable to an unfavorable regulatory cli-
mate results in a bond derating of several steps.
Dubin & Navarro, supra note 27, at 160.
62. See SALOMON BROTHERS, INC., ELECTRIC UTILITY CREDIT AND BOND RATINGS (Oct. 14,
1982). Credit scores are determined using multivariate discriminant analysis. The credit standing
reflects the financial strength of an individual utility and provides a measure for the risk to the bond-
holder. It takes into account such factors as interest coverage, quality of earnings, and projected cash
flow.

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the long run, result in higher rates because of higher capital costs. This extra cost, however, does not appear with any consistency in the regression results.

Several possible answers to this paradox come to mind. First, the increased cost of capital actually may have been incorporated in electricity rates. If this were true, the difference in production and distribution costs between states with elected and appointed PUCs should be larger than the difference between their rates. The cost differential and the rate differential match very well, however, suggesting that any rate increase due to increased capital costs is not large enough to be apparent in the statistical analysis.

Second, the "long run" may not have arrived. If utilities regulated by elected PUCs have not had to raise substantial amounts of outside capital, then the increased cost of capital would not appear in their rates. This explanation probably is not correct, though, because utilities relied heavily on the capital markets in the early 1970's. A third and more plausible possibility, somewhat related to the second, is that the elected PUCs are aware of the higher capital costs faced by their utilities, but have deferred the ultimate effect of these increased costs by not permitting rate increases. Under this scenario, the elected PUCs eventually will have to allow recognition of these cost increases in electric rates; the only alternative will be bankruptcy for the affected utilities.

A final possibility is that the investment analysts are wrong, that is, states with elected PUCs may not have genuinely unfavorable regulatory climates. This explanation is also plausible because the evidence on the effect of the PUC selection process on the rate of return on equity—a major factor in determining the favorableness of the regulatory climate—is not clear. Thus, although there are plausible explanations, it is impossible to determine with certainty why the negative view of the investment community toward elected PUCs is not reflected in the data.

Conclusion

This Article initially examined whether the historical evidence supports the proposition that election of state public utility commissioners leads to

63. See supra text accompanying notes 51-52.
64. The initial impact of the change to an unfavorable regulatory climate is absorbed by the holders of equity capital at the time of the change.
66. Compare Hagerman & Ratchford, supra note 21, at 54 (whether or not commissioners are elected does not affect the allowed return on equity) with supra text accompanying notes 58-59 (citing elected commissions for below average returns on equity) and supra text accompanying note 27 (unfavorable regulatory climate associated with low return on equity).
lower electricity prices. Some of the studies reviewed in Section I provided weak evidence that elected PUCs do tend to produce lower electricity prices. Re-estimation of the models used in these earlier studies using more recent data, however, reinforces the findings of other studies which reached the opposite conclusion. The latter studies showed that demand and supply conditions, rather than the process for selecting commissioners, fully explain the differences in electricity prices between states where commissioners are elected and states where they are appointed.

Although the evidence presented here leaves several unanswered questions, it seriously undermines the contentions of those who favor elected PUCs on the grounds that they improve consumer welfare. It suggests that elected commissioners may not support policies that are in the interest of small ratepayers. The intense pressures placed on legislatures and regulatory agencies by producers and other groups with large financial interests in regulatory outcomes may partly explain why the method of selecting commissioners has little or no effect on electricity prices. For example, the electric utility industry may contribute large amounts of money to election campaigns and give other support to commissioners sympathetic to its economic interests. Moreover, the evidence also shows that rate structures are similar in the two groups of states. Elected PUCs do not appear to have improved the economic welfare of residential customers at the expense of other consumer classes.

In summary, it probably makes little difference to the average ratepayer whether a PUC is elected or appointed. If anything, elected commissions may cause electricity rates to rise in the long run because they tend to create at least the appearance of an unfavorable regulatory climate. Without other reasons for changing the method of selecting regulators, this evidence argues for maintaining the status quo. Any change would entail substantial implementation costs—including the cost of establishing elec-

67. First, the discrepancy between the results obtained from the new data and the original results obtained by Mann and Primeaux, and Crain and McCormick is puzzling. In addition, there is a possibility that the method of selecting commissioners affects non-price attributes of electricity service, such as dependability. A more complete explanation for the unfavorable regulatory climate in states with elected PUCs also is needed.


69. In 1978, during the controversy over changing the Florida Public Utility Commission from an elected body to an appointed one, proponents of an appointed commission argued that utilities had heavily funded campaigns for the election of commissioners. See C. Radatz, Public Service Commissions Today 12 (Jan. 1979) (paper prepared for the Wisconsin Legislative Reference Bureau).

Former Governor Askew of Florida supported an appointed commission because he felt it was "...necessary to maintain orderly economic growth patterns for the state and to avoid the instability of elected commissions that in the future might stoop to the demagoguery of pandering to one or another segment of the society." Gov. Askew Manages Revamp of PSC—Expands It and Makes It Appointive, Electrical Wk., June 19, 1978, at 5.
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...tion procedures, the cost of running the elections, and the cost of election campaigns—without producing any apparent benefits.