THE GOVERNANCE OF TRANSMISSION OPERATORS

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I. INTRODUCTION

As power markets expand, insular transmission systems have become increasingly incompatible with competition. Regional grids with open-access tariffs and comprehensive congestion management will likely dominate electricity's future. Beyond a growing consensus on regionalism lies controversy over the form of the providing organization. On the two sides are proponents of nonprofit independent system operators (ISOs) that will control utility-owned transmission assets and proponents of regulated corporate entities (Transcos) that will own or lease the lines. Each side hopes to win the debate by repeating a single theme. The Transco's friends believe that a profit motive will lead it to operate with greater productive efficiency than an ISO. Its opponents see in the same motive an incentive to exercise market power that is lacking in the nonprofit ISO.[1]

Both viewpoints are poor guides to policy. The evidence on efficiency of public and private utilities in the United States is mixed at best, and of little relevance for predicting the efficiency of hitherto unseen transmission specialists operating in newly competitive markets. Discussions of profit also mislead, because both the ISO and the Transco are for-profit organizations, whose decisions are made by individuals with clear and substantial financial interests. The fact that the ISO's books show zero profit says nothing about the profits of those organizations whose votes determine its policies. Both the Transco and the ISO operate under governing boards, with one elected by shareholders and the other chosen by "stakeholders" with their own economic agendas.[2] An ISO cannot be

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1. *Compare* Frank McCamant et al., *Uncrossing the Wires; Transmission in a Restructured Market*, 12 ELEC. J. 24 (1999); Richard J. Pierce, Jr., *Why FERC Must Mandate Efficiently Structured Regional ISO's—Now!*, 12 ELEC. J. 49 (1999); Joshua Z. Rokach, *Transcos; How FERC Can Lend a Hand*, 12 ELEC. J. 64 (1999); Curt L. Hebert, Jr., *The Quest for an Inventive Utility Regulatory Agenda*, 19 ENERGY L.J. 1 (1998), Stephen Angle & George Cannon, Jr., *Independent Transmission Companies: The For-Profit Alternative in Competitive Electric Markets*, 19 ENERGY L.J. 229 (1998).

2. The range of existing and proposed governance structures are extensive. Summaries appear in JAMES BARKER, JR. ET AL., GOVERNANCE AND REGULATION OF POWER POOLS AND SYSTEM OPERATORS, WORLD BANK TECHNICAL PAPER NO. 382 (1997); and WILLIAM W. HOGAN ET AL., GOVERNANCE STRUCTURES FOR AN INDEPENDENT SYSTEM OPERATOR (ISO), HARVARD ELECTRICITY POLICY GROUP BACKGROUND PAPER (June 6, 1996).

In the case of the affiliated Transco proposed by Entergy Services, Inc., a slate of potential directors will be chosen by an executive search firm, from which the member companies or a selection committee of market participants will select seven. *Petition of Entergy Servs., Inc. for Declaratory Order Regarding Compliance of Transco Proposal with Applicable ISO Principles*, No. EL99-57-000, at 22 (April 5, 1999) [herein-

analogized to a charity hospital, governed by volunteers who want little more than social status in return for their effort.

The corporate form of business dominates most of the world's economies primarily because it is governable. The interests of its stockholders are denominated in shares with equal voting power and equal claims to the firm's earnings. Shareholders may differ on strategy, but the enforced uniformity of their interests renders useless the formation of voting blocs whose only intent is to transfer wealth from other shareholders to themselves. Because the relevant assets of the firm's operations are the only source of wealth for its shareholders, and shareholders can diversify their holdings to deal with risk, profit maximization will be their near-unanimous goal. The ISO is a polar opposite, with no profits of its own to be claimed by those who set its policies. An ISO's decision-makers will have conflicting interests, be affected in different ways by group decisions, and have voting rights that bear little relation to their economic exposures. A rational choice between ISOs and Transcos can be made only after examining the nature and consequences of their governance. The economics of finance and voting strongly suggest that the outcomes in a nonprofit ISO will be both inefficient and inconsistent relative to those of a corporation. History leaves ample room for pessimism. There has been no important economic institution with voluntary participation that has enjoyed long-term viability under ownership and governance arrangements resembling those proposed for ISOs.

The next section contains a summary history of the ISO and Transco concepts and their embodiments in applications to the Federal Energy Regulatory Commission (FERC or Commission) and the Commission's subsequent decisions. Next, this article evaluates the efficiency claims of Transco advocates by examining economic studies that compare for-profit and nonprofit electric systems. Because those studies broadly conclude that neither type of system is generally more efficient than the other, any case for or against either institution must be grounded elsewhere. To begin that task, the economic role of nonprofit institutions is next examined in more generality. In important markets, nonprofits have proven themselves viable against for-profit firms. The activities dominated by nonprofits, however, are quite unlike those in which ISOs will be engaged. Economic studies have found that nonprofits are more likely to be viable in situations where their governance mechanisms are biased toward efficient choices.

The ISO's governance by collective choices of opposing interests is quite unlikely to favor efficiency. To lay a foundation for the importance of collective choice, the article next summarizes economic and legal research on why the corporate form so dominates economic activity. That research has generally found that shareholder governance has important efficiency properties that will probably be lacking in the administrative structures of non-corporate institutions. ISOs will be governed by the collective choices of self-interested persons with divergent individual goals, who will use their votes to further their interests. Few, if any, prior studies of ISOs have examined the structure of their govern-

after *Entergy Petition*]. The Alliance Transco will be a public corporation whose board members cannot be affiliated with its member utilities.

ance or compared it with the corporate alternative. The remainder of this article attempts to remedy the omission. It begins with a brief introduction to the economic analysis of political activity, including the formation of interest groups and coalitions. The analysis predicts that utility interests will be uniquely well-situated to dominate the internal politics of ISOs, and that this dominance cannot be exorcised simply by making them voting minorities. The history of ISO formations and those in progress is then shown to bear out this prediction.

The next sections show that ISOs are *a priori* as likely as Transcos to exercise monopoly power, and are more likely than Transcos to produce economically inefficient or inconsistent decisions. The logic of voting by heterogeneous electorates sheds light on this critical difference. It is shown that voting in an ISO environment can produce inconsistent or contradictory policies; a party with control of the agenda (sequence of votes) can at times control voting outcomes, and strategic misrepresentations by voters are far from unlikely. Certain conditions about voter interests and preferences can rule out the possibility of paradoxical and perverse outcomes. Those conditions, however, are less likely to be met in ISOs than in corporate organizations. The discussion continues with an examination of regulatory oversight. Contrary to some expectations, the governance structure of an ISO will probably make it harder to regulate for efficiency and to police market power than in a Transco. Problems analogous to the separation of corporate ownership and control can also arise in ISOs, where they may be harder to remedy than in corporations whose control is transferable in markets. For reasons inherent in the governance structures of ISOs, they are less likely to innovate than Transcos, at a critical juncture for the industry when innovations might be most valuable. Finally, the governance structure of ISOs virtually insures that they will not simply fade away when a superior institution comes along.

II. SOME HISTORY

Regulators and legislators must determine how to harmonize emerging competition in power production and marketing with the natural monopoly technology of transmission that continues to exist. Through the 1970s, exchanges of power between vertically-integrated utilities were in most cases a minor supplement to self-sufficiency, with transmission supplied largely at the discretion of its owners at cost-recovering rates. As these "wholesale" markets grew in the late 1980s, the FERC imposed "open access" policies intended to ensure nondiscriminatory allocation of transmission, at first as a condition on utility mergers and requests for market-based rate authority.[3]

The Energy Policy Act of 1992 (EPAct) gave the Commission new powers to order transmission (wheeling) for wholesale transactions, but not for final consumers of power, who remained under state regulatory jurisdiction.[4] Ex-

3. The first of these mergers was Opinion No. 318, *Utah Power & Light Co., PacifiCorp & PC/UP&L Merging Corp.*, 45 F.E.R.C. ¶ 61,095 (1988); the first power marketing plan was Opinion No. 349, *Public Serv. Co. of Ind.*, 52 F.E.R.C. ¶ 61,260 (1990).

4. Energy Policy Act of 1992, Pub. L. No. 102-486, 106 Stat. 2776 (1992) (codified at 42 U.S.C. § 13201 (1995)).

tending the range of EPAct, in 1996 the FERC issued Orders No. 888 and 889.[5] In those crders, the Commission recognized that *pro forma* open access tariffs and electronic bulletin boards (OASIS) would not by themselves allocate regional transmission efficiently in the face of loop flows and pancaked rates along fictitious contract wheeling paths.[6] Questions of access and coordination are becoming more urgent as retail wheeling spreads. Order 888 specifies that customers in states with retail wheeling whose transactions use FERC-jurisdictional lines are to be served under the same tariffs that apply to wholesale users.[7] In the wholesale markets, access problems became acute in the summer of 1998, when inefficient and inadequately coordinated transmission practices were a major cause of price spikes in the Midwest that ranged up to thousands of dollars per megawatt-hour (Mwh) on infrequent occasions.[8]

To ensure regional coordination and protect against discrimination, Order 888 set forth eleven principles to evaluate a regional organization (ISO) that would take over operation of transmission from vertically integrated transmission-owning utilities.[9] The FERC's powers to order formation of and participation in ISOs are unclear.[10] In all ISO applications thus far approved, the Commission has also required formation of institutions to monitor the state of competition in markets that the ISO administers.[11] The FERC has approved

5. Order No. 888, *Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities*, F.E.R.C. STATS. & REGS. ¶ 31,036, 61 Fed. Reg. 21,540 (1996) (codified at 18 C.F.R. pts. 35, 385) [hereinafter Order No. 888], *order on reh'g*; Order No. 888-A, *Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities*, III F.E.R.C. STATS. & REGS. ¶ 31,048, 62 Fed. Reg. 12,274 (1997) (codified at 18 C.F.R. pt. 35), *order on reh'g*; Order No. 888-B, *Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities*, 81 F.E.R.C. ¶ 61,248, 62 Fed. Reg. 64,688 (1997), *order on reh'g*; Order No. 888-C, *Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities*, 82 F.E.R.C. ¶ 61,046, (1998). Order No. 889, *Open Access Same-Time Information System (formerly Real-Time Information Networks) and Standards of Conduct*, F.E.R.C. STATS. & REGS. ¶ 31,035, 31,585 (1996), *order on reh'g*, Order No. 889-A, *Open Access Same-Time Information System (formerly Real-Time Information Networks) and Standards of Conduct*, III F.E.R.C. STATS. & REGS. ¶ 31,049, 62 Fed. Reg. 12,484 (1997) (codified at 18 C.F.R. pt. 37), *reh'g denied*, Order No. 889-B, *Open Access Same-Time Information System (formerly Real-Time Information Networks) and Standards of Conduct*, 81 F.E.R.C. ¶ 61,253 (1997).

6. It is very costly to direct electricity down a single line in an interconnected system. Instead, it flows through all of the lines in accordance with their relative resistances (impedances), taking both direct and roundabout paths (which may extend over several service territories) to reach its ultimate user. These "loop flows" may affect the ability of other utilities to put their own lines to their desired uses. Power transactions have generally disregarded the reality of these flows, instead specifying contract paths to be used in determining payments to only a subset of affected transmission owners.

7. *FERC Clears the Way for Retail-Access Programs in Several States*, INSIDE FERC, Dec. 22, 1997, at 11.

8. Robert J. Michaels & Jerry Ellig, *Price Spike Redux: a Market Emerged, Remarkably Rational*, PUB. UTIL. FORT. (Feb. 1, 1999), at 40.

9. Order No. 888, *supra* note 5, F.E.R.C. STATS. & REGS. ¶ 31,036, at 31,730.

10. The administration's draft restructuring legislation would allow the FERC to impose ISOs and require utilities to join them. Comprehensive Electricity Competition Act, S. 1047, 106th Cong. (1999); H.R. 1828, 106th Cong. (1999).

11. The California ISO, for example, administers markets for reserves of varying priority and for energy

(with conditions) five ISO proposals, for California, New England, the Pennsylvania-New Jersey-Maryland Interconnection (PJM), New York, and part of the Midwest.[12] The first three ISOs began operating by May 1, 1999. All are nonprofits governed by votes of stakeholder representatives, and operate lines that utilities continue to own.[13]

For-profit Transcos arrived at the FERC more recently. In March 1999, FirstEnergy, an Ohio-Pennsylvania holding company, filed a formal application to transfer transmission assets of its four operating companies to a newly formed affiliate in preparation for divestiture to a larger regional organization. If that changeover does not occur within two years, the assets will be divested to an unaffiliated entity.[14] In June, FirstEnergy and four other large utilities submitted to the FERC the "Alliance" agreement for a regional transmission organization (RTO) that could take the form of either a Transco or an ISO. Within ninety days of the FERC's approval, the companies will declare their intent to transfer assets to a Transco. That organization will be formed if one or more of the larger companies divests and 50% of the remaining companies concur with its establishment. If the Transco is not formed, an ISO will be, with each member still having an option to trigger formation of the Transco in the future by a similar decision.[15]

In the other application, Entergy Services, Inc. (Entergy) seeks a declaratory order from the FERC to provide guidance on its proposed Transco, "an independent, incentive-driven transmission company that will control and operate Entergy's transmission system and the transmission system assets of the entities that will become members of the Transco."[16] Entergy's operating companies will sell or lease their transmission assets to the Transco, a Limited Liability Company governed by a board with no ties to Entergy or any other transmission operator.[17] Entergy argued at length that the Transco is consistent with Order 888, noting that the Order's ISO principles do not require a nonprofit organization.[18] Intervenors and others have identified the degree to which a Transco is

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to flow within the next hour. The major energy market in the state is for day-ahead flows, administered by the California Power Exchange, an unrelated organization that also has market monitoring functions.

12. *Pacific Gas & Elec. Co., San Diego Gas & Elec. Co., & S. Cal. Edison Co.*, 77 F.E.R.C. ¶ 61,204 (1996), *order on reh'g*, 81 F.E.R.C. ¶ 61,122 (1997); *New England Power Pool*, 79 F.E.R.C. ¶ 61,374 (1997) *reh'g pending*; *Pennsylvania-New Jersey-Maryland Interconnection*, 81 F.E.R.C. ¶ 61,257 (1997), *reh'g pending*; *Central Hudson Gas & Elec. Co.*, 83 F.E.R.C. ¶ 61,352 (1998), *reh'g pending*, *Midwest Ind. Transmission Sys. Operator*, 84 F.E.R.C. ¶ 61,231 (1998). The Electricity Reliability Council of Texas (ERCOT) also operates as an ISO but is largely autonomous of the FERC.

13. A list of the California interests and their representation appears below.

14. *Application of the FirstEnergy Operating Co. for Authorization to Transfer Transmission Assets to Am. Transmission Sys., Inc.*, Docket No. EC99-53-000. (March 19, 1999) <http://rimswebl.ferc.fed.us/ wconnect/wc.dll?rwsearch~rimsdocinfor~1930731>.

15. *American Elec. Power Serv. Corp.*, Docket No. ER99-57-000, Attachment 1, Summary of Alliance Documents (June 4, 1999).

16. *Entergy Petition*, *supra* note 2. Entergy has thus far attracted no other transmission owners into its proposed organization.

17. *Id.* at 5.

18. Entergy Petition, *supra* note 2, at 19-35. Dissenting from the Commission's subsequent declaratory order, Commissioner Massey quoted Order 888 as stating that "to be truly independent, an ISO cannot be owned by any market participant." *Entergy Services, Inc.*, 88 F.E.R.C. ¶ 61,149 (1999) (Dissent, at 61,505)

independent of its parent(s) as the most critical screen it must pass through. Commenting on Entergy's proposal, a group of cooperatives noted that the company will continue to carry the Transco's assets on its own books and file a consolidated tax return that includes the Transco. Intervenors believe that such an affiliation will give the FERC the perpetual duty to act as "conduct police," and that the only acceptable Transco is one completely separated from generation.[19] In a recent declaratory order, the Commission determined that Entergy's passive ownership scheme, if properly designed, would be consistent with the principles of Order 888.[20] Any guidance contained in that order, however, would be subject to rules that might emerge from the FERC's comprehensive rulemaking on Regional Transmission Organizations, currently in progress.[21]

III. THE EFFICIENCY NON-QUESTION

The ISO/Transco debate has thus far been a war of assertions, with Transco partisans claiming that only profit-seekers will strive hard for efficiency and ISO advocates replying that Transcos will by nature harm competition in advancing their owners' interests.[22] The assertions of one side do not successfully rebut the assertions of the other. Generalizations from largely dated comparisons of public and corporate efficiency do not decisively suggest the superiority of either. Between the 1960s and the 1980s, economists performed many such comparisons, typically finding small or insignificant differences favoring corporate systems.[23] Many of these studies analyzed distribution, a standardized technology accounting for less than a third of delivered costs in most places.[24] Economists largely lost interest in such comparisons during the 1980s, and performed few analyses of the bulk power markets whose growth would soon trigger pressure for restructuring. Comparisons of transmission, the subject of the current debate, are almost nonexistent, probably because few municipal utilities own networks comparable to those of corporate systems. Even if comparison cases were available, it is difficult to envision a study relevant to the ISO/Transco controversy.

(citation omitted).

19. *Cooperatives Pan Entergy Transco Plan at FERC*, ELEC. DAILY, May 11, 1999.

20. *Entergy Petition*, *supra* note 2.

21. Notice of Proposed Rulemaking, *Regional Transmission Organizations*, 87 F.E.R.C. STATS. & REGS. ¶ 32,541, 64 Fed. Reg. 31,389 (1999).

22. *Compare, e.g.*, Prepared Testimony of Leonard S. Hyman for FirstEnergy, Docket No. EC99-53-000, at 4 (May 5, 1999) <http://rimswebl.ferc.fed.us/wconnect/wcdll?rwsearch~rimsdocinfor~1930735> *with* Motion to Intervene of Industrial Consumers, No. EC99-57-000, at 6-11 <http://rimswebl.ferc.fed.us/wconnect/wcdll?rwsearch~rimsdocinfor~1944621>.

23. A summary appears in Louis De Alessi, *An Economic Analysis of Government Ownership and Regulation: Theory and the Evidence from the Electric Power Industry*, 19 PUB. CHOICE 1 (1974).

24. Most municipal systems at the time were solely distributors that received their full electrical requirements from surrounding corporate utilities at regulated rates. Representative studies (some more recent) with quite different findings include: Randy A. Nelson & Walter J. Primeaux, Jr., *The Effects of Competition on Transmission and Distribution Costs in the Municipal Electric Industry*, 64 LAND ECON. 338 (1988); R. Richard Geddes, *Ownership, Regulation, and Managerial Monitoring in the Electric Utility Industry*, 40 J. LAW & ECON. 261 (1997); Robert A. Meyer, *Publicly Owned Versus Privately Owned Utilities: A Policy Choice*, 57 REV. ECON. & STATS. 391 (1975); and JOHN E. KWOKA, JR., POWER STRUCTURE: OWNERSHIP, INTEGRATION, AND COMPETITION IN THE U.S. ELECTRICITY INDUSTRY (1996).

Variable costs of transmission operation are relatively small, loop flows ensure that the state of a given grid is not entirely under its owner's control, and the operators of a system must make their choices in real time subject to reliability constraints which require judgment calls that are hard for outsiders to evaluate.

The lack of definitive results in public-private comparisons is unsurprising. Few of the studies adequately accounted for the effects of regulation that allowed corporate utilities to recover all but their most imprudent expenses yet put ceilings on allowable profits. On the public side, comparisons were difficult because these systems often enjoyed tax-exempt financing and no explicit property taxes. Most municipal utilities, however, contribute part of their revenues to city funds, and some also pay amounts in lieu of explicit property taxes. Unregulated by most state commissions, municipal systems are more often overseen by elected local officials or their appointees. The weak efficiency incentives of regulated utilities may produce higher costs than necessary, while the fiscal importance of nominally nonprofit public systems may induce them to monitor costs closely.

Changes in both regulation and markets also make historical generalization risky. Incentive regulation of corporate transmission increasingly rewards economizing on expenses and smart transactions in the market.[25] Competitors now have access to utility-owned transmission, although disputes over the degree of openness are widespread.[26] Market-based wholesale power prices are now the rule rather than the exception. In states where corporate utility customers have direct access to suppliers, municipalities are under increased pressure to open up their systems as well, and in all states they are trading more extensively in competitive wholesale markets. The stable regulatory and governmental institutions that made "yardstick" public-private comparisons relevant in the past are vanishing or changing beyond recognition with the arrival of competition.

IV. GOVERNANCE

A corporation's choices are determined by vote of its directors, who ideally act as agents of shareholders. An ISO's choices are also made by representatives of groups whose wealth is at stake.[27] The organization's rules explicitly specify the interests that will be represented, by agents who are implicitly expected to vote those interests and shape compromises in their favor. If representatives of self-interested parties run both the ISO and the Transco, the rational choice of an organizational form requires examining how differences in their governance will affect policy outcomes. Operating efficiency and monopolistic conduct rightly figure in today's debates, but far more is at stake. Which organization will be

25. Michael A. Crew & Paul R. Kleindorfer, *Incentive Regulation in the United Kingdom and the United States: Some Lessons*, 9 J. REGULATORY ECON. 211 (1996); Michael Einhorn, *Electricity Wheeling and Incentive Regulation*, 2 J. REGULATORY ECON. 173 (1990).

26. Altra Energy Technologies, Inc., *Petition for a Rulemaking on Electric Power Industry Structure and Commercial Practices and Motion to Clarify or Reconsider Certain Open-Access Commercial Practices*, Nos. RM95-8-000 and RM 98-5-000 (Mar. 25, 1998).

27. "Public interest" ISO governors likewise vote their groups' interests, and those whom they represent probably best advance their agendas (e.g. environmentalism) by choosing aggressive partisans. In what follows, "board members" and "governors" of an ISO are used interchangeably.

more innovative? Which will be a better long-term planner, and which is more likely to make consistent decisions as time passes? Which is more likely to invest efficiently in new plants? Which can change its form more easily when economically warranted? Do assertions that ISOs, unlike Transcos, need only "light-handed" regulation make sense?[28] Answering any of these questions requires a more realistic analysis of governance, but insights from the economics of transaction costs, corporate organization, and voting have been conspicuous by their absence from the debate.

A. Corporations and Non-Profit Entities

Economists long viewed the business firm as a "black box" that transforms inputs into outputs in hopes of making a profit. Until recently, economists have chosen to analyze only input-output and profit-loss relationships, and showed little interest in the firm's internal organization. Neoclassical economic theory could not operationally distinguish activities that were likely to be placed under a common management from those that were not—why some inputs were made and others were bought, and why some firms but not others branched across product lines. Historically, economists were unable to explain the administrative structures of firms—why some were divisionalized but others were not, and why some had longer chains of command than others.[29] Economics largely depended on *ad hoc* explanations of why limited-liability corporations with publicly-traded stock dominated so many sectors of the economy, while nonprofit entities were a presence in so few.

All this is changing with the insight that what can be done in the market can also be done in-house (outsourcing or internal production of a raw material), and that competition can yield efficient internal organizations as firms seek to profit by changing the *loci* of their activities. Markets provide benefits, but they can be costly to use, particularly when alternative suppliers are few, when transactions and goods are unstandardized, when coordination must be precise, and when durable investments cannot be dependably amortized without binding customers to pay for them. Where these costs are too high, administrative decisions within a firm are the efficient choice. Utilities in the past were almost invariably monopolies that were vertically integrated (or linked by long-term contracts) because coordination of electrical flows was critical for reliability, markets for outside generation were "thin," and reciprocal obligations to serve and take service were thought necessary to finance plants that were fixed in location and unusable in other industries. Changes in technology and law allowed the development of competitive generation markets in which non-utilities would become major sellers. Because markets cannot (yet) provide real-time system coordination, provision of reliability remains in the hands of regulated monopoly utilities.

In environments that allow it, competition determines the legal and finan-

28. *Compare* Curt L. Hebert, Jr., *Moving the RTO Debate*, 12 ELEC. J. 24 (1999), *with* McCamant et al., *supra* note 1, at 26.

29. Ronald Coase's fundamental works both brought these problems to light and pointed the way toward answers. They are collected in R.H. COASE, THE FIRM, THE MARKET, AND THE LAW (1988). Later works have addressed these problems. *See, e.g.*, OLIVER E. WILLIAMSON, ECONOMIC ORGANIZATION: FIRMS, MARKETS AND POLICY CONTROL (1986); and OLIVER E. WILLIAMSON, THE MECHANISMS OF GOVERNANCE (1996).

cial characteristics of firms as well as their internal structures. There is a very large range within which legal and financial forms can vary.[30] Firms may be corporations, partnerships, or proprietorships with numerous legal variations (particularly as regards liability) within each of these forms. They can be organized as profit-seekers or as nonprofits. They can be governed by shareholders, workers, or customers (e.g. a rural electric cooperative). Their financial structures can have differing proportions of debt and equity, both of which may or may not be publicly traded.

With all of these alternatives possible, it is remarkable that one variant so consistently dominates. Almost everywhere the law allows them, publicly-traded limited-liability corporations financed by a mixture of debt and equity dominate the economy. In a competition among organizational forms, the corporation has numerous advantages beyond an ability to pool the resources of small investors and limit their liability. The corporate form facilitates diversification by investors which facilitates efficient decisions in risky situations while allowing easy transfer of ownership if an individual's circumstances or expectations change. If publicly traded, shares of common stock carry time-varying prices that can help investors evaluate the quality of managers they have voted into office. Because shareholders are the sole residual claimants to corporate wealth and the sole group with rights to determine management, their nearly unanimous goal will be to seek profit and operate efficiently given the legal constraints and the market competition that they face.[31] Shareholders sometimes have difficulties controlling management, but they usually have few difficulties in agreeing that management decisions ought to seek maximization of shareholder wealth.[32]

This dominance of the corporate form is by no means total. Partnerships (often with limited liability) are common in some professions. Sole proprietorships produce the bulk of farm products. Where forms of enterprise compete, the characteristics of survivors will depend on details of the environment.[33] The characteristics of transmission and electricity markets are unlikely to warrant imposition of a nonprofit regional transmission operator. In the overall economy, neither nonprofit status nor decision-making by diverse stakeholders are consistently associated with the "necessity" of the good produced, the risk of monopoly, the scale of the industry, the pace of change in it, or the range of affected interests.

Non-corporate forms win out where their organizational costs (including

30. FRANK H. EASTERBROOK & DANIEL R. FISCHEL, THE ECONOMIC STRUCTURE OF CORPORATE LAW (1991).

31. Michael C. Jensen & William H. Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure*, 3 J. FIN. ECON. 305 (1976).

32. Michael C. Jensen, *The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems*, 48 J. FIN. 831 (1993).

33. For example, family farms produce most of the nation's grain while corporate farms have taken over poultry and livestock. Scale economies in livestock favor the corporate form, while the importance of attention to heterogeneous details in grain production favors the family farm. Douglas W. Allen & Dean Lueck, *The Nature of the Farm*, 41 J. L. & ECON. 343 (1998). Likewise, general hospitals with short patient stays are more likely to be nonprofits than long-term care facilities, the difference being explained by an analogous distinction between the modalities of short-term and long-term treatments. Susan Rose-Ackerman, *Altruism, Nonprofits, and Economic Theory*, 34 J. ECON. LITERATURE 701 (1996).

those of formation) are lower and decisions by non-shareholders are more likely to produce efficient outcomes than decisions by shareholders. The existence and viability of an organizational form are largely determined by its governability. The greater the agreement on its goals, the more governable it is.[34] There may be differences among those with votes on how best to achieve those goals, but the cost of reaching decisions and the likelihood of arriving at a decision that is consonant with the goal will rise with the commonality of their interests. Competing institutions whose decision-making bodies can arrive quickly at rational and consistent decisions will supplant those that cannot. Non-corporate organizations supplant corporate ones when they are better able to cope with problems of governance. This is more likely when individual governors have identical interests, voting power is apportioned to financial stakes (one-share-one-vote), and non-shareholder governors are more likely to arrive at efficient decisions than shareholders. The costs of reaching agreements and the costs of inefficient decisions are both relevant.[35]

Corporate dominance will decline in those sectors where non-corporate forms are better able to govern the organization efficiently.[36] Farmers in a nonprofit marketing cooperative, for example, have a uniform interest in maximizing their individual returns from crop sales. Votes are often apportioned to production, and revenues from sales the organization has made at different prices are pooled and prorated among the members by crop size.[37] Because each farm makes its own decision on how to allocate the revenue it receives, conflicts over investment in individual farms are ruled out of the collective decision process. By contrast, a nonprofit ISO will make its decisions by counting the votes of heterogeneous interests whose numbers are apportioned on non-economic criteria. Few, if any, of those interests directly profit from revenues accruing to the ISO. That organization, however, will also probably play an important role in choosing investments that differentially affect the incomes of the various governing interests.

The shareholders of a corporation are well-defined residual claimants who share its profits or bear its losses (up to the limits of their liability) after all other claims against it have been settled. Lodging residual claimancy with shareholders puts corporate decisions in the hands of parties with a common interest in

34. HENRY HANSMANN, THE OWNERSHIP OF ENTERPRISE (1996). *See also* Harry DeAngelo, *Competition and Unanimity*, 71 AM. ECON. REV. 18 (1981) (providing a demonstration of how shareholders will generally be unanimous in their objectives).

35. In addition, a well-established body of law specifies the details of equal treatment of shareholders, relationships between shareholders and management, transactions in shares, and the protocols of shareholder governance. Because such detailed law does not exist for (e.g.) worker-managed firms they will also be inherently riskier even if there is agreement on goals.

36. Professionals with highly specialized but similar skills may thus choose partnership, since it is easier for members of a homogeneous group to evaluate one another and to compare effort when apportioning rewards.

37. HANSMANN, *supra* note 34, at 28. The reasoning also explains why a farm cooperative is usually restricted to growers of single crop or the members of a medical partnership usually practice the same specialty. If the organization handles sells in two unrelated markets, its members must collectively decide on (e.g.) how to allocate limited marketing funds between them. Those who succeed in capturing more of the funds make part of their gains at the expense of those who operate in the other market. *Id.*

wealth maximization, raising the likelihood that they will pursue economically efficient policies.[38] Shareholders will be single-minded because legal requirements for equal treatment ensure that no subset of them can successfully profit by instituting policies that expropriate some other subset of shareholders. Adding other interests to the governance mechanism decreases the likelihood that efficient decisions will prevail. The interests of non-shareholders can be advanced both by implementing efficient policies that increase the organization's value and by forming coalitions to increase their wealth at the expense of others in the group.

The potential diversity of these coalitions is limitless. Workers will be in conflict with shareholders, and subsets of workers in conflict with one another. The differing time horizons of older and younger workers engender conflicting preferences over pensions, job security, and corporate investment in new plants. If non-shareholder financial interests have seats on corporate boards, their attitudes toward risk will complicate the decision process, since lenders can receive at most their contracted payments while shareholders can benefit without limit from risky decisions that will eventually pan out. Adding customers and input suppliers to the decision-making mix further increases the scope of redistributional conflict and diminishes that of incentives toward efficiency. Bringing in other single-minded parties without financial interests (e.g. environmentalists) can only complicate matters further. As Hansmann notes, "[o]ne of the strongest indications of the high cost of collective decision making is the nearly complete absence of large firms in which ownership is shared among two or more different types of patrons, such as customers and suppliers or investors and workers."[39] An ISO that is inefficiently governed by stakeholders, however, may survive because compulsory membership and sole control of transmission largely immunize it from the organizational competition that has eliminated similar entities from other sectors.

Efficient decisions by shareholders are those that maximize their wealth. Shareholders in firms whose pricing is constrained by competition will be able to better themselves by attempting to operate as efficiently as possible. Shareholders in firms that have the power to set prices above competitive levels will have additional interests in restricting output to raise prices, denying competitors access to essential facilities, and other acts that would not be sustainable in a competitive market.[40] These divergences from competitive performance can be dealt

38. Shareholders adjust to their preferred levels of risk by diversification of their individual holdings.

39. HANSMANN, *supra* note 34, at 44. Likewise, firms incorporated in Delaware (and other states) have the option of allowing debtholders voting rights symmetric with those of shareholders, but never do. EASTERBROOK & FISCHEL, *supra* note 30, at 63. Effective control of a firm passes to debtholders in bankruptcy, a rational choice because they have the strongest motive to make wealth-maximizing decisions on its assets after equity claims have become worthless.

40. If there is an active market for corporate control that leads to removal of inept managers the oft-cited (but seldom evidenced) desire of a monopolist for a "quiet life" ceases to be a problem. A monopolist who simultaneously owns and manages the firm gives up the opportunity of selling it at the capitalized value of a more efficient owner's expected economic profit. Findings of inefficient operation or investment by traditional regulated utilities may reflect limits on their profitability, the inability of regulators to monitor management decisions accurately, the absence of competition in territorial monopolies, or impediments to transactions in corporate control under the Public Utility Holding Company Act.

with in two broad ways: by regulating the firm (possibly breaking it up) while it remains a corporation, or by imposing a non-corporate form of governance and a changed decision-making process. Both the ISO and the Transco will have potentially exercisable monopoly power. The fact that experiences with regulation of profit-seeking entities have sometimes been unsatisfactory allows no prediction of how well regulation will control nonprofit entities that perform the same functions.

Corporate utilities and independent power producers (IPPs) generate nearly 90% of U.S. electricity. The strategies of utilities are set by boards of directors similar to those that govern most other corporations. Consumer, competitor, environmental, and other interests do not get votes on a rationale that the board's decisions may affect them. Instead, those groups air their interests before regulators who weigh them through politics and filter them through precedent. Regulators then impose constraints on utilities that range from service obligations to rates to investment policies. Utility management subsequently attempts to act in the interests of shareholders subject to these constraints (and possibly to test the limits of the constraints). The decisions of non-corporate utilities are also usually in the hands of relatively homogeneous consumer interests, rather than being influenced by the votes of other affected parties that might include power producers, marketers, other utilities, bondholders, and environmentalists.

V. COLLECTIVE GOVERNANCE

A. Self-Interest in Economics and Politics

Individuals seek to further their personal interests when interacting with others. Their interests may be in part altruistic, but self-interest and altruism are hard to disentangle.[41] To a first approximation, self-interest also explains much political behavior. Individuals join interest groups and form coalitions to advance their personal goals, which often include avoidance of exploitation by rival coalitions. Self-interest may also lie behind superficially altruistic political behavior.[42] Empirical research on political behavior generally concludes that individuals vote their self-interest rather than some broader conception of the public interest. Since government has powers to tax and regulate, those who can control its decision-making may use it to transfer wealth to themselves. Constitutional rules are necessary to cope with the constant tension between the economically necessary functions of government and the opportunities for political winners to enrich themselves.[43] A number of ISOs are best viewed as being cur-

41. Individuals contribute to churches in hopes of a better afterlife, and parents treat their children with kindness in expectation that the children will support them in old age. Laurence R. Iannaccone, *Introduction to the Economics of Religion*, 36 J. ECON. LITERATURE 1465 (1998). Likewise, a business may "altruistically" choose not to degrade the quality of its output because the near-term profit is not worth the future loss in reputation. Benjamin Klein & Keith B. Leffler, *The Role of Market Forces in Assuring Contractual Performance*, 89 J. POL. ECON. 615 (1981).

42. The prospect of increased funding for food stamps may, for example, bring farmers and welfare recipients into the same coalition.

43. "Constitutional" in the text is a term from economics. *See* JAMES M. BUCHANAN & GORDON TULLOCK, THE CALCULUS OF CONSENT (1962), JAMES M. BUCHANAN, THE LIMITS OF LIBERTY: BETWEEN

rently at the constitutional stage of development.

Policy outcomes depend on voting and related procedures that are themselves set at the constitutional stage. The fundamental constitutional problem is to arrive at uniform policies on the basis of heterogeneous preferences. If membership in the voting group is not predetermined, constitutional rules must determine who is eligible for representation and what voting power will be held by various persons or interests. Constitutional rules must also specify the committee structure: through which motions become policies. Elements of that structure include determination of the interests to be represented, the sizes and numbers of committees, and decision-making procedures (including necessary majorities and veto provisions) within them. The necessary choices include rules for amending established rules. Governance may consist of multiple tiers, and may contain provisions for the appeal of lower-level decisions. All of these issues have been matters of contention in the formation of ISOs, but their generality carries implications for the organizational form itself.

B. Participation in Political Activity

Individuals attempt to further their interests both by transacting in the market and by attempting to influence government. The choice of forum is an economic one. Unless otherwise recovered, resources expended on lobbying are unavailable for market activities, and the payoff on a dollar spent to influence policy (e.g. the constitution of an ISO) must be weighed against that of a dollar invested in business. All collective action faces "free rider" problems: someone whose efforts successfully influence government policy creates a benefit for all who are similarly situated.[44] Free riding is a smaller problem where the costs of reaching agreement and monitoring contributions to effort are smaller. A monopoly firm (which can have no free-riding competitors) or an association that can coerce contributions may have an advantage over firms in a diffuse industry or associations that cannot compel their own funding. An industry that consists of a few large firms and numerous tiny fringe competitors may not be fully organized, but the large firms may find the benefits of political activity to be worth the costs, while the small firms ride along for free.[45]

Marginal costs are the only costs relevant for economic decisions because, unlike sunk costs, they are avoidable if a different decision is made. Thus the marginal costs for a preexisting group attempting to influence ISO rules are only those of undertaking that single activity. The marginal costs for a yet-unformed interest group are both those of the activity and those of organizing themselves.

ANARCHY AND LEVIATHAN (1975); and GEOFFREY BRENNAN AND JAMES M. BUCHANAN, THE REASON OF RULES: CONSTITUTIONAL POLITICAL ECONOMY (1985).

44. MANCUR OLSON, THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS (1971). Olson argues that successful groups often solve the free-rider problem by also offering services of private value that are not available to nonmembers, e.g. a trade association collects market data whose distribution is restricted to members.

45. This is also a frequent explanation of how large institutional shareholders solve the free-rider problem in monitoring corporate managements, benefiting the small shareholders in the process. Donald E. Farrar & Lance Girton, *Institutional Investors and Concentration of Financial Power: Berle and Means Revisited*, 36 J. FIN. 369, 369-381 (1981).

Preexisting organized interests can have a cost advantage in political activity. Organizations that represent diffuse interests will be disadvantaged relative to more focused ones. Aspects of heterogeneity include competitive relationships. Industrial power users in low-price states may wish to discourage deregulations that lower the bills of their competitors in high-price states, sometimes even if their own rates are cut in the process.[46] A group whose members do not actively compete with each other will probably find it easier to organize for political action than one whose members compete.

The cost of political activity is the value of the best opportunity that is foregone when that activity is chosen, whether lost as foregone income or as adverse changes in asset values. Entities that have poor market opportunities will rationally divert dollars to policies supporting good opportunities for use in the market. In a risky world, the value of an opportunity also depends on the probability of success. Someone with little political experience who is facing more experienced rivals will rationally expect a lower probability of successfully influencing policy and will allocate fewer resources to lobbying. Those who operate in rapidly growing markets will earn higher returns there, assuming that the political efforts of others do not entirely turn the rules against them. Some of the lowest opportunity costs of political activity may be enjoyed by utilities that can recover their expenses in regulated rates.

On almost all of the above reasoning, established transmission-owning utilities will be advantageously situated to influence ISO constitutions and will be economically motivated to do so. The theory of political participation predicts substantial activity by preexisting organized interests whose members have few conflicts among themselves, large amounts at stake, and low costs of influencing the process, whether out-of-pocket or foregone market opportunities. Those without interests that are unorganized, whose members compete with one another, and whose costs cannot be recovered in the regulatory process have generally been a smaller presence in ISO formations. Some large independent power producers and marketers have at times found participation in the process worthwhile despite the benefits their efforts confer on smaller competitors. Small consumers who have low individual stakes and little organization are least likely to represent themselves, save for advocacy groups whose dues-paying membership includes relatively few of them.[47]

C. The Formation of ISOs

If the model of political participation provides insight into ISO formations, it may also provide useful predictions about how their governance operate in practice. That model first predicts that an ISO is more likely to be formed where its scope is less costly to determine. The more limited the geographic options,

46. Steven C. Salop & David T. Scheffman, *Raising Rivals' Costs*, 73 AM. ECON. REV. 267 (1983).

47. Regulators have at times attempted to lower obstacles to participation by small and hard-to-organize interests. The California Public Utilities Commission, for example, allows certain classes of intervenors in its proceedings to claim compensation for their time and expenses. That Commission also contains an Office of Ratepayer Advocates staffed by employees whose function is to provide input on behalf of smaller consumers. Few if any ISO formations have proceeded under rules which allow cost recovery by participants who can claim financial hardship.

the easier it will be to settle on one of them. If there are no clear boundaries and the costs to a utility of staying out are low, an ISO may not form at all. All five currently operating ISOs have been geographically or otherwise constrained prior to their formation, while less constrained regions have seen ISO proposals die at various stages of development. The New England, PJM, and New York ISOs operate in regions that have long sustained tight power pools. Their contiguity sets some "natural" boundaries on the organizations that may not coincide with economically efficient boundaries. One of the remaining two ISOs is ERCOT, composed of Texas systems that have long operated their own reliability area while separating themselves electrically from interstate commerce. The other, in California, was legislatively imposed on the state's three largest utilities as part of a complex restructuring bargain, and whose control only extends to assets within the state.

Where organizational costs are higher, ISOs are less likely to form or likely to be smaller in scope. The original proposals for a comprehensive Midwest Independent System Operator (MISO) faced obstacles from the outset as utilities with low transmission costs resisted having their rates averaged with those of high cost systems.[48] Since the breakup of the original organization, the higher cost utilities making up the Alliance group have filed for their own organization with the FERC. They have done so amid comments that the resulting shapes of the Alliance and a possible MISO are inconsistent with regional operating efficiency and will not completely resolve rate pancaking.[49] Elsewhere, embedded cost inequalities and political conflicts between public and private power combined to bring an end to InDeGo, the Pacific Northwest's proposed ISO, after two years of planning.[50] Nearly half of the area's transmission is operated by the Bonneville Power Administration, which is also the dominant supplier to a number of small public power systems and large industrial users in the area. Similar factors have halted the inclusion of municipal systems in California's ISO, leaving nearly half of the state's import-export capability beyond the ISO's control. The Los Angeles Department of Water and Power has chosen not to join the ISO after learning that it would pay a cost-based average of 88 cents/kwh to access the grid while corporate systems are paying under 35 cents/kwh.[51]

ISO filings with the FERC provide indirect evidence that transmission-owning utilities disproportionately influence constitutions. Although the membership of Northeastern ISOs is more easily determined, the FERC has been persistently dissatisfied with their governance arrangements. The FERC has questioned, and at times rejected, portions of applications by the region's three ISOs after determining that important committees and voting procedures were unac-

48. *Midwest ISO Brouhaha Seen Slowing Competition, Testing FERC's Policy*, POWER MARKETS WK., Dec. 15, 1997, at 3.

49. *American Elec. Power Serv. Corp*, No. ER99-57-000. *Massey Takes Hebert to Task on Transcos, Berates Use of 'Sweeteners'*, INSIDE FERC, Dec. 14, 1998, at 7.

50. *Last InDeGo Organizers Shelve ISO Plan but Hope that FERC Will Step in to Lead*, 26 ENERGY RPT., Mar. 9, 1998.

51. *Calif. ISO Is Too Expensive to Join, LADWP Complains, Looks for Changes to Rules*, POWER MARKETS WK., Feb. 9, 1998, at 10.

ceptably dominated by transmission owners.[52] It has informed the New York ISO that if the ISO does not submit an acceptable governance plan, it intends to impose one on the organization. The rejected arrangements of the Northeastern groups appear to reflect dominance of the planning process and preexisting regional pools by transmission owning utilities.[53] In California, numerous parties accused utilities of unwarranted dominance in the ISO planning process, noting that the state's three large corporate systems had both sufficient resources and the ability to recover most of their expenses. Those three utilities were the only parties allowed to vote on organizational design issues.[54] Similar complaints about utility dominance of the constitutional process have occurred in ISOs that failed to form.[55] On the other side, utilities might reasonably claim that they are only protecting the values of assets their shareholders will continue to own, and that their extensive operating knowledge will be invaluable if the ISO is to succeed.[56]

The interests represented at the ISO are themselves determined in the constitutional process that sets its rules. Even if two groups have equal representation on the board, their effective power may differ if one (e.g. competing independent power producers) has less monolithic interests than the other. There is no clear link between the rule-setting power of transmission owners and the range of interests represented on an ISO's board. Utilities may seek to dominate by attempting to exclude other interests or by creating large representations for themselves. Thus, alleged utility dominance of ISO formation in New York has left a stakeholder group as power marketers unrepresented in its governance.[57] Also in New York, the FERC rejected a proposal that would have given each of the state's utilities, whether large or small, its own vote on important committees, with a provision that the number not be reduced in the event one of them

52. *FERC Approves PJM Majority's ISO and Congestion Pricing Proposal*, FOSTER ELEC. REP., Dec. 3, 1997, at 1; *With Bailey Dissenting, FERC Orders NYPP to Revise Governance Rules for Key NY-ISO Committee; Gives Other Approvals Needed for the NY-ISO to Begin Operations*, FOSTER ELEC. REP., May 5, 1999, at 8 [hereinafter *Revised Governance Rules*]; *FERC Conditionally Approves its First ISO*," FOSTER ELEC. REP., July 2, 1997, at 5.

53. *Tensions Threaten N.Y. ISO*, ELECTRICITY DAILY, July 16, 1996; *IPPs, Marketers Vote No on PJM Transmission Proposal*, ENERGY DAILY, Aug. 22, 1996.

54. *Various Parties Protest California IOU's ISO and Power Exchange Proposals*, FOSTER ELEC. RPT., June 26, 1996, 1; *California Utilities Defend Their three Applications at FERC for Implementing CPUC's Restructuring Decision*, FOSTER ELEC. RPT., July 10, 1996, 1.

55. *Midwest ISO Planners to Allow for More Input, but Industrials Still Fault Plan*, ELECTRIC UTIL. WK., April 21, 1997, at 4 (referring to a predecessor of the current Midwest ISO).

56. This reasoning has carried some weight at the FERC. Commenting on the New York arrangements, Commissioner Bailey stated that she is "not particularly concerned about the prospect of transmission owner dominance. . .[because] reliability organizations should be dominated by expertise." *FERC Eases OASIS Posting Load, Okays N.Y. ISO; Massey Argues on Some Calls*, POWER MARKETS WK., June 29, 1998, at 10. The Commissioner also stated that she had supported a PJM restructuring plan because "[w]hen seven of the eight [utilities] support one approach, it was difficult to reject that approach." Independent power producers and marketers strongly opposed the plan. *PJM Majority's Plan Wins FERC Nod for Restructuring Pool into ISO, PX*, ELECTRIC UTIL. WK., Dec. 1, 1997, at 12.

57. The FERC has promised to take up the marketers' case after the ISO submits a revised governance proposal. *Revised Governance Rules*, *supra* note 52, at 8.

vanished by merger.[58]

There is no simple relationship between the structure of an ISO's board and the influence of transmission owners in creating that structure. California's utilities also dominated the structuring of its ISO, whose board contains numerous diverse interests. Utilities might choose such a strategy because it gives them a broader range of potential coalition partners, because it is easier to organize their own concentrated interests against a diffuse opposition, or because deadlocks and inertia on the board can facilitate transfers of effective power to a pro-utility ISO staff. California's original FERC filing envisioned five classes on its Board of Governors, and subsequent state restructuring legislation proposed eleven.[59] Later activity led to thirteen classes, with twenty-five total votes, along with four non-voting "Advisory Representatives." The two largest classes are "Municipal Utilities" and "End-Users At Large," with four members each.[60] Investor-owned utilities, which retail 75% of the state's power, get three members.[61] None of the classes has stated that it wishes to consolidate with others. The more likely pressure will be to add new representatives as political conditions change, without necessarily deleting old ones.[62] As this occurs, free-rider problems will become more important and favor interests whose purposes are more concentrated and are willing to devote relatively more resources to influencing ISO governance.

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58. *Power Marketers Protest NYPP's ISO Settlement Agreement and its Weighted Voting Proposal*, FOSTER ELEC. REP., Dec. 16, 1998, at 8.

59. *Pacific Gas & Elec. Co., Order Conditionally Authorizing Establishment of an Independent System Operator and Power Exchange*, Nos. EC96-19-000 and ER96-1663-000, 77 F.E.R.C. ¶ 61,204 (Nov. 26, 1996).

60. Standing over the ISO's governors, California's Oversight Board determines which organizations are able to choose individuals who will be seated on the ISO board, and has the final say on whether a nominee is acceptable. It has rejected only one nominee, a consumer representative whom it claimed did not have sufficient experience on boards of directors. *California Consumer Groups Charge that California ISO's and Oversight Board's Failure to Seat their Chosen Representative on the ISO's Governing Board Violates FERC's Directives*, FOSTER ELEC. REP., June 17, 1998, at 12. The current representatives of At-Large End-Users are from the League of Women Voters, Proctor & Gamble, The California Public Utilities Commission's Office of Ratepayer Advocates, and a self-employed person. *California ISO Board of Governors: Class and Affiliation Listing* <http://www.caiso.com> [hereinafter *CAISO Board of Governors*].

61. During the formation process a representative of a California corporate utility stated that "the government structure for the exchange and the ISO was specifically set up to favor the [municipal utilities]," presumably to keep them from protesting the structure. *Are California Munis Trying to Game the ISO System?*, ELEC. DAILY, May 9, 1996.

62. The other ten classes include: (1) one member from "Government Market Participant Entities" (California Department of Water Resources); (2) two from "Non-Utility Electric sellers" (Dynegy Inc. and the Independent Energy Producers Association); (3) one from "Public Buyers and Sellers" (Western Area Power Administration); (4) one from "Private Buyers and Sellers" (Enron Corporation); (5) one from "Agricultural End-Users"; (6) one from "Industrial End-Users"; (7) one from "Commercial End-Users"; (8) two "Residential End-Users" (consumer-advocate group TURN and a sometime consultant to TURN); (9) two "Public Interest Groups" (both environmentalist); and (10) two "Non-Market Participants" (International Brotherhood of Electrical Workers and engineering-construction firm Bechtel) Advisory Representatives are from the Bonneville Power Authority, Powerex (British Columbia), the California Energy Commission, and the California Public Utilities Commission. *CAISO Board of Governors*, *supra* note 60.

VI. GOVERNANCE BY COLLECTIVE CHOICE

A. Models of Voting

In an ISO, stakeholders who once took their differences to regulators will now vote their interests directly. Economic models of collective choice give reason to expect that this change will have important and adverse consequences for efficiency. These models rigorously demonstrate that it is impossible to design collectively governed institutions that will not under some conditions produce perverse or irrational voting outcomes. The paradoxes of choice by voting are straightforward, and students of government no longer view them as curiosities of interest only to mathematicians. The paradoxes are logically pervasive, empirically important, and show that several centuries of political analysis may well be devoid of foundation.[63] Under some conditions, the paradoxes vanish and consistency will reign. Those conditions are likely to be met in the governance of a Transco, but not that of an ISO.

The key result in the theory of voting is known as the "Impossibility Theorem." Stated informally, it says that with at least three issues and three voters, *no* collective decision-making process will always produce outcomes satisfying certain intuitively agreeable criteria.[64] The criteria include: (1) non-dictatorship; (2) a defined outcome over all possible votes, i.e. anarchy and ties are impermissible; and (3) outcomes that respect individual preferences. The third means that when someone who formerly preferred policy A to policy B reorders his ranking, if the collective choice was formerly B, it cannot now become A.[65] The Impossibility Theorem shows that it is impossible, rather than just difficult, to find a process that meets the criteria regardless of the underlying preferences of the voters. In particular, majority voting, supermajority voting, a point-count system, complex committee structures, and numerous other schemes all fall subject to the Impossibility Theorem. There are two important consequences. First, no matter what the method of choice, outcomes may be intransitive (i.e., the electorate may rank alternative X above Y, Y above Z, and Z above X.) Second, no rule precludes situations where some individuals gain by voting strategically. By not expressing their true preferences on the ballot, they can induce an outcome more favorable for themselves than if they voted sincerely.[66]

To illustrate intransitivity, assume the simplest case of majority voting over

63. Charles R. Plott, *Axiomatic Social Choice Theory: An Overview and Interpretation*, 20 AM. J. POL. SCI. 511 (1976).

64. KENNETH ARROW, SOCIAL CHOICE AND INDIVIDUAL VALUES (2d ed. 1963). Readable summaries appear in STEVEN J. BRAMS, RATIONAL POLITICS (1985); and Plott, *supra* note 63. Arrow received the Nobel Prize for his work.

65. One final condition is the "independence of irrelevant alternatives." Roughly, it states that if coffee and tea are on the menu and I order coffee, if the waiter unexpectedly announces that beer is also available I may switch to beer, but I will never change my choice to tea.

66. Alain Gibbard, *Manipulation of Voting Schemes: A General Result*, 41 ECONOMETRICA 587 (1973); Mark Allen Satterthwaite, *Strategy-Proofness and Arrow's Conditions: Existence and Correspondence Theorems for Voting Procedures and Social Welfare Functions*, 10 J. ECON. THEORY 187 (1975). If one group can gain by misrepresenting its preferences, others may best be able to defend their interests by misrepresenting their own.

three issues. Let individuals A, B, and C rank policies X, Y, and Z as follows:

A: X > Y > Z
B: Y > Z > X
C: Z > X > Y

Preference is indicated by ">". Assume that the voting is by pairwise comparison with the winner surviving for the next round.[67] If their first vote pits X against Y, X wins. Z then wins the second round against X. Now instead assume a different sequence of ballots in which the first match is between Y and Z, which Y wins. In the subsequent election between X and Y, X wins. Since the sequence in which votes are taken determines the winner of this example, the person who can set the agenda of pairwise elections can ensure that his most desirable choice wins.[68] To illustrate strategic behavior, assume the first round pits X against Y. Individual A understands that if everyone votes honestly, then Z, his least preferred choice, will be the final winner. A can avoid this outcome by concealing his true preferences and voting for Y rather than X in the first round. Y then wins the second round, which A finds superior to the outcome without strategic voting.

This example is, of course, an extreme and possibly unlikely illustration whose outcome depends on the conditions assumed. If instead A and B both rank X > Y > Z, then X wins regardless of the vote sequence and insincere voting by C cannot undo the outcome. Majority voting produces a well-behaved choice if these are the preferences of the voters, but fails to do so if their rankings are those of the prior example. The Impossibility Theorem shows rigorously that there is *no* voting rule that can eliminate agenda control and strategic misrepresentation for all possible configurations of individual preferences.[69]

B. Why the Math Matters

The theory has important consequences for the governance of both ISOs and Transcos. The situations in which choice can produce perverse or strategic results are quite likely to occur in ISOs and highly unlikely to occur in Transcos. If majority or supermajority voting is the rule, an important and plausible condition known as single-peaked preferences is sufficient to rule out the undesirable outcomes. Single-peakedness means that each person has a single most-preferred policy, and that dissatisfaction with an alternative increases with its

67. Very few elections take this form, but the example also applies to motions and amendments. Saul Levmore, *Parliamentary Law, Majority Decisionmaking, and the Voting Paradox*, 75 VA. L. REV. 971, 992 (1989). Levmore also argues that important elements of parliamentary procedure have the objective of minimizing either the likelihood or the visibility of paradoxes. *Id.* at 997.

68. Summarizing the pairwise outcomes, this society prefers Z to X, X to Y, and Y to Z, an intransitive ranking. Voting on all three at once, e.g. by a point-count ranking, it fails to produce a winner in this example, and will also fall subject to the Impossibility Theorem in the general case.

69. There are many real-world instances of the paradox. *See, e.g.*, Frank H. Easterbrook, *Ways of Criticizing the Court*, 95 HARV. L. REV. 802 (1982) (Supreme Court decisions); William H. Riker, *Arrow's Theorem and Some Examples of the Paradox of Voting*, in MATHEMATICAL APPLICATIONS IN POLITICAL SCIENCE 41 (J.M. Claunch ed.) (1965) (U.S. House and Senate); and J.C. Blydenburgh, *The Closed Rule and the Paradox of Voting*, 33 J. POLITICS 57 (1971) (U.S. House votes).

distance from that personal optimum.[70] Directors of a corporate Transco are likely to have single-peaked preferences. As noted above, the nature of the corporation ensures that directors will be solely interested in the wealth created in it, and that each member (and shareholder) is likely to prefer high profits to low profits. If so, their voting decisions will be consistent, independent of the sequence in which votes are taken and not subject to strategic misrepresentation by individual directors.[71]

Among the directors of an ISO, single-peakedness is less likely to prevail. For simple dollar amounts (e.g. the budget for a single item), single-peakedness appears reasonable. Someone who most prefers a high budget probably prefers a medium budget to a low one, if the high budget is not a relevant alternative. A multiple-peak ranking such as "low > high > medium" seems less likely. Informally, a person with this ranking finds either a high or a low budget tolerable, but views one between the extremes as less acceptable than either extreme.[72] On the ISO board, the profits of individual participants, however, may not be uniformly increasing or decreasing in the magnitudes being voted on and preferences may not be single-peaked. Consider a transmission access or construction policy that will make available either a high, medium, or low amount of capacity. Some board members (e.g. power marketers) will have single-peaked preferences for more capacity, but others may not. An independent power producer might rank the capacity options "high > low > medium," because high capacity gives it a wider market area and higher expected profits, low capacity lets it exert monopoly power in a load pocket, and medium capacity gives it neither. An environmentalist might have the same ordering, preferring either extensive access that minimizes local pollution, or low access that furthers a conservation agenda to some intermediate amount.

The larger the fraction of voters without single-peaked preferences, the larger the proportion of possible winning coalitions that will include them, and the more likely are paradoxes, strategic behavior, and inefficient policy

70. The concept first appears in DUNCAN BLACK, THE THEORY OF COMMITTEES AND ELECTIONS (1958). More general mathematical results appear in DONALD G. SAARI, THE GEOMETRY OF VOTING (1994). As an illustration, assume that A, B, and C are to vote on a public school budget, with low, medium, and high as their choices. Single-peaked preferences look like a single mountain, and multiple-peaked ones look like a range. A person with single-peaked preferences whose optimum is a high budget will prefer it to a medium budget, but if only medium and low budgets are possible then that person prefers medium. A single-peaked person who is happiest with a medium budget prefers it to the two extremes, but if high and low are the only choices might favor either over the other.

Assume voters have the following single-peaked orderings on budget size and no other issues are before them:

A: High > Med > Low

B: Med > Low > High

C: Low > Med > High

For any vote sequence, the medium budget wins. If, however, B's ranking is changed to: High > Low > Med, which is not single-peaked, the paradox returns and the winning budget depends on the sequence of choices. B's new preferences rank a distant alternative to "high" as less dissatisfying than a nearby one.

71. Single-peakedness in shareholder preferences is discussed in more detail in Frank Easterbrook & Daniel Fischel, *Voting in Corporate Law*, 26 J. LAW & ECON. 395 (1983).

72. The example comes from Edgar K. Browning, *A Note on Cyclical Majorities*, 12 PUB. CHOICE 111 (1972).

choices.[73] The number of possible methods of forming a winning coalition increases very rapidly as the size of the board increases.[74] A winning coalition is constructed by bundling policies into packages that attract enough votes to prevail. The higher the number of possible coalitions, the larger the number of possible packages and the less likely that the content of any one will be economically efficient. Metaphors of "vote trading" are reminders that members of the coalition are in effect purchasing votes. If the policy being voted on is efficient, it creates new economic value (e.g. by legitimizing a new type of market transaction) that can in principle benefit all parties, while an inefficient policy (e.g. monopolistic restrictions on transmission access) creates gains for the winners at the expense of the losers.[75]

The exact membership of a winning coalition will be determined by circumstances of time and place. A group that finds itself with slightly less than a majority need only attract the votes of a small number of others, whose identity depends on situational details. The general indeterminacy of political coalitions has a clear consequence. Since only a majority is necessary to carry the day, the winning policy is more likely to depend on its value to the coalition rather than its value to the group as a whole.[76] Since the majority changes with the subject matter at hand, policies constructed around minimal winning coalitions are not likely to be mutually consistent and economically efficient. Unless preferences are single-peaked, as they are in a Transco, the coalition-forming aspects of collective choice virtually ensure that economic efficiency and wealth redistribution will be in conflict during the policy formation process.[77]

The indeterminacy of coalitions is of less consequence for decisions by corporate boards. Because directors act as agents of shareholders who must by law be treated equally, coalitions to force redistributions among shareholders will not arise. Uncertainty about outcomes will present the board with difficulties in choosing among alternative policies, but each member has a legal obligation and most have economic interests in policies that maximizes shareholder value. The heterogeneous directors are in effect compelled to have single-peaked preferences for higher value of the firm, and to consider little other than that value in making their choices. Corporate decisions are less likely to encounter the inconsistencies, strategic conduct, and indeterminate coalitions that ISO governance produces. For a firm that operates in competitive markets, higher profits indicate that resources are being used more efficiently to create economic value. The di-

73. Attempting to identify successful interest groups, Levmore argues that they "act where there are cycling majorities or other aggregation anomalies and, therefore, where there are excellent opportunities to influence agenda setters or to bargain for the formation of winning coalitions." Saul Levmore, *Voting Paradoxes and Interest Groups* 28 J. LEG. STUDIES 259 (1999).

74. A winning coalition of two persons can be chosen from a group of three in three distinct ways, three persons from five in 10 ways, and 13 from 25 (California's board size) in 5.3 million ways.

75. WILLIAM H. RIKER, THE THEORY OF POLITICAL COALITIONS (1962).

76. Parties with more influence at the ISO's constitutional stage can attempt to bias its membership toward the formation of favorable coalitions. Utilities organizing an earlier Midwest ISO proposed that its board consist of equal numbers of transmission-owning and transmission dependent utilities (and no other interests represented), with a chair chosen by the group. *Eight Midwest Utilities Propose ISO but Arrangement Wouldn't be Exclusive*, ENERGY REP., May 27, 1996.

77. Sam Peltzman, *Toward a More General Theory of Regulation*, 19 J. LAW & ECON. 211 (1976).

rectors of a firm with monopoly power have clear incentives to exercise it if doing so maximizes shareholder wealth. The indicated remedy is to constrain their ability to exercise it, whether by regulation, antitrust, or exposure to market competition. Imposing such a remedy maintains incentives for consistent, value-maximizing decisions in a way that imposing an ISO cannot.

C. Regulation, Monitoring, and Bureaucracy

Operations of both ISOs and Transcos will be constrained by FERC policies that may give varying weights to economic efficiency, agency precedent, commissioner preferences, and political reality. Regulations incorporate both economic and non-economic considerations, but the state of the market that ensues also depends on the response of the entity being regulated. The orientation of corporate boards toward shareholder value allows the Commission to assume with some confidence that a Transco will respond predictably when faced with newly-imposed (or newly-lifted) constraints. The FERC's ability to make this assumption greatly simplifies determination of the content of its regulations. By contrast, if an ISO has objectives unrelated to profit and efficiency, the Commission will have a harder time formulating policies that they can be sure will induce desired behavior. If the ISO's objectives are unclear or uncertain because it is governed by shifting coalitions, the effects of a given regulation on its behavior will be even less predictable. The greater predictability of a Transco's responses to regulation casts doubt on the common assertion that the nonprofit nature and democratic governance of an ISO make it a better candidate for light-handed regulation.[78] As that organization responds in unforeseen ways, regulators will probably have to monitor it more assiduously and possibly change policies more frequently. If transmission-owning utilities succeed in dominating ISO governance, these inconsistencies are less likely, and the FERC can regulate the organization as if it were an ordinary transmission monopolist. This, however, is the situation that ISOs are ostensibly being instituted to avoid.

Ideally, the directors of a Transco will make decisions that are congruent with the desires of shareholders, and compensation plans or stock ownership requirements can further incentivize them.[79] A corporate management that successfully insulates itself from shareholders gains power to institute self-serving and potentially inefficient policies that shareholders cannot deter at reasonable cost. If all shareholders have small individual stakes, they now face a free rider problem. No individual has strong incentives to actively monitor management, and an activist produces benefits for others who do not bear the costs of the effort. Inept management may, however, impose such substantial losses on large investors that they are motivated to engage in activism while knowing that others will capture some of its benefits.[80] In the limit, an investor can acquire a con-

78. *See, e.g.*, McCamant et al., *supra* note 1.

79. Transcos taking the form of limited liability corporations that pool utility assets will require some other method of incentivizing directors, who will almost surely be required to abandon all financial ties to the utilities. This issue has yet to be thought through with the detail it deserves. *Entergy Petition*, *supra* note 2, at 10, 13.

80. The stakes of large investors appear substantial enough to induce activism. In a sample of 511 large U.S. corporations, the five largest shareholders held an average of 24.8 percent of common stock outstanding.

trolling interest in the company's stock and throw out the old management.[81] Recent economic research has shown that the market for corporate control often functions efficiently, and that superficial statements about free-riding shareholders and managerial autonomy do not adequately describe its workings.[82]

The mechanisms of corporate control do not apply to ISOs. An ISO has neither shareholders nor a profit motive, but decisions by its board affect asset values. Some of its governors may prefer inefficient decisions or decisions that transfer the wealth of others to the interests they represent.[83] Unlike corporate shareholders, those who lose from inefficient ISO decisions have no tradeable claims on the organization's wealth. Lacking such claims, their best alternatives may be to try influencing the ISO's internal politics and intervening at regulatory agencies. Free rider problems, conflicting governance interests, and the absence of a share market all increase the ability of an ISO bureaucracy to gain autonomy and distance itself from external controls. If so, the organization's staff can take a more active role in formulating policy and determining the issues that come before the governors.[84] In doing so, it can become an agenda-setter with the concomitant ability to influence outcomes.[85] Inherent in the ISO's governance structure is the potential for it to become independent in a way that was probably never intended, with potentially adverse consequences for the efficiency with which it operates both itself and the system.[86] There is, however, an odd upside to bureaucratic control: it renders collective choice paradoxes less likely because

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Harold Demsetz & Kenneth Lehn, *The Structure of Corporate Ownership: Causes and Consequences*, 93 J. POLIT. ECON. 1155, 1157 (1985).

81. The text abstracts from the Public Utility Holding Company Act, which produces some complications unique to electricity.

82. EASTERBROOK & FISCHEL, *supra* note 30, at 109-144; Sanjay Bhagat, Andrei Shleifer, and Robert W. Vishny, *Hostile Takeovers in the 1980s: The Return to Corporate Specialization*, BROOKINGS PAPERS ON ECONOMIC ACTIVITY (SPECIAL ISSUE, 1990), at 1; Andrei Shleifer & Robert W. Vishny, *Large Shareholders and Corporate Control*, 94 J. POLIT. ECON. 461 (1986); Randall Morck et al., *Alternative Mechanisms for Corporate Control*, 79 AM. ECON. REV. 842 (1989).

83. One critical utility representative described the PJM-ISO as having "a governance structure that has evolved into 'politics of popularity' and the perception of a 'secret society,' and decisions driven by perception rather than the cost/benefit analysis usually conducted by for-profit companies." *Fiery Panel Discussion During Energy Lawyers' Conference Results in Calls for FERC's Disbandment*, FOSTER ELEC. REP., Dec. 16, 1998, at 1 [hereinafter *Fiery Panel Discussion*].

84. Stakeholders accused the California ISO of sidestepping them in forming its plan to redesign the state's ancillary services markets. The ISO replied that it "has an obligation to apply its judgment to the issues, rather than simply to ratify the choices of the stakeholders whose representatives attend meetings, as [one intervenor] would prefer." *Calif. ISO Calls Generators' Concerns over Plant Control Plan Unfounded*, POWER MARKETS WK., April 19, 1999, at 10. An officer of Northern States Power, which until recently favored Transcos, noted prior to the corporate change of heart (concurrent with a merger application) that "new ISOs will create bureaucracies that will find ways to survive whether the ISO is a good idea or not." Robert Smock, *ISOs Level Playing Field*, ELEC. LIGHT & POWER, Aug. 1998, at 12.

85. For evidence on separation of ownership and control in non-corporate settings, see William A. Niskanen, *Bureaucrats and Politicians*, 18 J. LAW AND ECON. 617 (1975).

86. In another variation, the transmission owning utilities in PJM have told the FERC that their ISO's administrative Office of Interconnection is attempting to give itself excessive authority over transmission, including power to order new construction. The utilities claim that OI's compliance filing at the FERC was not approved by them. *PJM Utilities Complain ISO is Trying to Be Too Independent of Grid Owners*, POWER MARKETS WK., Feb. 23, 1998, at 6.

the real decision-makers are members of a homogeneous group with a common interest in the survival of their organization.[87]

VII. MARKET POWER AND COMPETITION

A. Monitoring Monopoly

Even if its rates are regulated, a transmission monopolist can harm competition by denying access to facilities. The transmission owner's incentive to exclude may be particularly strong if it also owns generation.[88] As noted above, it is easy to envision restrictive policies initiated by governing coalitions that include non-transmission owners. If such coalitions can form, assertions that the ISO is a less likely monopolist than the Transco, those coalitions can lose their force. The ISO's nonprofit status only ensures that denial does not enrich the organization itself. The scope for monopolizations may even be greater in the ISO, since regulation may be unable to reach or even estimate the profits earned by non-utilities that succeed in bending policy to favor themselves. By contrast, regulators will continue to have their customary jurisdiction over the Transco, including the ability to investigate familiar operations and finances. Perhaps regulation's most oft-cited flaw is that interest groups, sometimes the regulated themselves, may "capture" a nominally independent agency to serve their own interests.[89] The board of an ISO is a potential arena for the same types of politics that have hitherto occurred in regulated settings, and may be as likely to be captured by coalitions of represented interests.

Barring principal-agent problems, corporate management acts to increase shareholders' wealth subject to legal and regulatory constraints. Those constraints explicitly account for the interests of others, whether in the form of antitrust laws or open-access requirements. Whatever the ultimate antitrust status of an ISO, a Transco begins its life under a well-defined set of rules that constrain its monopoly power.[90] The Transco's managers may wish to test or evade those rules, but treble damages for a successful antitrust plaintiff may induce desirable (as well as questionable) lawsuits. There is also little foundation for the Federal Trade Commission's belief that the psychological climate in an ISO-governed market will be more conducive to competition than it is when a Transco rules.[91]

87. The ubiquity of institutional rules that cannot easily be changed by elected officials has been put forward as an explanation for the relative lack of paradoxical outcomes in contemporary legislatures. Kenneth A. Shepsle & Barry R. Weingast, *Struture-Induced Equilibrium and Legislative Choice*, 37 PUB. CHOICE 503 (1981). The applicability of this reasoning to ISOs is unclear.

88. Even if a transmission owner does not control generation, under some congestion pricing regimes it may have incentives to defer investment in new facilities or to use its downstream operating practices to create upstream bottlenecks.

89. George J. Stigler, *The Theory of Economic Regulation*, 3 BELL J. ECON. & MANAGEMENT SCI. 1 (1970).

90. Questions of liability for antitrust and related violations by a nonprofit ISO thus far remain unanswered.

91. Testifying on Entergy's proposed Transco, the FTC told the Mississippi Public Service Commission that unlike a Transco, an ISO would manage and operate transmission "so as to avoid the potential vertical and horizontal threats posed by the Transco while capturing the vertical integration advantages." *FTC Opposes Entergy's For-Profit 'Transco' Plan, Favors ISO Regime*, SOUTHEAST POWER REP., Oct. 16, 1998, at 2. Even

The ISO itself may be like a "revolving door" agency, through which upwardly mobile officials pass on their way to lucrative private sector positions.[92] Such individuals may conclude that single-minded devotion to market efficiency does not always further their long-term personal interests.

Quasi-independent ISO monitoring departments and committees reflect both the politics and the economics of the organizations.[93] In California these committees have substantial autonomy, with uncertain but potentially substantial powers to investigate behavior they find "anomalous."[94] Until recently, the ISO's Market Surveillance Committee asserted that its meetings need not be public.[95] One rationale for monitors is that the ISO's novelty requires dedicated specialists because antitrust and regulation may be unable to quickly detect imperfections and remedy them. Monitoring institutions, however, may themselves be an artifact of ISO constitutional politics. Two of California's transmission-owning utilities initially proposed them in response to the FERC's concerns about market power, a seemingly odd posture for monopolists. The state's transition rules, however, give its utilities an interest in low energy and ancillary services prices, since they must collect their stranded costs in the difference between these prices and frozen retail rates prior to 2002. Reports by California's market monitors have uniformly concluded that the owners of divested utility generation have manipulated bids and contracts to raise energy costs by hundreds of millions of dollars in the first months of the new system's operation.[96]

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if the Transco's subtle anticompetitive acts are policed, the FTC states without evidence that "potential entrants [into generation and marketing] are likely to perceive a continued risk of discrimination in transmission services based on past experience in the industry." *Id.* Arguments such as this one can also be reversed. Marketers have complained that ISOs will chill competition because their rules and operations are often in the hands of former employees of the utilities who will continue to own transmission. *Marketers Fighting Calif. ISO Rules, Worry that Utility Culture Dominates*, POWER MARKETS WK., Dec. 8, 1997, at 1.

92. Ross D. Eckert, *The Life Cycle of Regulatory Commissioners*, 24 J. LAW & ECON. 167 (1981).

93. Politics may also help explain why California has four distinct monitoring bodies. The ISO has an internal Market Surveillance Unit and an appointed Market Surveillance Committee, and the Power Exchange (PX) has analogous internal and external units. While the PX and ISO are required to maintain confidentiality of bids into the energy and ancillary services markets, both of their monitoring committees have expressed preferences that the data be made public, and that they be allowed to collect data on bilateral transactions to ensure that these are also not tainted by monopoly.

94. David B. Raskin, *ISOs; The New Antitrust Regulators?*, 11 ELECTRICITY J. 15 (1998). The FERC recently determined that the California ISO's Market Surveillance Committee (which has exclusive access to some market data) could choose the occasions on which it provides expert witness services for the ISO (e.g. at contested regulatory proceedings), since this is "an element of the MSC's independence." Opinion No. 911, *Redondo Beach, L.L.C.*, 87 F.E.R.C. ¶ 61,208 (1999).

95. The courts have determined that the board of the California ISO need not hold public meetings because it is not a state agency. Until recently its Market Surveillance Committee acted similarly, holding only two public sessions in its two years of existence. The Committee declared its meetings open to spectators (but not to public participation) after a reporter insisted that she not be barred from them. *No More Secret ISO Surveillance Meetings*, CALIFORNIA ENERGY MARKETS, July 16, 1999, at 12.

96. Among others, see Market Surveillance Committee of the California Independent System Operator, *Report on Redesign of Markets for Ancillary Services and Real-Time Energy* (Mar. 25, 1999) <http://www.caiso.com>; and Market Monitoring Committee of the California Power Exchange, *Second Report on Market Issues in the California Power Exchange Energy Markets* (Mar. 9, 1999) <http://www.calpx.com> [hereinafter *Second Report on Market Issues*]. I have authored testimony before the FERC on behalf of generation owners regarding the economic content of these and related reports.

B. Innovation, Investment, and Adaptation

Governance issues aside, ISO advocates can easily show how that organization can manage transmission, allocate it without exercising market power, and run ancillary services markets to advance competition. Their underlying model, however, is one of equilibrium rather than market dynamics. Prior to restructuring, utilities performed the ISO's functions, but not in a market context.[97] If only short-term efficiency matters, it can probably be improved by regulatory innovations that carry lower costs than are necessary to restructure and form an ISO. The more important form of competition in electricity's current state is rivalry to make long-term innovations. The industry is undergoing transformation into services, contracts, and markets whose future configuration no one can know today. Where such uncertainty is pervasive, the transmission operator's incentives to innovate and adapt to the innovations of others should be of at least as much concern as short-term efficiency.

The ISO governance process, however, is likely to be biased against innovation. Few valuable innovations fail to put some established interest at risk. A new market institution, for example, might increase the well-being of consumers, benefit some efficient market participants, and harm some inefficient ones. The lure of profit induces ordinary corporations to regularly jeopardize the established routines of less efficient competitors. The unanimity of a Transco's decision-making process ensures that solicitude for market participants who have been displaced by competition will not block its search for profits. The assortment of interests that govern an ISO will find it more difficult to turn innovative proposals into reality without at least diluting their benefits in order to mollify those adversely affected. Bureaucratic interests at the ISO may also have more influence than employees of a Transco to keep activities in-house when deference to market innovations is warranted.

Mirroring inefficiencies in the collective governance of innovations, the choice process of an ISO may also be less likely than the Transco to induce efficient investment in new transmission. The parallel flow problem has long been a major rationale for large, unitarily owned transmission grids. An entity that owns and operates all of the lines in an area (or has long-term leases on them) will be aware of the opportunity cost of a given transaction everywhere on its system. Utilities have at times been reluctant to build or upgrade transmission because parallel flows allow them to gain from the investments of others without incurring the costs. A regulated for-profit entity that owns a large grid will have incentives to expand capacity because all of these costs are internalized. A collectively-governed nonprofit entity that only operates a grid of independently owned systems will face problems in inducing investment similar to those encountered in systems that do not operate under an ISO. Owners of the individual systems in an ISO may even have stronger incentives to free ride on the investments of others than when operating autonomously. Surrender of control to the ISO reduces the certainty that an owner will see these lines put to the same

97. Utilities may also have performed them more efficiently. The average volume of ancillary services used by the California ISO has been substantially higher than the total used by utilities when they were operating their own control areas. *Second Report on Market Issues*, *supra* note 96, at 25.

value-maximizing (non-monopolistic) uses that the owner itself would have chosen.

There is currently no factual basis for assertions that Transcos will excessively favor transmission solutions while ISOs will consider the long-term aspects of the system more rationally.[98] Even if Transcos would inefficiently favor transmission, the relevant comparison is with the collective choices made in an ISO, which depend on its internal politics and its constitutional power to control transmission owners.[99] Depending on the membership of an ISO's majority coalition, almost any pattern of over- or under-investment is conceivable. Free-rider incentives of transmission owners not to invest may (or may not) overcome incentives to overcapitalize. Incumbent generation owners and others may have incentives to foreclose or delay the new construction, and the votes to carry the day with the ISO. Counsel for the California ISO recently stated that the organization's inability to induce transmission expansion has made it dependent on costly "must-run" plants to maintain reliability.[100] The California board is currently divided over a proposal (put forth by its staff) that new generation owners pay the entire cost of grid improvements if their connection causes congestion. Supporters in the ISO argue that the requirement "forces those companies who want to compete to be more efficient than their opponents," and "keeps fly-by-night companies out of the process by making sure that any competitive supplier has the revenue to invest in the grid."[101] The PJM ISO is facing a similar problem, with the additional question of who is to have priority in a queue of generators seeking to interconnect. There, an ISO source said that "the queue order was designed to prevent companies with little, if any, background in the industry from gaining access and threatening the reliability of the grid."[102]

The future of electricity is so sufficiently uncertain that no one can be sure that any ISO or Transco formed today will have the size, geographic scope, or membership to continue operating efficiently as markets evolve. Like other corporations, a Transco can, with the approval of shareholders and regulators, take initiatives to change its own organization.[103] For the ISO, adding or deleting rep-

98. These views have been espoused by environmentalists and the FTC. *Comments Submitted in Advance of FERC's ISO Conference Reveal Wide Range of Views on What the Perfect ISO Should Look Like and What FERC's Role Should Be in Developing ISOs,* FOSTER ELEC. REP., Apr. 15, 1998, at 1; and *FTC Opposes Entergy's For-Profit 'Transco' Plan, Favors ISO Regime*, ELECTRIC UTIL. WK., Oct. 5, 1998, at 4. Since ISOs will not have control of competitive generation investments (but may influence their siting), the nature of the alternatives beyond transmission that they can consider is unclear. The relative waste from overinvestment and premature investment may not be substantial. Transmission accounts for 2% of utility operating expenses, 11% of the capital stock, and 6% of utility revenues. Comments of Paul L. Joskow, No. RM99-2 (Aug. 13, 1999).

99. Economic studies of regulation and overcapitalization by utilities in the past failed to produce consensus results. Leon Courville, *Regulation and Efficiency in the Electric Utility Industry*, 5 BELL J. ECON. 53 (1974), and Robert M. Spann, *Rate of Return Regulation and Efficiency in Production: An Empirical Test of the Averch-Johnson Thesis*, 5 BELL J. ECON. 38 (1974).

100. *Fiery Panel Discussion, supra* note 83.

101. *Rift Among Cal-ISO Board Members Explodes over Transmission Expansion,* ELEC. POWER ALERT, May 5, 1999, at 7.

102. *Reliability Regions Struggle with Generation Interconnection*, ELEC. POWER ALERT, May 5, 1999, at 6.

103. Such obstacles as bond indentures and the provisions of the Public Utility Holding Company Act make the change more difficult in this industry than in most others.

resented interests and changing the assets and markets it operates may upset a pre-existing political balance and make efficient changes in its organizational form more difficult. Flexibility of the organization is critical because no one today can know the efficient size or shape of a regional organization.[104] It may, for example, shrink if distributed generation becomes important or grow if new long-distance transmission technologies arrive. Size and shape will change as power markets evolve, particularly if they move away from the short-term energy exchanges that are the focus of today's policy.[105] Numerous proposals for ISO operating areas have surfaced, ranging from single utilities to states to entire interconnections.[106] If there is no universally optimal size that is invariant among regions or over time, adaptability is a critical attribute of the transmission operator. That adaptability has certainly been a factor in the long-term survival of the corporate form itself.

VIII. CONCLUSIONS

ISOs are less embodiments of theoretical ideals than they are strategic responses to market and regulatory changes. They arrived concurrently with the threat of retail competition, proposed and supported by groups with economic interests, some clearly inimical to competitive markets. Their logic is superficially appealing: since private monopolies can produce excessive profits, the antidote is a collective entity that does not operate for profit. The ISO cannot be such an antidote (and none may in fact exist), since it will provide a forum for profit-seeking by those whose votes determine its policies. The Transco-ISO debate has misleadingly pitted a familiar-looking corporate entity whose operation and regulation are imperfect against a hitherto unseen institution. The relevant comparison can only be made after thoroughly examining the imperfections of the ISO.

A quick look at the lineup of those who favor ISOs makes the interests more clear. Supporters frequently have diametrically opposed interests, with heavy representation from transmission-owning utilities, public power entities, environmental organizations, self-styled small-consumer advocates, and regulators. Absent from their backers, most are independent power producers, power marketers, and other retail wheeling advocates. Broadly, ISOs are supported by those who have been best at playing the politics of traditional regulation, and opposed by those who have generally been less successful. The opponents are

104. This is certainly clear for the existing ISOs. California's ISO is a localized creature created by the state's politics. New England, PJM, New York, and Texas coincide with preexisting pool areas. Even if these boundaries make sense for the industry as it once was, they do not necessarily also make sense for the markets of the future.

105. In questioning Transcos, FERC Chairman Hoecker asked "[c]an they be optimally sized from the outset?" implying that he or someone else already knows that size, and that an unnamed force pushes ISOs but not Transcos in the direction of optimality. Symposium, *Regionalism in Electricity Markets: It's Time to Have the Debate*, EDISON ELEC. INST., Winter Chief Executive Conference, Jan. 8, 1999.

106. *Entergy Petition*, *supra* note 2 (existing holding company system); *Arizona Utilities to Form First Transco in Stranded Costs Deal*, ENERGY REP., Nov. 9, 1998, at 4 (portion of state); ELCON, INDEPENDENT SYSTEM OPERATORS, PROFILES ON ELECTRICITY ISSUES NO. 18 (Mar. 1997) (Eastern, Western, and Texas Interconnections).

the most likely victims of monopoly as competitive markets open, but they have chosen to reject the institution that will supposedly best protect them.

The FERC and state commissions have been justifiably concerned over new regulatory problems that Transcos will pose. Over a very few years, however, the FERC has seen a multitude of dockets that should have made it equally concerned with ISOs over the same issues. It has become increasingly clear that an ISO is a political institution being called on to do an economic job. It is an institution whose structure invites inefficiency, inconsistency, and dominance by transmission owners, with decisions made by internal processes whose implications no one can fully understand today. Pervasive evidence of strategic politics in ISO filings does not appear to have swayed many regulators from an irrational faith that after ISOs are in place they will be kinder organizations than Transcos could possibly be. An ISO is a fundamentally new type of institution that provides a forum in which a new constellation of interests can experiment with a still unknown repertoire of ways to impede competition, shift costs, and operate inefficiently. Its nonprofit nature will complicate rather than simplify regulation by making it harder to see the substance of self-interest that lies below. Traditional regulation worked best where natural monopoly ruled, costs were easy to track, assets had long service lives, and financial risk was minimal. That situation still describes transmission fairly well, whether it is owned by a single utility or by a Transco.

The development of ISOs is at a critical stage, because a decision to go forward with them is a decision to put in place questionable institutions that are unlikely to vanish of their own accord when a better alternative becomes available. The oft-heard claim that ISOs are transitional institutions on the road to Transcos is unconvincing. There is no reason to expect that politically important interests able to participate in hands-on governance of the ISO will voluntarily give up their power in exchange for no obvious benefit.[107] ISOs are more likely to become massive barriers to the entry of new and more efficient organizations for the control of transmission. Even if ISOs could be terminated with ease, the rationale for making them a way station on the road to Transcos has yet to be articulated.

In our haste to control a monopoly by any means possible, it is worth pausing to consider the fundamental strangeness of the ISO. In no other deregulation or restructuring has there been pressure to take an industry's essential facilities into an environment where their governance is so radically changed, and to assume on faith that an organization superficially unconcerned with profits will provide a superior resolution to threats of monopolistic conduct. No ISO advocate has ever attempted a showing that telecommunications or gas would be more competitive today if only critical decisions about their facilities had been turned over to stakeholder committees. Gas even provides an important part of the template for the Transco. Innovative regulation and market competition to-

107. FERC Commissioner Massey, a strong backer of ISOs, earlier noted that stakeholder boards, nonprofit status, and operation of power exchanges may make ISOs difficult to dismantle. He has stated that "[t]he Commission hasn't given this much thought." *Should ISOs Be Designed to Become Gridcos?*, RESTRUCTURING TODAY, Feb. 26, 1998, at 2. *Compare Transcos Will Evolve from Interim ISOs Utility Say Industry Leaders*, ENERGY REP., Mar. 1, 1999, at 3.

gether moved interstate pipelines from ossification to efficiency, facilitating physical and risk-management transactions that were unimaginable only ten years ago. Electricity producers and consumers deserve the same opportunities, but are unlikely to get them in a regime of ISOs.