

Response: Deregulatory Takings and Breach of the Regulatory Contract: Some precautions

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Gregory Sidak and Daniel Spulber raise a series of important and controversial issues in their article, *Deregulatory Takings and Breach of the Regulatory Contract*.ⁿ¹ As the title of their article suggests, they interpret recent and prospective efforts to deregulate telecommunications and electric power networks as "takings" and recommend that regulated firms should be compensated for "stranded costs." They further argue that the "efficient component-pricing rule" (ECPR) is the appropriate rule for pricing access to the network by entrants. Throughout, they adopt a contractual approach to regulation in which (implicitly) the managers of both regulated firms and regulatory agencies are assumed to behave in a stewardship fashion.

There is much in this approach with which I agree, but I also have a series of reservations. I begin with a sketch of what I see to be Sidak and Spulber's key arguments, after which I express some precautions.

I Key Arguments**A. Regulation as Contract**

Sidak and Spulber's discussion of the regulatory contract opens with an examination of the "economic foundations," which are organized under four headings: Cost Recovery for Transaction-Specific Investment; Opportunism and Asset Specificity; Credible Commitments; and Relational Contracting. As those who are familiar with the New Institutional Economics (NIE) will instantly recognize, the four concepts of contract to which Sidak and Spulber appeal have their origins in the NIE literature. Although I do not purport to be an objective observer on NIE, this approach, I think, is a more instructive way to study the issues than would have resulted had they decided to rely on the more familiar legalistic concepts of contract that are featured in many contract law treatises, in most microeconomics textbooks, and in much of law and economics.

Sidak and Spulber then examine the historical origins of the regulatory contract. As between public interest, capture, and contractual concepts of regulation, Sidak and Spulber take the position that utility regulation had a pragmatic origin,ⁿ² and they subscribe to George Priest's interpretation of regulation in terms of voluntary exchange and contractual adaptation. Priest asserts that "the underlying motivation for the regulation of public utilities in the United States is more mundane than either the idealistic basis of the public interest theory or the craven basis of the economic or capture theories."ⁿ³ Sidak and Spulber quote Priest's elaboration of this motivation:

Public utility companies voluntarily entered contracts subjecting themselves to regulation in order to gain authority to use public rights-of-way for laying gas and water pipes, stringing telephone and electric poles, burying electrical wires, and laying street railway tracks. Regulation of the utility's activities and terms of business resulted from a negotiation between the municipal government and the utility in a context that both parties recognized saved the utility the costs of negotiating with and securing rights from the individual property owners they intended to serve.ⁿ⁴

The resulting regulatory contract is then described by Sidak and Spulber as follows:

The three components of the regulatory contract are entry controls, rate regulation, and utility service obligations. The state commission controls the entry of the utility's competitors and authorizes rates that give the utility's investors the opportunity to earn a "fair" rate of return on their investment. In return, the regulated utility must comply with regulatory accounting procedures for the disclosure of its costs, abide by price regulations, limit its business activities in other markets, invest in sufficient transmission and access services to all customers within its service territory who request service, operate efficiently as determined by the regulatory commission, make only investments that are "prudent," meet regulatory standards for quality of service, and comply with a host of other provisions. n5

Regulation is thus assumed to operate in an instrumental way. Regulators exercise informed oversight and administer rates fairly. Regulated firms are candid, compliant, efficient, and nonstrategic. The public interest is served. As developed below, this is a sharp departure from the NIE.

B. When to Compensate

It was once common in economics to judge the social welfare consequences of a proposed change in public policy by appealing to the Kaldor-Hicks compensation criterion. Sidak and Spulber register a number of objections with this hypothetical compensation criterion, the most important of which is that "as a matter of economic theory and constitutional principle, the Kaldor-Hicks criterion fails to put either the winners or the losers to an actual test of their willingness to pay and their willingness to accept payment, respectively." n6 Because such a criterion is easily manipulated and invites public policy error, Kaldor-Hicks has lost favor among most economists. It is nonetheless alive and well in the pages of many law journals. Sidak and Spulber's cogent critique n7 should help to rid Kaldor-Hicks from the law journals as well.

What then should be the compensation criterion? Sidak and Spulber make a number of interesting observations in this connection, including: (1) it would not be efficient to compensate for slight regulatory takings since this would incur large transaction costs n8 and waste resources; n9 (2) compensation is favored if the burdens of state action are concentrated rather than diffuse; n10 (3) physical invasions of property are always compensated; n11 and (4) failure to compensate will induce "future investors to demand a risk premium from the utility." n12

With reference to these considerations and their reading of the leading Supreme Court opinions dealing with public utilities, Sidak and Spulber conclude that the regulatory contract warrants compensation when stranded costs - defined as "the difference between (1) the public utility's net revenue requirement under regulation and entry controls and (2) the net revenues earned by the utility from those stranded facilities in the competitive market" n13 - result from deregulation. As compared with the typical case of compensation for land-use restrictions, they view the case for compensating stranded costs as "far more compelling." n14 They explain:

The regulatory contract is a detailed contract that imposes obligations on the utility and the regulatory authority. Moreover, the regulatory contract is subject to executive, legislative, and judicial oversight. The formality and continuity of the contract and its oversight reinforce the conclusion that it is reasonable for a public utility to expect that the regulator will discharge its duties under the contract and that the contract is an agreement that may be enforced against the regulator in court. n15

Accordingly, Sidak and Spulber recommend that a regulated utility that is faced with deregulation should receive expectation damages. n16

C. Access Pricing

How shall the regulated industry into which piecemeal entry has become feasible price its sale of access to would-be competitors? Sidak and Spulber observe that "if the utility charges its rival more for the input than it implicitly charges itself, it will have handicapped that rival's ability to compete. The reverse will be true if regulation forces the utility to charge the entrant less for the input than the utility charges itself." n17 They thereafter appeal to Baumol and Sidak's earlier studies of the access issue, which adopt the "efficient component-pricing rule" as the solution to these types of recurrent access pricing problems. n18 Specifically, "the price of an input should equal its average-incremental cost, including all pertinent incremental opportunity costs." n19

II Some Precautions

I have long been persuaded that economic organization in general n20 and regulation in particular n21 are usefully addressed in comparative contractual terms. I am furthermore persuaded that both compensation and pricing are usefully addressed in efficiency terms. Thus, were it not for our differences on how to describe regulation, I could end here with the statement that Sidak and Spulber have it right.

As it turns out, our differences on how to describe regulation are consequential. Thus, whereas Sidak and Spulber would award one-hundred-percent recovery to stranded costs, I argue that the degree of compensation "depends." I also contend that their appeal to the efficient component-pricing rule is problematic.

A. Describing Regulation

Sidak and Spulber describe regulation as a contract between a public utility and a regulatory agency in which both behave in stewardship terms. Managers maximize profits subject to regulatory constraints, make full disclosure in all relevant respects, and eschew strategic behavior. Regulators are well-informed and discharge their regulatory assignment in the public interest. n22

I would back up a step and begin with the question of how to mediate the contractual interface between a natural monopoly and its customers. Given a condition of natural monopoly, there is a need for customers to be assured of supply on acceptable (reliable and nonmonopolistic) terms and for investors to be assured of acceptable (compensatory) returns. Given, moreover, that all long-term contracts are unavoidably incomplete and will need to be adapted to changing circumstances, an adaptable governance structure to which each side can ascribe confidence is required.

Unregulated monopoly poses obvious pricing and dependency concerns for customers. Public ownership is an alternative, but it is beset with bureaucratic problems. Although the use of franchise bidding for natural monopoly has attractions, n23 it is not without problems of its own. n24 Indeed, many of the difficulties were evident to students of natural monopoly at the turn of the century:

Regulation does not end with the formulation and adoption of a satisfactory contract, in itself a considerable task. If this were all, a few wise and honest men might, once in a generation, supervise the framing of a franchise in proper form, and nothing further would be necessary. It is a current fallacy and the common practice in American public life to assume that a constitution or a statute or a charter, once properly drawn up by intelligent citizens and adopted by an awakened public, is self-executing and that the duty of good citizens ends with the successful enactment of some such well matured plan. But repeated experience has demonstrated - what should have been always apparent - the absolute futility of such a course, and the disastrous

consequences of reliance upon a written document for the purposes of living administration. As with a constitution, a statute or a charter, so with a franchise. It has been found that such an agreement is not self-enforcing ... [The] administration may ignore or fail to enforce compliance with those essential parts of a contract entrusted to its executive authority; and legal proceedings ... are frequently unavoidable long before the time of the franchise has expired. n25

Additional problems, moreover, attend franchise renewal when the franchise has expired and new bids are solicited. n26

In consideration of the difficulties that attend unregulated monopoly, public ownership, and franchise bidding, other modes of governance came under review. As described by Priest, n27 the creation of a regulatory agency to mediate the relation between customers and natural monopolist evolved in a pragmatic way.

But there is more to the story than that if, contrary to the instrumental description of regulation on which Sidak and Spulber rely, n28 regulation once begun thereafter is transformed in problematic ways. If regulated firms undertake questionable investments, use their information advantage to obfuscate and deny access, and otherwise behave strategically to deter entry - for which there is abundant evidence n29 - then to describe all behavior antiseptically "as if" there were full and candid disclosure and "as if" all investments were prudent is unwarranted.

Contrary to Sidak and Spulber, I am not persuaded that the "formality of the regulatory process, with notice and written comments and hearings on the record" n30 should be described as a reliable "mechanism for verifying the mutuality of voluntary exchange and a meeting of the minds." n31 Neither am I persuaded that the investments made by a natural monopolist are assuredly "prudently incurred" n32 because "under the established regulatory process, regulators and intervenors carefully scrutinized the utility's investments before they were made." n33 Finally, although this goes unmentioned, Sidak and Spulber appear to assume that regulated firms are operated in least-cost ways (i.e., with an absence of slack). That is unduly sanguine.

Suppose instead that regulation is "defective" in all of these respects. What if the managers and workers in regulated natural monopolies acquire deep knowledge about the industry and have more and better information than both the regulatory agencies and, especially, their customers? What if they can and do disclose this information in a selective way, thereby promoting their (sometimes strategic) purposes and covering up possible cost excesses and/or investment mistakes? What if regulators with an eye to future employment opportunities have incentives to be less than vigilant? And what if regulators, like many others, prefer an easy life?

Thus, although the pragmatic origins of the regulation story told by Priest, and subscribed to by Sidak and Spulber, precludes the rival precapture theory of regulation, n34 these very same pragmatic origins do not preclude the subsequent capture of regulation. By contrast with precapture, which entails strategic pre-positioning, capture is a much simpler evolutionary outcome.

The analytical need is to go beyond pragmatic origins - whereby an intendedly "neutral" or "instrumental" governance structure is created to mediate the contract between the natural monopolist and its customers - and explore follow-on effects. If one of the parties to this contract enjoys informational, organizational, and influence advantages over the other and over the contract mediating agency, are there predictable future consequences? The possibility that regulation will be "captured" by the natural monopolist surely warrants consideration. Sidak and Spulber make no provision for any such transformation in the regulatory contract, even though there is a long and relevant literature. n35

Note in this connection that to argue that regulation is flawed does not establish that there is a superior feasible alternative. Rather, because all feasible alternatives are flawed as compared with a hypothetical ideal, and because choices need to be made from the feasible set, extant regulation may be the best that can be done. Being the best of a flawed lot is commendable, but that does not warrant that regulation be described in antiseptic terms. Rather, the regulatory contract needs to be described as it is, warts and all - whereupon compensation and pricing rules that are derived under (implicit) assumptions of nonstrategic and nonpoliticized behavior may need to undergo revision.

The upshot is that Sidak and Spulber appeal to the New Institutional Economics in a selective way. They invoke opportunism to support their argument that compensation should be paid for stranded investments. However, they ignore opportunism as it relates to the transformation of regulation through capture. The attendant possibilities that some investments are not prudent and that slack practices are responsible for avoidable cost excesses are thus never entertained. Such an asymmetric treatment of opportunism is contrary to the New Institutional Economics, which always and everywhere involves a comparative assessment of alternative feasible forms. n36

B. Compensation

Although Sidak and Spulber make reference to Frank Michelman's treatment of "just compensation," n37 and while many of the indicia to which they refer appear to be in agreement with his, they do not explicitly ground their compensation arguments on Michelman but rely mainly on their reading of SupremeCourt cases. The fact that Michelman's treatment has been disputed by others could be a contributing factor.

According to Louis Kaplow, Michelman's analysis of compensation is wrong or muddled. n38 Lawrence Blume and Daniel Rubinfeld contend that "Michelman's analysis of demoralization and settlement costs is somewhat sketchy, and the efficiency implications of that analysis are not clear." n39 My own assessment of Michelman is more favorable. As interpreted elsewhere, the basic Michelman argument is in three parts: the immediate loss of value that accrues to those adversely affected by a regulatory or other change; the future loss of value that accrues to society if these immediate losses are not compensated; and the costs of administering compensation if compensation is paid. n40

Assuming that the government has decided to go ahead with its regulatory change, the first of Michelman's concerns - the immediate loss - will accrue whether or not compensation is paid. n41 The question of whether to compensate then turns on a comparison of the expected future costs - the "demoralization costs" - that will accrue in the event compensation is not paid with the administrative costs that will be incurred if compensation is paid. The rule is: Pay compensation if the expected future costs exceed the administrative costs but not otherwise.

These expected future costs are, in effect, a reputation effect penalty for failure to pay compensation. Social costs accrue because uncompensated losers and interested observers can take adaptive action, by demanding a risk premium and by directing their investments to what are perceived to be more secure (but otherwise less productive) projects. If investments of one kind are perceived to be especially vulnerable, assets will be redeployed to reflect the added hazards.

Michelman couples this concept of farsighted contracting - look ahead, perceive hazards, take adaptive action - with a series of criteria by which to judge when demoralization costs (which accrue to society, but have their origins in the adaptive actions of investors) will be especially great. His argument that the decision of whether to compensate should be decided on efficiency terms (in which the reputation effect costs of noncompensation are compared with the

administrative costs of compensation) by appealing to a series of common sense criteria seems to me to be exactly right. n42

Applying the Michelman criteria to the regulatory contract/regulatory process as Sidak and Spulber describe it, according to which the natural monopolist and regulatory agency are well-informed and behave in benign ways, I come out where Sidak and Spulber do: compensate the natural monopolist for the stranded costs of deregulation. Thus deregulation is a (1)purposeful act with (2)foreseeable adverse consequences that are both (3)great and (4)concentrated. Additionally, (5)other regulated industries and their investors are watching, hence future investments can be repositioned and the future cost of capital will reflect perceived hazards, and (6)the terms under which future natural monopoly technologies will be regulated will reflect stranded-cost hazards. All of these factors favor compensation.

Suppose, however, that regulation "as we know it" is different. Suppose that actual regulation is attended by managerial discretion, strategic behavior, and regulatory capture. Does this have a bearing on compensation?

Also, what should we make of the disparity between the full compensation intention that Sidak and Spulber ascribe to the regulatory contract and the actual language of the contract? Not only do they hold that "the purpose of a regulatory contract is to provide for recovery of 'economic costs,' by which we mean the full cost of an activity," but farsighted utilities would "not have undertaken the extensive investments required to provide regulated service within their franchise region without the opportunity to recover their costs." n43 Given the self-evident hazard that is posed by making large, durable, nonredeployable investments, where in the regulatory contract is this hazard acknowledged and what security has been provided? Where is the compensation clause? What is to be inferred from its absence?

Ignorance is one possibility, but a more plausible explanation is that the parties were aware that to guarantee compensation for all stranded costs could induce wasteful excesses of managerial discretion (hence high costs) as well as strategic anticompetitive investments (which have the purpose and effect of deterring and disciplining rivals). The actual regulatory relation as I describe it, as against the ideal regulatory relation described by Sidak and Spulber, therefore signals "precautions." Guaranteed compensation is a heads-I-win/tails-you-lose proposition in the context of the regulatory scenario that I advance.

Indeed, if regulation proceeds in the flawless way described by Sidak and Spulber, why not describe nationalization in this same way? There were, after all, those who once counseled that:

The type of ownership of the means of production is much less important for an enterprise's efficiency than the quality of its management. Among other features, the tendency toward bureaucracy should be minimized. So efficiency considerations need not be a stumbling block if public enterprise is chosen as a means for furthering a country's development. n44

If stranded costs pose a regulatory problem for which nationalization is part of the solution - in that "if a state chooses to abrogate the regulatory contract with an investor-owned utility ... [it could] 'nationalize' the utility, pass[] the stranded costs and entry subsidies on to taxpayers as a whole ... , [and subsequently] resell the ... enterprise ... after all such costs had been recovered and subsidies ended" n45 - why not avoid the complications that attend regulation by going to public ownership directly?

Flawless public ownership, however, is no more a feasible alternative than is flawless regulation. I raise it only to emphasize the need to face up to the actual (as against ideal) properties of all forms of organization. Indeed, for the purposes of this Comment, I will take it that regulation

(with its flaws) is superior to public ownership (with its flaws). That does not, however, excuse the need to examine compensation for stranded costs in the context of flawed regulation.

If guaranteed compensation for stranded costs invites excesses of managerial discretion and strategic investment that would be checked, in some degree, by making compensation contingent on a legal review of prudential investment (which is different from standard regulatory reviews), then the possibility of nonprudential stranded costs must be admitted. To be sure, legal reviews on the merits would not be done routinely. These would be reserved for unusual regulatory changes, of which deregulation is one.

The object of such reviews, moreover, is less to penalize investment excesses ex post than it is to deter investment excesses ex ante. Out of awareness that nonprudential investments can be disallowed, even though they have been approved by a (compliant) regulatory agency, investors and managers will be more judicious.

To be sure, sorting investments as between strategic/nonstrategic and prudent/imprudent is a daunting task. If, however, private ownership/rate of return regulation/contingent compensation for prudent investments has net advantages over the Sidak-Spulber alternative (private ownership/rate of return regulation/guaranteed compensation for all stranded costs), then it wins the comparative institutional competition. The fact that the actual regulatory contract is more consistent with my description can be interpreted as indirect evidence for my position.

C. Pricing

Concerns of several kinds arise in considering whether to implement the efficient component-pricing rule suggested by Sidak and Spulber. n46 First, as developed by Jean-Jacques Laffont and Jean Tirole, and assuming that components are perfect substitutes, the following assumptions are needed to make the ECPR optimal: "the regulator observes the monopoly's marginal cost on the competitive market"; n47 "the entrant has no monopoly power"; n48 "the technologies exhibit constant returns to scale"; n49 and "the benchmark pricing rule is marginal cost pricing." n50 Those are strong assumptions.

Second, there are also practicality, operationality, efficiency and other benchmark considerations. With respect to efficiency, Baumol and Sidak expressly concede, as they must, that "a complication arises if the [incumbent] is not an efficient supplier ... If the firm is inefficient, it becomes necessary to adjust its cost figures downward by appropriate amounts." n51 Sidak and Spulber make no reference to this caveat, but allowance for inefficiencies of both slack and strategic kinds is needed.

Relatedly, Sidak and Spulber - as well as economists in general - need to be attentive to actual practice. Economists are fond, for example, of prescribing marginal cost pricing as the appropriate internal transfer pricing rule. That makes for good theory, but what is to be made of the fact that observed practice deviates systematically from this rule? n52

One possibility, when theoretical prescriptions are not approximated by practice, is that practice is defective. Sometimes, however, the adequacy of the theory should be questioned. What Ronald Coase has disparagingly referred to as "blackboard economics" n53 is sometimes the culprit.

Although the analogy is not exact, the ECPR criterion reminds me of the predatory pricing criterion proposed by Philip Areeda and Donald Turner. n54 According to Areeda and Turner, the appropriate test for predation is whether a firm has set prices below marginal cost. n55 Such a criterion appeals to an efficiency ideal but is beset with severe measurement problems and ignores strategic considerations of both pricing and investment. n56 Albeit elementary that

allowance should be made for measurement problems and strategic incentives in designing a predatory pricing rule, established firms quickly endorsed the Areeda and Turner rule.

Similar considerations apply to the ECPR. Not only are severe measurement problems posed, but strategic investment concerns arise. Established firms (sitting monopolists, to whose network outsiders seek access) will, I predict, embrace the ECPR with alacrity.

To be sure, the fact that the ECPR is flawed does not establish that there is a superior feasible alternative. The need to explore alternative feasible rules and procedures in a realistic way is nevertheless posed. Such a comparative institutional undertaking may be too much to expect of the authors of what is already an ambitious article. Awaiting such an undertaking, however, Sidak and Spulber should be more circumspect.

III Concluding Remarks

My reservations with Sidak and Spulber notwithstanding, there is much with which I agree. For one thing, I agree that a contractual approach to regulation in which transaction cost economics features are prominent has much in its favor. n57 Attention is thus appropriately focused on (1) the attributes of the assets, (2) the condition of uncertainty and the unavoidable incompleteness of contract, and (3) the importance of embedding contracts in governance structures that mitigate hazards and infuse confidence (with special attention to credible commitments). But it is furthermore important to (4) describe feasible modes of organization as they are - whence appeal to benign or otherwise ideal forms of organization is disallowed.

The ramifications of this last are disconcerting. For one thing, those who would assess the comparative efficacy of alternative modes of organization need to acquire a lot of detailed knowledge about the mechanisms of governance through which alternative modes work. Second, and related, optimality techniques that apply to benign (or nearly benign) forms of organization may be inapplicable. A tradeoff is thereby posed, as public policy analysis simultaneously becomes more relevant and more cumbersome. The added costs of microanalytic detail notwithstanding, I come down in favor of the propositions that (1) institutions are important, (2) institutions are susceptible to analysis, and (3) public policy analysis should eschew hypothetical ideals in favor of comparative institutional analysis of alternative feasible forms. n58

FOOTNOTES:

n1. J. Gregory Sidak & Daniel F. Spulber, *Deregulatory Takings and Breach of the Regulatory Contract*, 71 N.Y.U. L. Rev. 851 (1996).

n2. See *id.* at 898.

n3. George L. Priest, *The Origins of Utility Regulation and the "Theories of Regulation" Debate*, 36 J.L. & Econ. 289, 303 (1992).

n4. Sidak & Spulber, *supra* note 1, at 898-99 (alteration in original) (quoting Priest, *supra* note 3, at 303).

n5. *Id.* at 907.

n6. *Id.* at 941.

n7. See *id.* at 939-41.

n8. See *id.* at 937.

n9. See *id.* at 936.

n10. See *id.* at 940-41.

n11. See *id.* at 946.

n12. See *id.* at 979.

- n13. *Id.* at 921-22 (emphasis in original).
- n14. *Id.* at 945.
- n15. *Id.*
- n16. See *id.* at 919.
- n17. *Id.* at 972.
- n18. William J. Baumol & J. Gregory Sidak, *Toward Competition in Local Telephony* 110-16 (1994).
- n19. Sidak & Spulber, *supra* note 1, at 973.
- n20. See generally Oliver E. Williamson, *The Economic Institutions of Capitalism* (1985); Oliver E. Williamson, *Markets and Hierarchies: Analysis and Antitrust Implications* (1975); Oliver E. Williamson, *The Mechanisms of Governance* (1996) [hereinafter Williamson, *Mechanisms*].
- n21. See generally Victor P. Goldberg, *Regulation and Administered Contracts*, 7 *Bell J. Econ. & Mgmt. Sci.* 426 (1976); Oliver E. Williamson, *Franchise Bidding for Natural Monopolies - In General and With Respect to CATV*, 7 *Bell J. Econ. & Mgmt. Sci.* 73 (1976).
- n22. See Sidak & Spulber, *supra* note 1, at 907.
- n23. See, e.g., George J. Stigler, *The Organization of Industry* 18-19 (1968); Harold Demsetz, *Why Regulate Utilities?*, 11 *J.L. & Econ.* 55, 63 (1968); Richard A. Posner, *The Appropriate Scope of Regulation in the Cable Television Industry*, 3 *Bell J. Econ. & Mgmt. Sci.* 98, 111-16 (1972).
- n24. See Williamson, *supra* note 21, at 77-83.
- n25. Walter L. Fisher, *The American Municipality*, in 1 *Municipal and Private Operation of Public Utilities, Part I*, at 33, 39-40 (Commission on Public Ownership and Operation ed., 1907).
- n26. See Williamson, *supra* note 21, at 83.
- n27. See *supra* text accompanying note 4.
- n28. See *supra* text accompanying note 5.
- n29. See Alfred E. Kahn, 2 *The Economics of Regulation: Principles and Institutions* 47-94 (1971).
- n30. Sidak & Spulber, *supra* note 1, at 997.
- n31. *Id.*
- n32. *Id.* at 925.
- n33. *Id.*
- n34. See generally Gary S. Becker, *A Theory of Competition Among Pressure Groups for Political Influence*, 98 *Q.J. Econ.* 371 (1983); Sam Peltzman, *Toward a More General Theory of Regulation*, 19 *J.L. & Econ.* 211 (1976); George J. Stigler, *The Theory of Economic Regulation*, 2 *Bell J. Econ. & Mgmt. Sci.* 3 (1971).
- n35. See generally Marver H. Bernstein, *Regulating Business by Independent Regulatory Commission* (1955).
- n36. See, e.g., Williamson, *Mechanisms*, *supra* note 20.
- n37. Frank I. Michelman, *Property, Utility, and Fairness: Comments on the Ethical Foundations of "Just Compensation" Law*, 80 *Harv. L. Rev.* 1165 (1967).
- n38. Louis Kaplow, *An Economic Analysis of Legal Transitions*, 99 *Harv. L. Rev.* 509, 560-61 (1986).
- n39. Lawrence Blume & Daniel L. Rubinfeld, *Compensation for Takings: An Economic Analysis*, 72 *Cal. L. Rev.* 569, 579 (1984).
- n40. See Oliver E. Williamson, *Administrative Decision Making and Pricing: Externality and Compensation Analysis Applied*, in *National Bureau of Economic Research, Inc., The Analysis of Public Output* 115, 119-29 (Julius Margolis ed., 1970).

- n41. Note, however, that compensation rules have ex ante as well as ex post effects. Confronted by the prospect of having to pay compensation, governments will be deterred from undertaking problematic programs.
- n42. For contrary views, see Peter D. Steiner, Comment, in *The Analysis of Public Output*, supra note 40, at 136, 136-38; Susan Rose-Ackerman, *Against AdHocery: A Comment on Michelman*, 88 *Colum. L. Rev.* 1697, 1707-11 (1988).
- n43. Sidak & Spulber, supra note 1, at 880.
- n44. Jan Tinbergen, *Development Cooperation as a Learning Process*, in *Pioneers in Development* 315, 326 (Gerald M. Meier & Dudley Seers eds., 1984).
- n45. Sidak & Spulber, supra note 1, at 994.
- n46. *Id.* at 972.
- n47. Jean-Jacques Laffont & Jean Tirole, *Access Pricing and Competition*, 38 *Eur. Econ. Rev.* 1673, 1693 (1994). For a related treatment, see Nicholas Economides & Lawrence J. White, *Access and Interconnection Pricing: How Efficient is the "Efficient Component Pricing Rule"?*, 40 *Antitrust Bull.* 557, 559-60 (1995).
- n48. Laffont & Tirole, supra note 47, at 1693.
- n49. *Id.* at 1694.
- n50. *Id.*
- n51. Baumol & Sidak, supra note 18, at 83.
- n52. See, e.g., Robert G. Eccles & Harrison C. White, *Price and Authority in Inter-Profiter Center Transactions*, 94 *Am. J. Soc.* S17, S18-19 (Supp. 1988); Howard A. Shelanski, *Transfer Pricing and the Organization of Internal Exchange* (1993) (unpublished Ph.D. dissertation, University of California, Berkeley).
- n53. See R.H. Coase, *The Firm, the Market, and the Law* 19, 28-29, 179 (1988).
- n54. Phillip Areeda & Donald F. Turner, *Predatory Pricing and Related Practices Under Section 2 of the Sherman Act*, 88 *Harv. L. Rev.* 697, 712 (1975).
- n55. *Id.*
- n56. See Oliver E. Williamson, *Predatory Pricing: A Strategic and Welfare Analysis*, 87 *Yale L.J.* 284, 292-93 (1977). The strategic pricing concern is that prices will be set contingently, depending on whether an entrant has appeared or vanished. The strategic investment concern is that established firms will pre-position in relation to whatever rule is adopted. Areeda and Turner make allowance for neither.
- n57. For a recent overview and summary, see Keith Crocker & Scott Masten, *Regulation and Administered Contracts Revisited: Lessons from Transaction-Cost Economics for Public Utility Regulation*, 9 *J. Reg. Econ.* 5, 13-28 (1996).
- n58. On the first two of these, see R.C.O. Matthews, *The Economics of Institutions and the Sources of Economic Growth*, 96 *Econ. J.* 903, 903-08 (1986). On the third, see Williamson, *Mechanisms*, supra note 20, at 195-213; Avinash K. Dixit, *The Making of Economic Policy: A Transaction Cost Politics Perspective* (1996).