

Regulatory Takings Without Confiscatory Returns

Dennis L. Weisman[†]

In regulated industries, including telecommunications, electric power, and natural gas, there has been a dramatic substitution of price cap regulation (PCR) for rate-of-return regulation (RRR). Despite this sea change in regulatory regimes, the Hope Standard, which protects the regulated firm from confiscatory rates so that it remains a financially viable enterprise, continues to serve as the litmus test for whether a regulatory taking has occurred. This creates some tension between the economics and the law. The incentive properties of PCR are superior to those of RRR precisely because PCR breaks the link between allowed revenues and costs. This is problematic because the Hope Standard employs an earnings test to assess takings claims which requires relinking revenues and costs to measure financial returns. This Essay contends that if the desirable incentive properties of PCR are to be preserved, the law must recognize that a taking can occur even when the regulated firm's returns are not confiscatory. This new standard integrates the traditional Hope Standard with a Sustainable Price Standard to ensure that (i) the regulated firm remains financially viable and (ii) earnings above confiscatory levels would no longer be sufficient to reject a taking claim.

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[†] Department of Economics, Kansas State University. I am grateful to Glen Robinson for critical insights into the case law underlying regulatory takings and for constructive comments on previous drafts of this manuscript. I thank David Sappington for helpful comments and thought-provoking discussions on the topic of this Essay over the course of our many research collaborations. Finally, I wish to express my sincere gratitude to the editorial staff of this Journal, particularly Charlie Bullock and Brendan Costello, for their careful review and critical insights that greatly improved the Essay.

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I. Introduction

A taking does not become a noncompensable exercise of police power simply because the government in its grace allows the owner to make some ‘reasonable’ use of his property.

- Dissent of Chief Justice William Rehnquist in *Penn Central v. City of New York*

The past three decades have witnessed a dramatic substitution of price cap regulation (PCR) for rate-of-return regulation (RRR) in North America and throughout the world.¹ This substitution has been most dramatic in the telecommunications industry,² but other sectors including airports, electric power, and natural gas have also participated in this trend.³ The principal reason for the pervasive adoption of PCR is the opportunity it provides to improve outcomes for all primary interest groups.⁴

Regulators have policy instruments other than RRR and PCR available to them to influence the behavior of the regulated firm. Prominent among these instruments are accommodative competitive-entry (ACE) policies. ACE policies are regulatory initiatives that go beyond opening markets to competition to

1. Whereas RRR places a cap on the earnings of the regulated firm, PCR places a cap on the average prices that the regulated firm may charge for its services. See DAVID E.M. SAPPINGTON & DENNIS L. WEISMAN, DESIGNING INCENTIVE REGULATION FOR THE TELECOMMUNICATIONS INDUSTRY (1996); Timothy J. Brennan, *Regulating by Capping Prices*, 1 J. REG. ECON. 133, 133 (1989). The terms price regulation and price cap regulation are used interchangeably throughout this analysis.

2. See David E.M. Sappington & Dennis L. Weisman, *Price Cap Regulation: What Have We Learned from Twenty-Five Years of Experience in the Telecommunications Industry?*, 38 J. REG. ECON. 227 (2010).

3. See David E.M. Sappington & Dennis L. Weisman, *The Disparate Adoption of Price Cap Regulation in the U.S. Telecommunications and Electricity Sectors*, 49 J. REG. ECON. 250 (2016); Peter Navarro, *The Simple Analytics of Performance-Based Ratemaking: A Guide for the PBR Regulator*, 13 YALE J. ON REG. 105, 111 (1996); Paul L. Joskow & Richard Schmalensee, *Incentive Regulation for Electric Utilities*, 4 YALE J. ON REG. 1, 38-39 (1986).

4. Consumers benefit from real price reductions or a slower rate of price growth. The regulated firm benefits from the greater pricing flexibility necessary to respond to competition and the prospect of higher profits if it can innovate and reduce costs. The regulator benefits from a streamlined regulated process. Competitors benefit from the regulated firm’s inability to offset competitive losses with higher rates for monopoly-supplied services. See JAISON R. ABEL, THE PERFORMANCE OF THE STATE TELECOMMUNICATIONS INDUSTRY UNDER PRICE-CAP REGULATION: AN ASSESSMENT OF THE EMPIRICAL EVIDENCE (Nat’l Regulatory Research Inst. NRRRI 00-14, 2000); Dale E. Lehman & Dennis L. Weisman, *The Political Economy of Price Cap Regulation*, 16 REV. INDUS. ORG. 343 (2000).

simulating that competition by placing the proverbial regulatory thumb on the scale in a manner that does not reflect *competition on the merits*.⁵ A seminal theme that underscores this discussion is that a regulator's propensity to adopt ACE policies is not independent of the type of regulatory regime (i.e., RRR or PCR).⁶

This Essay is motivated by two observations about the transition from RRR to PCR. First, the theoretical literature concludes that PCR is superior to RRR in that it provides enhanced incentives for efficiency.⁷ Nonetheless, the empirical evidence is mixed as to whether PCR has resulted in significant efficiency gains.⁸ Second, the interplay between the *Hope* Standard, which constrains regulatory behavior with an earnings floor, and ACE policies permits the regulator to reestablish the linkage between the firm's revenues and costs that PCR seeks to break and thereby appropriate the regulated firm's efficiency gains. The incentives for regulators to enact ACE policies are particularly pronounced under pure PCR.⁹

The key policy conclusion that follows from this analysis is that various legal and regulatory policy mechanisms may intercede to prevent PCR from delivering on its promised efficiency gains. The problem is that under prevailing case law the legal standard for a taking turns on the regulated firm's earnings even under price regulation. As a result, the regulator can act with impunity in

5. The term "competition on the merits" refers to the basic idea that the returns that a firm enjoys should reflect its superior efficiency and business acumen in the marketplace vis-à-vis its relatively less proficient rivals. See *United States v. Aluminum Co. of Am.*, 148 F.2d 416, 430 (2d Cir. 1945) ("The successful competitor, having been urged to compete, must not be turned upon when he wins."). For a modern exposition of the principle of competition on the merits in the context of U.S. antitrust law, see ANTITRUST MODERNIZATION COMM'N, REPORT AND RECOMMENDATIONS 81–82, 90–98, 448 (2007), https://govinfo.library.unt.edu/amc/report_recommendation/amc_final_report.pdf [<https://perma.cc/C34F-9GXM>].

6. This is not to suggest that ACE policies did not exist under RRR, because they did. For example, in the FCC's efforts to open long-distance markets to competition it regularly adopted *competitive-handicapping* policies that restrained AT&T in responding to the market inroads made by its long-distance rivals. See GERALD BROCK, TELECOMMUNICATIONS POLICY FOR THE INFORMATION AGE (1994); Mark S. Fowler, Albert Halprin, & James D. Schlichting, "Back to the Future": A Model for Telecommunications, 38 FED. COMM. L. J. 145, 193-94 (1986); John Haring, *The FCC, the OCCs and the Exploitation of Affection* (Fed. Commc'ns Comm'n Office of Plans and Policy Working Paper No. 17, 1985); John Haring, *Implications of Asymmetric Regulation for Competition Price Analysis* (Fed. Commc'ns Comm'n Office of Plans and Policy, Working Paper No. 14, 1984).

7. Ronald R. Braeutigam & John C. Panzar, *Diversification Incentives Under "Price-Based" and "Cost-Based" Regulation*, 20 RAND J. ECON. 373 (1989); Luis M.B. Cabral & Michael H. Riordan, *Incentives for Cost Reduction Under Price Cap Regulation*, 1 J. REG. ECON. 93 (1989).

8. See Marcelo Resende, *Regulatory Regimes and Efficiency in US Local Telephony*, 52 OXFORD ECON. PAPERS 447 (2000); Chunrong Ai & David E.M. Sappington, *The Impact of State Incentive Regulation on the U.S. Telecommunications Industry*, 22 J. REG. ECON. 133, 148–50 (2002); David E.M. Sappington, *Price Regulation*, in HANDBOOK OF TELECOMMUNICATIONS ECONOMICS 225, 278-82 (Martin Cave, Sumit Majumdar, & Ingo Vogelsang eds., 2002); Sappington & Weisman, *supra* note 2.

9. See Dennis L. Weisman, *Why Less May Be More Under Price-Cap Regulation*, 6 J. REG. ECON. 339, 341 (1994); Dennis L. Weisman, *What Do Regulators Value?*, 16 B.E. J. ECON. ANALYSIS & POL'Y (2016). Pure PCR refers to a price cap regulation regime in which there is no ex post sharing of earnings. For a discussion of the evolution from RRR to PCR in the U.S. telecommunications industry, see Sappington & Weisman, *supra* note 2.

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employing ex post policy changes, including ACE policies, that promote competition artificially to unilaterally reduce the regulated firm's earnings provided they do not fall below the minimum level established under *Hope*. The more efficient the regulated firm, the greater the regulator's discretion to accommodate competition and appropriate the regulated firm's excess earnings, *ceteris paribus*.

In order to preserve the desirable incentive properties of PCR, the law must recognize that a taking can occur even when the regulated firm's returns are not confiscatory. This new standard for a taking integrates the traditional *Hope* Standard with a Sustainable Price Standard to ensure that (i) the regulated firm remains a financially viable enterprise and (ii) earnings above confiscatory levels would no longer be sufficient to reject a taking claim.

The remainder of this Essay is structured as follows. The fundamentals of price regulation are discussed in Part II. Part III illustrates the problem of regulatory moral hazard with examples drawn from the telecommunications industry. The applicable case law for determining the presence of a regulatory taking is reviewed in Part IV. Part V proposes an economic standard for a regulatory taking under price regulation. Part VI concludes.

II. Price Regulation Fundamentals

A. Economic Regulation Emulates Competition

The regulatory economics literature recognizes that a primary objective of economic regulation is to emulate a competitive market standard. To this end, Professor Alfred Kahn observes that “the single most widely accepted rule for the governance of the regulated industries is regulate them in such a way as to produce the same results as would be produced by effective competition, if it were feasible.”¹⁰ In similar fashion, Professor James Bonbright observes that “[r]egulation, then, as we conceive it, is indeed a substitute for competition; and it is even a partly imitative substitute.”¹¹

10. 1 ALFRED E. KAHN, THE ECONOMICS OF REGULATION: PRINCIPLES AND INSTITUTIONS 17 (1970).

11. JAMES C. BONBRIGHT, PRINCIPLES OF PUBLIC UTILITY RATES 107 (1961). In *Taxation by Regulation*, Richard Posner challenged the prevailing orthodoxy that economic regulation emulates competition along the lines of the Public Interest Theory of regulation. Specifically, he argued that observed regulatory behavior, including various socially equitable pricing policies such as cross-subsidization and restrictions on market entry and exit, were not easily reconciled with the view that regulators seek to emulate competition. Posner argued that regulation is best understood as a branch of public finance in which the power of the state is leveraged to achieve market outcomes that are not sustainable under competition. Richard A. Posner, *Taxation by Regulation*, 2 BELL J. ECON. & MGMT. SCI. 22 (1971). See also Sam Peltzman, *Toward a More General Theory of Regulation*, 19 J. L. & ECON. 211 (1976); David E.M. Sappington & Dennis L. Weisman, *Regulating Regulators in Transitionally Competitive Markets*, 41 J. REG. ECON. 19 (2012); George Stigler, *The Theory of Economic Regulation*, 2 BELL J. ECON. & MGMT. SCI. 3 (1971).

RRR seeks to instill competitive discipline by capping the regulated firm's financial returns.¹² Pure PCR seeks to instill competitive discipline by capping the prices for regulated services.¹³ A central question in the economics of regulation literature is whether earnings-based regulatory regimes, price-based regulatory regimes, or regimes based on some combination of the two types of regulation are the best means to replicate the discipline of competitive markets and encourage the investment behavior that regulators wish to encourage.¹⁴

The early economics literature on PCR emphasizes two distinct yet related themes. First, the regulator is not all-knowing and the regulated firm possesses superior information about its costs and demands.¹⁵ Second, efficiency is the result of a discovery process and the regulated firm must be provided with incentives to invest in the (unobservable) effort required for such discovery.¹⁶

B. The Efficiency Properties of PCR

Under pure PCR the link between the regulated firm's allowed revenues and costs is severed.¹⁷ The superior incentive properties of PCR derive in large

12. RRR can foster industry investment by ensuring a high likelihood of a reasonable return on investment. The same is not true if the regulator severely limits the firm's return on all successful investments and forces the firm to bear the full financial consequences of all unsuccessful investments. See A. Lawrence Kolbe & William B. Tye, *The Duquesne Opinion: How Much "Hope" Is There for Investors in Regulated Firms?*, 8 YALE J. ON REG. 113 (1991); Sean P. Madden, *Takings Clause Analysis of Utility Ratemaking Decisions: Measuring Hope's Investor Interest Factor*, 58 FORDHAM L. REV. 427 (1989).

13. Professor Stephen Littlechild, who was the original proponent of price cap regulation in the United Kingdom and also presided over its implementation, observed that the focus of price cap regulation was not on the "prevention of excess profits," but rather on improving efficiency and expanding the range of profitable opportunities through innovation and discovery. Stephen Littlechild, *The Birth of RPI-X and Other Observations*, in THE UK MODEL OF UTILITY REGULATION 31 (Ian Bartle ed., 2003).

14. Mark Armstrong & David E.M. Sappington, *Recent Developments in the Theory of Regulation*, in 3 THE HANDBOOK OF INDUSTRIAL ORGANIZATION 1557 (Mark Armstrong & Robert H. Porter eds., 2007); Paul Joskow, *Incentive Regulation in Theory and Practice: Electricity Distribution and Transmission Networks*, in ECONOMIC REGULATION AND ITS REFORM: WHAT HAVE WE LEARNED? 291 (Nancy L. Rose ed., 2014).

15. "The interest in price caps also reflects a growing understanding that governmental regulation is limited in what it can accomplish. The firms that are the object of regulation are almost always better informed than regulators about their costs and the consequences of adopting particular, detailed regulatory schemes for prices or conditions of service. Thus, rather than creating regulation based on the premise of an omniscient regulator being able to set optimal prices based on full knowledge of costs and demand, a more realistic regulatory goal is to design incentive mechanisms for the regulated firm that will lead it to maximize society's objectives (whether these are efficiency, distributive, or other objectives) while pursuing its self-interest." Jan Paul Acton & Ingo Vogelsang, *Introduction Regulation*, 20 RAND J. ECON. 369, 369 (1989).

16. "[PCR] does *not* assume costs and demands are given or known; indeed, the problem is to provide adequate incentives for the company to discover them. The aim is to stimulate alertness to lower cost techniques and hitherto unmet demands. The emphasis is on productive rather than allocative efficiency (and even the *RPI - X* price cap reflects distributional rather than allocative considerations)." M.E. Beesley & S.C. Littlechild, *The Regulation of Privatized Monopolies in the United Kingdom*, 20 RAND J. ECON. 454, 467 (1989).

17. In contrast, PCR with earnings sharing requires the regulated firm to share earnings when they exceed a stipulated level. The amount that is shared typically increases with the degree to which

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measure from breaking this link between allowed revenues and costs so that the regulated firm is the residual claimant for its efficiency gains.¹⁸ This means that the regulated firm retains a full dollar for each additional dollar of cost savings (at least until rebasing occurs at the end of the PCR regime).¹⁹

Delinking allowed revenues and costs provides the regulated firm with incentives to: (1) operate with the least-cost technology; (2) operate with no waste; (3) diversify efficiently into new markets; (4) undertake efficient levels of cost-reducing innovation; (5) report its costs truthfully;²⁰ and (6) eliminate abuse.²¹ Earnings sharing, which is essentially a tax on earnings, weakens the desirable efficiency properties of PCR because the regulated firm bears the full cost of its efforts to reduce costs but retains only a fraction of the corresponding benefits. Earnings sharing may even encourage regulators to disallow costs that have been prudently incurred so as to move financial returns from the non-sharing range (commonly referred to as the “deadband”) into the sharing range.²²

Consumers benefit from prices that do not vary directly with the reported costs of the firm because they bear little or no risk for excessive price variability for the duration of the price cap regime. This invariance property of pure PCR explains why it is sometimes characterized as a *fixed-price contract*. Conversely, traditional RRR (and some forms of PCR with earnings sharing) operates in

earnings exceed the stipulated level. In addition, some earnings sharing schemes stipulate that rates be increased if the regulated firm’s earnings fall below some predetermined floor.

18. Pure PCR is considered a high-powered regulatory regime because the regulated firm is responsible for a large share of its actual costs. In contrast, RRR is a low-powered regulatory regime because the firm is typically able to pass through a high proportion of cost changes in the form of rate changes. See JEAN-JACQUES LAFFONT & JEAN TIROLE, A THEORY OF INCENTIVES IN PROCUREMENT AND REGULATION 11 (1993).

19. Rebasing refers to the process of realigning the regulated firm’s rates with its underlying costs. As PCR plans become longer in duration, rebasing is correspondingly less frequent and the risk borne by the regulatory firm increases concomitantly because the regulated firm may experience an earnings deficiency for a prolonged period of time.

20. See Braeutigam & Panzar, *supra* note 7.

21. In this context, abuse refers to resource expenditures by the regulated firm for which the realized costs exceed the benefits. Abuse therefore represents expenditures on resources that the regulated firm would not undertake if it had to bear their full cost. See GLENN BLACKMON, INCENTIVE REGULATION AND THE REGULATION OF INCENTIVES (1994).

22. See Ronald R. Braeutigam & John C. Panzar, *Effects of the Change from Rate-of-Return to Price-Cap Regulation*, 83 AM. ECON. REV. (PAPERS & PROC.) 191 (1993); Dennis L. Weisman, *Superior Regulatory Regimes in Theory and Practice*, 5 J. REG. ECON. 355 (1993). A possible example of this phenomenon occurred in the aftermath of epic floods that plagued the Midwest in summer of 1993. After questioning how Southwestern Bell allocated its resources in responding to this natural disaster, the Missouri Public Service Commission ordered cost disallowances that had the effect of moving the company’s financial returns from the non-sharing range to the sharing range. These events prompted Southwestern Bell to move expeditiously across its five states with initiatives to eliminate earnings sharing from its price regulation plans. (Private conversations with Southwestern Bell Officials). The first non-experimental incentive regulation plan for Southwestern Bell in Missouri incorporated earnings sharing and the Commission order discusses myriad expense disallowances. See In the Matter of Proposals to Establish an Alternative Regulation Plan for Southwestern Bell Telephone Company, Case No. TO-93-192, Report and Order, Before the Public Service Commission of the State of Missouri, Effective Date January 1, 1994.

similar fashion to a *cost-plus contract*.²³ This means that the prices that consumers pay under RRR vary more directly with the reported costs of the firm and therefore tend to exhibit greater volatility.

PCR is commonly referred to as “ $I - X$ ” regulation because the maximum annual increase in the regulated firm’s average prices is governed by a general inflation index (I) less a productivity offset (X).²⁴ For example, if the rate of inflation is 4% and the X factor is 2%, the price cap formula would permit the regulated firm to raise average prices a maximum of 2% ($4\% - 2\%$) per year.

The “ $I - X$ ” price adjustment formula follows from the idea that in a competitive market industry-average productivity gains are passed along to consumers in the form of lower prices after controlling for inflation. Specifically, because the regulated firm retains the entirety of its efficiency improvements beyond those guaranteed ex ante through the X factor, it has ideal incentives to strive for maximum efficiency. This explains why the regulated firm may be expected to enlist its informational advantage regarding costs and demand to improve efficiency.

As discussed in the following passage, because PCR breaks the link between allowed revenues and costs it must also break the link between higher than normal profits and excessive rates.

It is possible to conclude that under a properly articulated economic rationale, consumer protection against “excessive profits,” as traditionally applied under profit level regulation, could not be invoked to reestablish a necessary link between prices and profits In effect, therefore, the standard of constitutional protection for consumers under a price level regime would be modified. The focus would shift from protection against “excessive profits” *per se*, as defined under profit level regulation, to protection against prices viewed as “unconscionable” and “demonstrably irrelevant” to the purposes of the price level regime.²⁵

C. Regulatory Commitment is Critical to the Superior Performance of PCR

The finding that PCR has superior incentive properties in comparison with RRR must be qualified. PCR closely approximates the incentives of a competitive market—but only when the regulator’s commitment to the basic

23. Under RRR, a regulated firm is provided with a reasonable opportunity to recover its prudently incurred costs plus a return on its capital investment. The “cost-plus” nature of RRR explains why it is sometimes characterized as a *cost-plus contract*.

24. In the United States, the X factor is typically set to reflect expected industry productivity growth. See Jeffrey I. Bernstein & David E.M. Sappington, *Setting the X Factor in Price-Cap Regulation Plans*, 16 J. REG. ECON. 5 (1999). In Europe, the X factor tends to be more of a negotiated value. See Littlechild, *supra* note 13; Stephen Littlechild, REGULATION OF BRITISH TELECOMMUNICATIONS’ PROFITABILITY: REPORT TO THE SECRETARY OF STATE (1983); Michael Crew & Paul Kleindorfer, *Incentive Regulation in the United Kingdom and the United States: Some Lessons*, 9 J. REG. ECON. 211, 218, 220 (1996).

25. JORDAN JAY HILLMAN & RONALD BRAEUTIGAM, PRICE LEVEL REGULATION FOR DIVERSIFIED PUBLIC UTILITIES 80-81 (1989).

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tenets of PCR is a credible one.²⁶ This means that the regulated firm must have confidence that changes in the level of the price cap are independent of its own performance so that it is the residual claimant for its efficiency gains.²⁷

When changes in the *X* factor are conditional on the regulated firm's performance, the regulatory regime is said to incorporate a "ratchet effect" and the firm's incentives for superior performance are adversely affected.

To illustrate the incentive problem associated with a "ratchet effect," suppose the *X* factor is initially set at 2% and the regulated firm works diligently to innovate and improve operating efficiency. Because of these efforts, the regulated firm realizes efficiency gains of 3% per year. Having observed that the firm is able to achieve efficiency gains that exceed the *X* factor, the regulator determines that the *X* factor can safely be ratcheted upward without jeopardizing the firm's financial viability. Over time, the regulated firm learns that its "reward" for successful innovation is to have its efficiency gains appropriated by the regulator in the form of a higher *X* factor and, in turn, a slower rate of allowed price growth.²⁸

Under pure PCR, therefore, the regulatory authority agrees not to adjust the prices of the regulated firm's services based on its actual earnings or costs for the duration of the price cap regime.²⁹ A strong regulatory commitment is therefore critical to the superior performance of PCR. The greater risk the firm bears under PCR must be coupled with the distinct possibility of greater reward. "Absent credible rewards for superior performance and/or credible penalties for poor performance, the regulated firm will have little incentive to incur the effort costs that increase the likelihood of good performance."³⁰

A key premise underlying PCR is that the regulator and its constituency will view higher profits by the regulated firm as something other than a failure of regulation itself.³¹ If this premise is false and the regulated firm is uncertain as to whether regulatory commitments will be honored, there may be little difference between PCR and RRR in practice.

26. See JEAN-JACQUES LAFFONT & JEAN TIROLE, *COMPETITION IN TELECOMMUNICATIONS* (2000); SAPPINGTON & WEISMAN, *supra* note 1, at ch. 7.

27. One difference of note is that the regulated firm's prices are capped by the regulator, whereas the forces of supply and demand determine the market price that competitive firms treat as being exogenous to their behavior.

28. A rational, long-lived regulator would refrain from expropriation due to its long-term, adverse impact on industry productivity growth. However, short regulatory tenures, coupled with common political pressures for immediate gains for consumers, can render expropriation rational behavior. Glen O. Robinson & Dennis L. Weisman, *Designing Competition Policy for Telecommunications*, 7 REV. NETWORK ECON. 509, 535-40 (2008).

29. To reinforce this commitment, at least one regulatory commission (Massachusetts), in a noteworthy example of self-restraint, determined that it did not even want the regulated firm (Verizon) to file earnings information with the commission. See Paul B. Vasington, *Incentive Regulation in Practice: A Massachusetts Case Study*, 2 REV. NETWORK ECON. 451 (2003).

30. David E.M. Sappington, *Designing Incentive Regulation*, 9 REV. INDUS. ORG. 245, 262-63 (1994).

31. See Braeutigam & Panzar, *supra* note 7, at 389; Weisman, *supra* note 22 at 364-65.

The discussion of the efficiency properties of PCR in this Section is standard in the economics literature. Nonetheless, the superior incentive properties attributed to PCR depend on two critical assumptions that may not align with institutional reality. The first assumption is that there are no ex post policy instruments that would enable the regulator to decrease the (sustainable) market price below the price cap without breaching the price cap commitment. The second assumption is that the *Hope* Standard, discussed in Part IV *infra*, would not be used strategically by the regulator to appropriate “excess earnings” under PCR.³² The next two parts respectively examine real-world examples of these assumptions being violated and the case law that purportedly enables such behavior.

III. Regulatory Moral Hazard

The economics of regulation literature focuses almost exclusively on how various regulatory regimes, including PCR and RRR, influence the behavior and incentives of the regulated firm. And yet, as Professor Ronald Braeutigam has observed, “Regulation is a political act . . . from a political point of view, perhaps the most significant feature of regulation is that it redistributes income, creating winners and losers, thereby shaping interest groups and coalitions.”³³ It should therefore be anticipated that changes in the regulatory regime affect not only the behavior and incentives of the regulated firm but those of the regulator as well. In this light, it is important to understand the properties of a regulatory regime in terms of a mechanism that imposes discipline on both the regulator and the regulated firm.³⁴

The primary objective of this Part is to examine the issue of “regulatory moral hazard.”³⁵ Specifically, we explore how the regulator’s behavior changes when it is insulated from the adverse effects of its actions. The key observation that underscores this discussion is that the regulator is almost perfectly insured under PCR against earnings deficiencies on the part of the regulated firm that would have triggered increases in politically sensitive, basic service rates under RRR (or PCR with earnings sharing).

For example, pure PCR can be self-defeating for the regulated firm because the regulator bears no cost of competitive entry measured in terms of shared earnings foregone or required increases in basic service rates that may anger

32. The term “excess earnings” refers to earnings above the minimum level necessary to comply with the *Hope* Standard (i.e., to ensure that the regulated firm is a financially viable enterprise).

33. Ronald R. Braeutigam, *Optimal Policies for Natural Monopolies*, in 2 HANDBOOK OF INDUSTRIAL ORGANIZATION 1289, 1299 (Richard Schmalensee & Robert Willig eds., 1989).

34. See Sappington & Weisman, *supra* note 11.

35. A moral hazard is a type of incentive problem that arises when the economic agent does not bear the full costs of a loss and, as a result, fails to put forth the efficient level of effort (which cannot be observed directly) to avoid that loss. The moral hazard problem explains why most insurance policies require co-payments or deductibles to ensure that the economic agent has some “skin in the game.”

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consumers, the regulator's constituency.³⁶ Conversely, under RRR or PCR with earnings sharing, a pronounced earnings deficiency by the regulated firm would require the regulator to raise basic service rates. As a result, regulators are almost "fully insured" under pure PCR against financial losses incurred by the regulated firm from increased competition.³⁷ This provides the regulator with strong incentives to allow the maximum degree of entry-accommodation³⁸ consistent with preserving the financial viability of the regulated firm.³⁹

The phenomenon of regulatory moral hazard is illustrated with three examples drawn from the telecommunications industry.

A. Competition in the Long-Distance Market

The idea that the regulated firm can "strategically influence" the behavior of the regulator has a long history in the telecommunications industry. Crandall observes that AT&T did not object to increased subsidy flows from long-distance to local telephone service when competition first threatened in the long-distance market.⁴⁰ Crandall contends that AT&T tolerated such price distortions to increase the cost to the regulator, measured in terms of subsidies foregone, of allowing competitive entry. "Perhaps it saw this distortion as its ultimate,

36. See Dennis L. Weisman, *Bribing Regulators*, 22 APPLIED ECON. LETTERS 581 (2015); Weisman, *supra* note 9.

37. Jarrell posits that utilities sought economic regulation for protection from the rigors of competition. See Greg Jarrell, *The Demand for State Regulation of the Electric Utility Industry*, 21 J. L. & ECON. 269 (1978). Weiman and Levin discuss the specific case of a regulated telecommunications provider "bribing" public officials for the right to acquire rivals and thereby limit competition. See David F. Weiman & Richard C. Levin, *Preying for Monopoly? The Case of Southern Bell Telephone Company, 1894-1912*, 102 J. POL. ECON. 103 (1994).

38. The combination of capping politically sensitive basic service rates and the absence of earnings sharing tends to weaken the power of the regulated firm relative to other interest groups. As a result, the expected outcome is precisely the opposite of the standard predictions of the economic theory of regulation that new entrants will encounter artificially high costs. See Roger G. Noll, *Economic Perspectives on the Politics of Regulation*, in 2 HANDBOOK OF INDUSTRIAL ORGANIZATION 1253, 1266-67 (Richard Schmalensee & Robert Willig eds., 1989). In this setting, political utility maximization is consistent with regulatory policies that favor new entrants and consumers over the regulated firm.

39. Whereas regulatory policies that artificially increase competition may improve static efficiency (prices are more closely aligned with incremental cost), they impair dynamic efficiency (optimal investment in innovation and discovery over time). For example, suppose the government unilaterally declares all patents null and void. The short-run effect of this policy would be to reduce the prices of goods and services that formerly operated under patent protection. The long-run effect of this policy would be to discourage investment in product and process innovation. There is a general consensus that dynamic efficiency trumps static efficiency in terms of economic welfare. See BONBRIGHT, *supra* note 11, at 107; ALFRED E. KAHN, *WHOM THE GODS WOULD DESTROY, OR HOW NOT TO DEREGULATE* (2001); William F. Baxter, *The Definition and Measurement of Market Power in Industries Characterized by Rapidly Developing and Changing Technologies*, 53 ANTITRUST L.J. 717 (1984); Robinson & Weisman, *supra* note 28; *New Antitrust Laws for the "New Economy"?: Hearing Before the Antitrust Modernization Comm'n* (testimony of Richard Gilbert) (Nov. 8, 2005).

40. Robert W. Crandall, *The Role of the U.S. Local Operating Companies*, in CHANGING THE RULES: TECHNOLOGICAL CHANGE, INTERNATIONAL COMPETITION, AND REGULATION IN TELECOMMUNICATIONS 114, 122 (Robert W. Crandall & Kenneth Flamm eds., 1989).

political defense against competitive entry in long-distance services.”⁴¹ Robinson observes that “no resistance to this subsidy was forthcoming from AT&T, since it was largely just an intercorporate transfer of revenues.”⁴² The original idea can be traced back to a pioneering article by Richard Posner:

A firm that engages in internal subsidization can argue forcefully to the regulatory agency that the agency should not permit, or at least should strictly limit the entry of competitors into those markets where the firm makes large profits, because those profits – which new entrants would erode – are necessary in order to cover the losses in subsidized markets.⁴³

B. Implementation of the 1996 Telecommunications Act

Under the provisions of the 1996 Telecommunications Act, the incumbent telecommunications providers were required to unbundle their networks and lease the component parts of these networks, referred to as unbundled network elements or UNEs, to rivals at “cost-based” rates determined by regulators.⁴⁴ Hence, the Act empowers regulators to essentially control the rate at which competitive entry materializes through their ability to calibrate the input prices paid by the rivals of the regulated firm. This is significant because competition is no longer exogenous but is instead endogenous to the regulator’s actions.

41. *Id.* The 1996 Telecommunications Act sought to counter the “anticompetitive” practices on the part of state regulators. Section 253(a) of the Act states that “No State or local statute or regulation, or other State or local legal requirement, may prohibit or have the effect of prohibiting the ability of any entity to provide any interstate or intrastate telecommunications service.” Congress had good reason to be concerned that regulators would not naturally be inclined to allow competition that might ultimately render economic regulation unnecessary. This observation notwithstanding, Congress itself has not always been a stalwart champion of competition in the telecommunications industry. *See* BROCK, *supra* note 6, at ch. 11. *See also* Howard A. Shelanski, *Adjusting Regulation to Competition: Toward a New Model for U.S. Telecommunications Policy*, 24 YALE J. ON REG. 55 (2007) (arguing that regulators have tended not only to impede competition, but also to be too slow in deregulating workably competitive markets to the detriment of consumers). For examples of asymmetric and anticompetitive regulation in the railroad and trucking industries, *see* THEODORE E. KEELER, *RAILROADS, FREIGHT, AND PUBLIC POLICY* (1983); William J. Baumol & Alfred G. Walton, *Full Costing, Competition & Regulatory Practice*, 82 YALE L.J. 639 (1973).

42. Glen O. Robinson, *The Titanic Remembered: AT&T and the Changing World of Telecommunications*, 5 YALE J. ON REG. 517, 518-19 n.7 (1988). These subsidies proved to be anything but “an intercorporate transfer of revenues” after the 1984 AT&T divestiture when regulators continued these subsidies in the form of grossly inflated carrier access charges which AT&T had to pay the local exchange carriers for the origination and termination of its long-distance messages. This caused some industry observers to reexamine whether AT&T had really pulled off a major coup in jettisoning the local exchange business as part of the divestiture decree. *See* Paul W. MacAvoy & Kenneth W. Robinson, *Winning by Losing: The AT&T Settlement and its Impact on Telecommunications*, 1 YALE J. ON REG. 1 (1983); Paul W. MacAvoy & Kenneth W. Robinson, *Winning by Losing: The First Year of the AT&T Divestiture*, 2 YALE J. ON REG. 225 (1985); Robinson, *supra*, at 530-31.

43. Posner, *supra* note 11, at 28.

44. *See* GLEN O. ROBINSON & THOMAS B. NACHBAR, *COMMUNICATIONS REGULATION* 560-61 (2008); Jerry A. Hausman & Gregory Sidak, *A Consumer-Welfare Approach to Mandatory Unbundling of Telecommunications Networks*, 109 YALE L.J. 417 (1999); Alfred E. Kahn et al., *The 1996 Telecommunications Act at Three Years: An Economic Evaluation of Its Implementation by the FCC*, 11 INFO. ECON. & POL’Y 319 (1999).

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Lehman and Weisman⁴⁵ and Onemli⁴⁶ provide empirical evidence that in implementing the 1996 Telecommunications Act regulators in states with PCR set lower lease rates for UNEs than regulators in states operating under some form of earnings regulation.⁴⁷ The propensity for regulators in price cap states to create lower barriers to entry relative to regulators in states that have some form of earnings-based regulation aligns with the theory that the regulator is “insured” against the adverse effects of pro-competitive entry policies under PCR because the regulated firm’s prices do not vary with its earnings.⁴⁸ The regulator’s incentives to engage in such behavior may be expected to increase with the length of the PCR plan because a regulated firm subject to a longer PCR plan has no short-term remedy for deficient earnings through the process of rebasing (i.e., the realignment of rates with underlying costs).

C. Open Meeting of Texas Public Utility Commission

A noteworthy illustration of the phenomenon discussed in the previous subsection played out in an open meeting of the Texas Public Utility

45. DALE E. LEHMAN & DENNIS L. WEISMAN, *THE TELECOMMUNICATIONS ACT OF 1996: THE “COSTS” OF MANAGED COMPETITION* (2000).

46. Muharrem Burak Onemli, *Three Essays on Regulatory Economics* (2010) (unpublished Ph.D. dissertation, Kansas State University), <http://krex.k-state.edu/dspace/bitstream/handle/2097/4258/MuharremBurakOnemli2010.pdf?sequence=1&isAllowed=y> [<https://perma.cc/644K-6EJP>].

47. This problem is further compounded by the fact that FCC employed a controversial costing methodology to set the rates for leasing the incumbent’s network infrastructure. This costing methodology is referred to as TELRIC (total element long run incremental cost) and is based on the cost that would be incurred by an ideally efficient incumbent provider. The controversy surrounding TELRIC derives from the hypothetical nature of the exercise and the fact that it typically produces extremely-low cost estimates and therefore rates that may not be compensatory. See LEHMAN & WEISMAN, *supra* note 45, at ch. 6; Hausman & Sidak, *supra* note 44; Jerry A. Hausman, *Valuing the Effect of Regulation on New Services in Telecommunications*, BROOKINGS PAPERS ON ECON. ACTIVITY: MICROECONOMICS, 1997; Kahn et al., *supra* note 44. The TELRIC methodology also leads to the paradox of “predatory costing” in which an incumbent provider can be foreclosed by a rival that leases network infrastructure from that incumbent provider. See Dennis L. Weisman, *The (In)Efficiency of the ‘Efficient-Firm’ Cost Standard*, 45 ANTITRUST BULLETIN 195. In *Verizon Communications Inc. v. FCC*, 535 U.S. 467 (2002), the Supreme Court characterized the FCC’s approach as “novel rate setting designed to give aspiring competitors every possible incentive to enter local retail telephone markets, short of confiscating the incumbents’ property.” 535 U.S. at 489. I am grateful to Timothy Tardiff for calling this passage to my attention.

48. See Dennis L. Weisman, *Regulatory Moral Hazard: Price Caps and Endogenous Entry Under the 1996 Telecommunications Act*, in *EXPANDING COMPETITION IN REGULATED INDUSTRIES 1* (Michael A. Crew ed., 2000). Weisman contends that earnings sharing may be more profitable for the regulated firm than pure PCR in an environment in which the regulator controls the terms of entry. The prospective loss of shared earnings imposes a cost on the regulator should it adopt liberal competitive entry policies. Earnings sharing may discipline the regulator to maintain high entry barriers and sustain the profit stream of the regulated firm to obviate the need to increase politically sensitive service rates. Weisman, *supra* note 9. Blank and Mayo demonstrate how earnings sharing can arise endogenously in a setting where consumers and regulated firms lobby for favorable treatment. See Larry Blank & John W. Mayo, *Endogenous Regulatory Constraints and the Emergence of Hybrid Regulation*, 35 REV. INDUS. ORG. 233 (2009).

Commission.⁴⁹ The public record indicates that the commissioners observed (i) a dearth of competition in local telephone service markets; (ii) that the inclusion of contribution and subsidies in the wholesale rates for network inputs might discourage competition due to high barriers to entry;⁵⁰ and (iii) that since Southwestern Bell had “freely elected into” PCR, the company had limited recourse to the Commission if lower wholesale rates designed to spur retail competition should lead to an earnings deficiency. Notably, this occurred after the Texas Commission had extracted a sizable infrastructure commitment from Southwestern Bell that required it to deploy advanced digital technology in rural areas of the state as the *quid pro quo* for the right to operate under PCR rather than RRR.

The record appears to support the contention that the Texas Commission recognized that PCR provided “insurance” against increases in basic service rates that would have occurred under traditional RRR. It could therefore act with virtual impunity in reducing barriers to entry and thereby facilitate increased competition in local telecommunications markets. The Commission did not have full insurance, however, because the *Hope* Standard precluded it from setting network element prices so low as to undermine Southwestern Bell’s financial viability.

IV. Applicable Case Law

A. *Hope Natural Gas*

The foundation for a governmental (regulatory) taking follows from the Fifth Amendment (“nor shall private property be taken for public use, without just compensation”)⁵¹ and the Fourteenth Amendment (“nor shall any state deprive any person of life, liberty, or property, without due process of law”) to the U.S. Constitution.⁵² In practice, this is a double-edged sword. Regulated firms are protected against unduly low rates,⁵³ but they are also exposed to various forms of regulatory opportunism that may result in the appropriation of excess returns.⁵⁴

Under the *Hope* Standard, a regulated firm is entitled to a “return . . . sufficient to assure confidence in the financial integrity of the enterprise, so as

49. Texas Public Utility Commission, Open Meeting, Agenda Item No. 1, Docket Nos. 16189, 16196, 16226, 16285, 16290, 16455, 17065, June 18, 1997.

50. The term “contribution” refers to the residual between prices and incremental costs that may be available to contribute to the recovery of overhead costs.

51. U.S. CONST. amend. V.

52. U.S. CONST. amend. XIV, § 1.

53. The protection takes the form of the regulator being required to increase rates so that the regulated firm’s earnings are above the confiscatory levels prohibited under *Hope*.

54. See Dennis L. Weisman, *Did the High Court Reach an Economic Low in Verizon v. FCC?*, 1 REV. NETWORK ECON. 90 (2002) (hereinafter “High Court”); Dennis L. Weisman, *Is There “Hope” For Price Cap Regulation?* 14 INFO. ECON. & POL’Y 349 (2002) (hereinafter “Hope for PCR”).

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to maintain its credit and attract capital” and to “enable the company to operate successfully . . . and to compensate its investors for the risks assumed”⁵⁵ The regulator is granted broad discretion under *Hope* to adopt the lowest rates for the regulated firm consistent with the above standard being met even though it may produce only a meager return.⁵⁶ In this sense, *Hope* seeks to balance consumer and investor interests.⁵⁷ A regulatory taking occurs when the regulatory regime (inclusive of rates and service obligations) fails to provide the regulated firm with a return sufficient to assure confidence in the financial integrity of the enterprise.⁵⁸

The *Hope* Standard poses potentially serious if not fatal problems for the performance of PCR. On the one hand, the regulator can appeal to *Hope* as justification for the appropriation of “excess returns” that the firm realizes under price regulation through its superior business acumen, thereby weakening incentives for efficiency. Specifically, the greater the regulated firm’s investment in cost-reducing innovation, the greater the regulator’s ability to accommodate competitive entry without violating the minimum earnings standard required by *Hope*. Under these conditions, the *Hope* Standard can devolve into both a floor and a ceiling on the earnings of the regulated firm.

On the other hand, a regulated firm subject to price regulation that exhibits inferior business acumen may potentially be able to invoke *Hope* as a safety net of sorts to protect against downside risk, thereby undermining the critical risk-return tradeoff that differentiates PCR from RRR. In a certain sense, the regulated firm cannot be allowed to fail as it would deprive consumers of an essential service. The problem is that even under price regulation the legal (*Hope*) standard for a taking turns on the regulated firm’s earnings.

The regulator’s role in accommodating competitive entry is the crux of the problem. As a direct result of ACE policies, pricing at the original price cap is no longer sustainable for the regulated firm because it would result in a loss of sales to rivals so substantial that a lower price would be more profitable.⁵⁹ These

55. See *Fed. Power Comm’n v. Hope Nat. Gas Co.*, 320 U.S. 591, 603, 605 (1944). The Supreme Court reaffirmed the fundamental tenets of *Hope* in *Duquesne Light Co. v. Barasch*, 488 U.S. 299 (1989). See also *Bluefield Waterworks & Imp. Co. v. Pub. Serv. Comm’n of W. Va.*, 262 U.S. 679 (1923).

56. In *Federal Power Commission v. Texaco Inc.*, 417 U.S. 380 (1944), the Court ruled that “All that is protected against, in a constitutional sense, is that the rates fixed by the Commission be higher than the confiscatory level.” 417 U.S. at 391-392.

57. See Madden, *supra* note 12.

58. J. GREGORY SIDAK & DANIEL F. SPULBER, *DEREGULATORY TAKINGS AND THE REGULATORY CONTRACT* 4-6 (1997).

59. ACE policies can also take less overt forms. The incumbent providers may be required to serve as carriers of last resort. See 2 ALFRED E. KAHN, *THE ECONOMICS OF REGULATION* 236-41 (1988); Dennis L. Weisman, *Default Capacity Tariffs: Smoothing the Transitional Regulatory Asymmetries in the Telecommunications Market*, 5 YALE J. ON REG. 149 (1988). Or, the incumbent providers may be required to cross-subsidize selected service offerings, engage in broad-based rate averaging and satisfy artificially high price floors. See Weisman, *supra* note 47. These policies are part and parcel of the voluntary exchange between the regulator and the firms they regulate that comprise the regulatory compact. See Posner, *supra* note 11; George L. Priest, *The Origins of Utility Regulation and*

ACE policies may not technically breach the price cap commitment, but their effect is to ratchet up the X factor so that the regulated firm is forced to set prices lower than would otherwise be required, thereby weakening the superior incentives that PCR was designed to put in place since the regulated firm is no longer the residual claimant for its efficiency gains. This was one of several concerns that precipitated the myriad legal challenges⁶⁰ to the implementation of the 1996 Telecommunications Act.⁶¹

B. Duquesne

The key holding in *Duquesne* is that “a State’s decision to arbitrarily switch back and forth between methodologies in a way which required investors to bear the risk of bad investments at some times while denying them the benefit of good investments at others would raise serious constitutional questions.”⁶²

Suppose that the regulated firm is subject to a price cap constraint of the form $p \leq \bar{p}$ in time-period 1, where p is the regulated firm’s average retail price and \bar{p} is the price cap set by the regulator. In time-period 2, the regulator implements an ACE policy comparable to that employed by the Federal Communications Commission (FCC) to implement the 1996 Telecommunications Act. The regulator is empowered with a new policy instrument, entry-accommodation (a), where $p(a)$ defines the market price that is decreasing in a (i.e., $\Delta p(a)/\Delta a < 0$). Hence, there exists a level of entry accommodation $\hat{a} > 0$ such that $p \leq p(\hat{a}) < \bar{p}$ for all $a \geq \hat{a}$. The regulator can use this new policy instrument to essentially “switch” the original price cap constraint ($p \leq \bar{p}$) for a more stringent price cap constraint ($p \leq p(\hat{a}) < \bar{p}$). Because the regulated firm was promised one form of regulation, frequently in exchange for substantial concessions,⁶³ but forced to operate under another, this amounts to a form of regulatory “bait and switch.”

C. Verizon

In *Verizon*, the FCC argued that its rate methodology for UNEs was not confiscatory because “the incumbents have continued to enjoy generous returns,

the “Theories of Regulation” Debate, 36 J. L. & ECON. 289 (1992). All these policies confer a marketplace advantage on rivals in competing with the incumbent providers. See Weisman, *Optimal Re-Contracting, Market Risk and the Regulated Firm in Competitive Transition*, 12 RES. L. & ECON. (1989).

60. See ROBINSON & NACHBAR, *supra* note 44, at 501; Robinson & Weisman, *supra* note 28.

61. For a debate as to whether such policies constitute deregulatory takings. see SIDAK & SPULBER, *supra* note 58; William J. Baumol & Thomas W. Merrill, *Deregulatory Takings, Breach of the Regulatory Contract and the Telecommunications Act of 1996*, 72 N.Y.U. L. REV. 1037 (1997); Stephen F. Williams, *Deregulatory Takings and Breach of the Regulatory Contract: A Comment*, 71 N.Y.U. L. REV. 1000 (1996); Oliver E. Williamson, *Deregulatory Takings and Breach of the Regulatory Contract: Some Precautions*, 71 N.Y.U. L. REV. 1007 (1996).

62. *Duquesne Light Co. v. Barasch*, 488 U.S. 299, 315 (1989).

63. See *supra* Section III.C and *infra* note 76.

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on both their interstate and intrastate activities, in the years since they were required to lease network elements at rates based on forward-looking costs.”⁶⁴ The FCC further observed that there was no attempt on the part of Verizon to demonstrate that its rate methodology resulted in a “constitutionally inadequate return.”⁶⁵ What is noteworthy is that the FCC did not contest the claim that its actions reduced economic values along the lines of *Market Street Railway*,⁶⁶ but rather focused on whether its rate methodology produced returns below some constitutionally determined floor.

The court in *Verizon* found that there was not sufficient evidence on the record to establish that the rate methodology in question was confiscatory in violation of *Hope* nor that it constituted an opportunistic switch in regulatory regimes prohibited under *Duquesne*.

First of all, there was no “switch” of methodologies, since the wholesale market for leasing network elements is something brand new under the 1996 Act. There was no replacement of any predecessor methods, much less an opportunistic switch “back and forth.” And to the extent that the incumbents argue that there was at least an expectation that some historically anchored cost-of-service method would set wholesale lease rates, no such promise was ever made.⁶⁷

The court either did not recognize or failed to acknowledge that the “brand new” wholesale market put in place to enable rivals to compete with incumbent providers was a substitute for PCR in disciplining retail rates.⁶⁸ The “switch” occurred in the methodology used to regulate the retail market, because the regulator’s control over wholesale prices conferred de facto control over retail prices.⁶⁹ In deference to *Duquesne*, the court further observed in *Verizon* that “there may be a taking challenge distinct from a plain vanilla objection to arbitrary or capricious agency action if a ratemaking body were to make opportunistic changes in ratesetting methodologies just to minimize return on capital investment in a utility enterprise.”⁷⁰ This passage is noteworthy for what the court does not say: that earnings must fall below the “floor” of the *Hope*

64. Brief for Respondents Federal Communications Commission & The United States at 13, *Verizon Communications Inc. v. FCC*, 535 U.S. 467 (2002) (Nos. 00-511, 00-555, 00-586, 00-590, 00-602), 2001 WL 726772, at *13.

65. *Id.* at 31.

66. See *infra* Section IV.D.

67. *Verizon Communications Inc. v. FCC*, 535 U.S. 467, 528 (2002).

68. See High Court, *supra* note 54, at 101-02. To draw an analogy, the court essentially found that a rule in basketball that prohibits raising the height of the basket is not violated by lowering the floor.

69. The financial markets confirmed what the court would not. The share prices of the incumbent telecommunications providers declined when the FCC announced its (pro-competitor) unbundling rules. See Thomas W. Hazlett & Arthur M. Havenner, *The Arbitrage Mirage: Regulated Access Prices with Free Entry in Local Telecommunications Markets*, 2 REV. NETWORK ECON. 440, 447-50 (2003). The necessary implication is that ACE policies exert downward pressure on prices with negative financial implications for the incumbent telecommunications providers.

70. *Verizon*, 535 U.S. at 527 (footnote omitted).

Standard. This “omission” is significant if it signals the court’s willingness to accept that regulatory actions that endogenously reduce earnings under PCR may constitute a taking even if those earnings do not fall to confiscatory levels.

D. Market Street Railway

In *Market Street Railway*, the Supreme Court reaffirmed that while the Due Process Clause of the Fourteenth Amendment cannot be applied to “insure values or restore values that have been lost by the operation of economic forces,” it does protect utilities against “governmental destruction of existing economic values.”⁷¹ The key question concerns whether regulators have the discretion to artificially create the market forces (via ACE policies) that have the effect of reducing existing economic values for the regulated firm even if the resulting financial returns remain compensatory. To state this question somewhat differently, is the validity of a takings claim independent of the origins of the market forces (artificial or natural) that reduce the regulated firm’s earnings?⁷²

Indeed, if regulators can use ACE policies as a fig leaf for the claim that market forces rather than economic regulation have reduced prices and earnings, then there is no protection against “governmental destruction of existing economic values.” This is precisely why we cannot reflexively rely upon the “competitive model” to determine just compensation because not all competitive roads lead to the same destination.⁷³

In general, governmental action that merely reduces value is not sufficient to establish a taking.⁷⁴ The important distinction here is that the

71. Notably, current case law does not differentiate between exogenous and endogenous market forces. This means that there is no distinction between the natural play of market and technological forces and those forces created and strengthened artificially at the hand of the regulator through ACE policies. I am grateful to Glen Robinson for this important observation.

72. See Hope for PCR, *supra* note 54. In *United States v. Cress*, 243 U.S. 384 (1917), the U.S. Supreme Court held that a taking had occurred because the reduced property values resulting from the rising height of the river had artificial (a system of locks and dams) as opposed to natural origins. Figuratively speaking, the court recognized the importance of distinguishing between the arsonist’s match and the strike of a lightning bolt.

73. It is important to distinguish carefully here between competition and mere rivalry. See ROBERT H. BORK, *THE ANTITRUST PARADOX* 58 (1978). For example, the regulator can set unduly low UNE rates to flood the market with rivals and suppress the market price. There should be no mistaking this artificially low market price for a “competitive price.” The concern is that the courts in adjudicating taking claims will fail to make this critical distinction.

74. In *Penn Central v. City of New York*, the Court observed that “[t]he economic impact of the regulation on the claimant and, particularly, the extent to which the regulation has interfered with distinct investment-backed expectations are, of course, relevant considerations.” 438 U.S. 104 at 124 (1978). The Majority further observes that “this Court has dismissed ‘taking’ challenges on the ground that, while the challenged government action caused economic harm, it did not interfere with interests that were sufficiently bound up with the reasonable expectations of the claimant to constitute ‘property’ for Fifth Amendment purposes.” *Id.* at 124-25. In dissent, Chief Justice Rehnquist observed that “A taking does not become a noncompensable exercise of police power simply because the government in its grace allows the owner to make some “reasonable” use of his property. “[I]t is the character of the invasion, not the amount of damage resulting from it, so long as the damage is substantial, that determines the question whether it is a taking.” *Id.* at 149-50.

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regulator's ability to appropriate excess earnings (reduce value) may exist only because the regulated firm was led to believe that it was the residual claimant for its efficiency gains under PCR when it was not. In this sense, the opportunity for the regulator to reduce value (appropriate excess returns) would not exist but for the successful deception of the regulated firm.⁷⁵ The natural question is why a regulated firm that anticipated that its excess earnings would be appropriated under PCR would have (i) invested the substantial time and resources required to replace RRR with PCR;⁷⁶ (ii) invested in the cost-reducing innovation required to improve performance and generate excess returns; and (iii) opted not to dissipate these earnings so that there would be no excess earnings to appropriate.⁷⁷ It would defy rationality for these regulated firms to have knowingly "left money on the table."

V. An Economic Standard for a Regulatory Taking

The existing case law notwithstanding, we contend that if PCR represents a superior regulatory regime relative to RRR, it must be the case that regulators cannot unilaterally reduce the price cap through the strategic use of ex post policy changes. Nonetheless, it is necessary to carefully distinguish between the regulator's decision to allow competition and the artificial propagation of that competition. It is only the latter that is pertinent to the question of a governmental taking.

A. Elements of the Proposed Standard

The economic standard proposed for a governmental taking under price regulation combines the traditional *Hope* Standard and what I refer to as the Sustainable Price Standard. The *Hope* Standard is discussed in detail above. The Sustainable Price Standard inquires whether the regulator's ex post policy

75. Professor Glen Robinson, a former FCC Commissioner (1974-76), questions why the incumbent providers should have been surprised by the regulatory policies designed to promote competition under PCR. Specifically, given that ACE policies were adopted when AT&T was subject to PCR (and RRR), would not the incumbent providers have rationally factored the likelihood of such policies into their *investment-backed expectations*? This question prompts two additional questions. First, if the financial markets anticipated the FCC's unbundling rules (and the competitive advantage they conferred on the rivals of the incumbent providers) how do we explain the adverse financial market reaction to the implementation of these rules? Second, do the ACE policies attendant to implementation of the 1996 Telecommunications Act represent a difference of kind rather than degree relative to historical benchmarks? To wit, regulators have never previously required incumbent providers to lease the individual components of their networks to rivals at prices based not on what it costs to provision these components but on what regulators believe it should cost (i.e., the *efficient-firm cost standard*).

76. It was common in the telecommunications industry for regulators to extract upfront "entry fees" from the regulated firms under their purview for the right to operate under PCR rather than RRR. These entry fees took many different forms, including network infrastructure/modernization commitments, rate freezes, bill credits, and refunds. See SAPPINGTON & WEISMAN, *supra* note 1, at ch. 3.

77. This dissipation of earnings may be accomplished through regulatory abuse. See *supra* note 21.

change renders the regulated firm's ex ante price (and concomitantly its earnings) unsustainable.

We commence the analysis by defining the following terms.

H = The minimum level of earnings per unit of time required to comply with the *Hope* Standard.

E = The level of earnings realized under PCR per unit of time with no ex post policy change.⁷⁸

E^A = The actual level of earnings realized under PCR per unit of time with the ex post policy change.

There is a two-part criterion for a taking. The first part inquires whether the traditional *Hope* Standard is violated. The second part inquires whether ACE policies (or other ex post policy changes that do not reflect *competition on the merits*) result in a level of earnings lower than that which the regulated firm would have realized otherwise. Specifically, do the regulator's actions endogenously reduce the regulated firm's earnings ex post by rendering the price that it would otherwise have been able to levy unsustainable?

Let T denote the monetary value of the governmental taking per unit of time where

$$T = \max \{0, H - E^A, E - E^A\}.$$
⁷⁹

A value of $T > 0$ indicates that a taking has occurred. There is a taking under the *Hope* Standard when $H - E^A > 0$ and a taking under the Sustainable Price Standard when $E - E^A > 0$. There is no taking under either standard when $T = 0 \Rightarrow H - E^A \leq 0$ and $E - E^A \leq 0$. Suppose that $H - E^A > 0$ and $E - E^A > 0$. Since both expressions have the E^A term in common, T is based on the *Hope* Standard when $H > E$ and the Sustainable Price Standard when $H < E$. The various taking permutations are illustrated in Table 1.

78. For example, this level of earnings may reflect the regulator's decision to open the market to competition but not reflect regulatory actions designed to propagate competition artificially (i.e., limiting the regulated firm's ability to respond to competition with lower prices). The litmus test is whether the regulator's actions violate competitive neutrality.

79. This notation simply states that the taking, T , is based on the maximum (largest) of the three values that appear inside the braces. Hence, when $H - E^A \leq 0$ and $E - E^A \leq 0$, there is no taking since $T = \max \{0, H - E^A, E - E^A\} = 0$.

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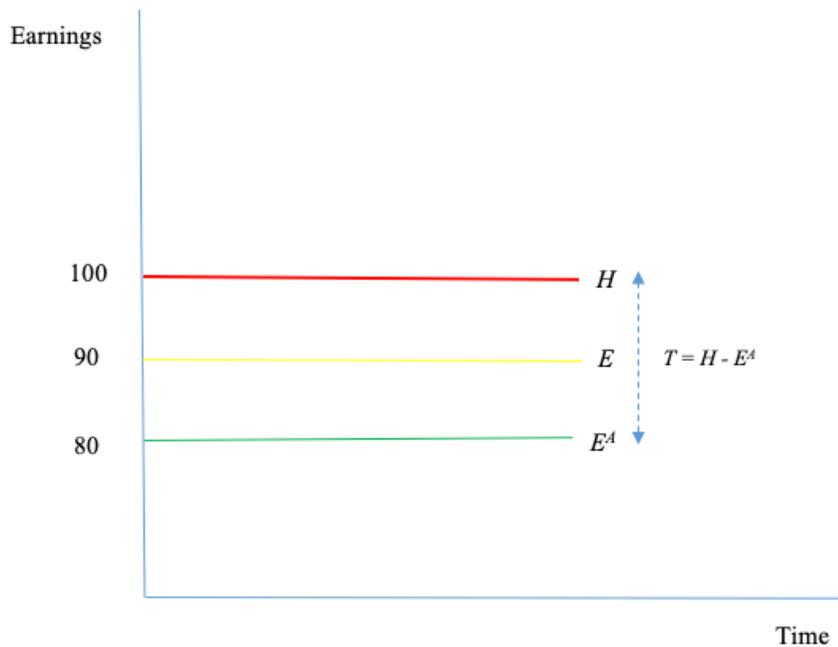
Table 1. Delineation of Taking Permutations

$H - E^A$	$E - E^A$	Hope Taking	Sustainable Price Taking
> 0	> 0	Yes	Yes
≤ 0	≤ 0	No	No
> 0	≤ 0	Yes	No
≤ 0	> 0	No	Yes

The following examples are instructive in understanding the mechanics of the proposed economic standard and how it could work in practice.

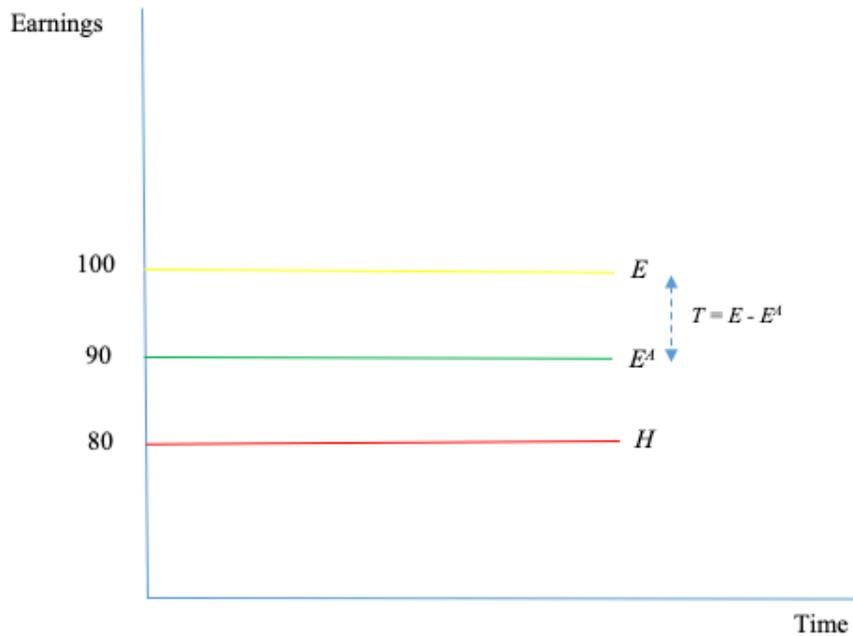
Example 1. Suppose that $H = 100$, $E = 90$ and $E^A = 80$. The monetary value of the taking is given by $T = \max \{0, 100 - 80, 90 - 80\} = \max \{0, 20, 10\} = 20$. There is a taking under both standards since $H - E^A = 20 > 0$ and $E - E^A = 10 > 0$. In this example, the *Hope* Standard correctly identifies both the existence of a taking and the monetary value of the taking. The Sustainable Price Standard understates the monetary value of the taking. This case is illustrated graphically in Figure 1.

Figure 1. Regulatory Taking Under Both Standards



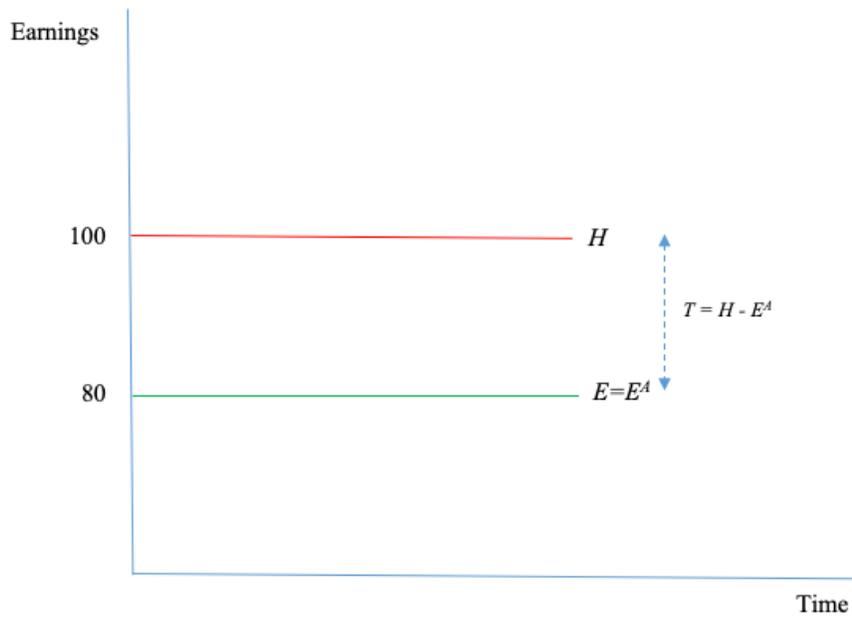
Example 2. Suppose that $H = 80$, $E = 100$ and $E^A = 90$. The monetary value of the taking is given by $T = \max \{0, 80 - 90, 100 - 90\} = \max \{0, -10, 10\} = 10$. There is no taking under the *Hope* Standard since $H - E^A = -10 < 0$. There is a taking under the Sustainable Price Standard since $E - E^A = 10 > 0$. In this example, the *Hope* Standard correctly identifies neither the existence of a taking nor the monetary value of the taking and therefore corresponds most closely with the *Verizon* case discussed in Section IV.C. This case is illustrated graphically in Figure 2.

Figure 2. Regulatory Taking Under Sustainable Price Standard



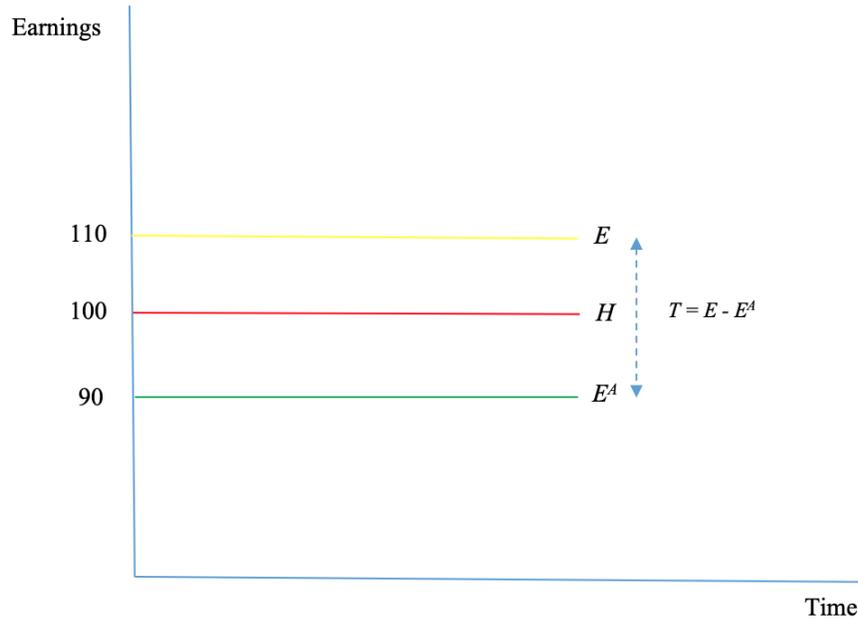
Example 3. Suppose that $H = 100$, $E = 80$ and $E^A = 80$. The monetary value of the taking is given by $T = \max \{0, 100 - 80, 80 - 80\} = \max \{0, 20, 0\} = 20$. There is a taking under the *Hope* Standard since $H - E^A = 20 > 0$, but there is no taking under the Sustainable Price Standard since $E - E^A = 0$. In this example, the Sustainable Price Standard correctly identifies neither the existence of a taking nor the monetary value of the taking. This case is illustrated graphically in Figure 3.

Figure 3. Regulatory Taking Under *Hope* Standard



Example 4. Suppose that $H = 100$, $E = 110$ and $E^A = 90$. The monetary value of the taking is given by $T = \max \{0, 100 - 90, 110 - 90\} = \max \{0, 10, 20\} = 20$. There is taking under both standards since $H - E^A = 10 > 0$ and $E - E^A = 20 > 0$. In this example, the *Hope* Standard correctly identifies the existence of a taking, but understates the monetary value of that taking. This case is illustrated graphically in Figure 4.

Figure 4. Regulatory Taking Under Both Standards



B. Discussion and Analysis

Several observations follow from this analysis. First, under PCR the regulator would no longer be able to insulate itself against a taking claim solely on the basis that earnings are sufficient (i.e., $E^A \geq H$). Second, one regulated firm may have a credible taking claim even though its earnings are relatively strong, whereas another regulated firm may have no taking claim even though its earnings are relatively weak. Third, we can conceive of pure PCR as conferring a property right upon the regulated firm as the residual claimant for its efficiency gains. Hence, a “taking” is any regulatory action that infringes on that property right.⁸⁰ Fourth, operating in isolation, the *Hope* Standard does not prohibit the regulator from “taking” from the regulated firm provided the amount that is taken does not undermine the ability of the enterprise to attract capital. Finally, under PCR the *Hope* Standard alone can be underinclusive in terms of identifying a regulatory taking and in determining the monetary amount of that taking.

It is natural to inquire why the traditional *Hope* Standard for a regulatory taking is necessarily problematic under price regulation. The simple answer is that the *Hope* Standard is not problematic if the objective is for PCR to perform

80. Any violation of competitive neutrality or residual regulatory obligations borne disproportionately by the incumbent provider would seemingly satisfy this condition. In practice, it may prove difficult to determine conclusively when the property right has been infringed upon unless it has a pronounced, adverse impact on the regulated firm’s earnings.

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similarly to RRR. To see this, suppose that we have two types of regulated firms, those with low potential for efficiency gains and those with high potential for efficiency gains. The former may be expected to perform similarly under RRR or PCR.⁸¹ The preponderance of the gains from PCR are likely to come from the high-potential firms. And yet, what incentive would these firms have to bear the high effort cost requisite to the realization of higher returns if the regulator can simply invoke the *Hope* Standard should these efforts prove successful to appropriate any realized efficiency gains ex post? In the final analysis, the low-potential firms are predestined for mediocrity while the high-potential firms exhibit mediocrity simply because they have limited incentives to do otherwise. It is in this manner that the traditional *Hope* Standard undermines the promise of PCR.

There are a multitude of challenges associated with the application of the proposed new standard for a regulatory taking that may not be easy to overcome. Prominent among these is the fact that it is difficult to precisely determine what the earnings of the regulated firm would have been absent the ex post regulatory policy change because the counterfactual is not observable.⁸² This is potentially problematic given the Supreme Court's observations in *Verizon* regarding the historical importance of incontrovertible data to support a taking claim.

This want of any rate to be reviewed is significant, given that this Court has never considered a taking challenge on a ratesetting methodology without being presented with specific rate orders alleged to be confiscatory.⁸³

Granted, the Court has never strictly held that a utility must have rates in hand before it can claim that the adoption of a new method of setting rates will necessarily produce an unconstitutional taking, but that has been the implication of much the Court has said.⁸⁴

The regulated firm must carry the burden for credibly demonstrating what its earnings would have been but for the regulator's ex post policy change, *ceteris paribus*. This is not a low bar. In addition, it may prove difficult to distinguish between the losses the regulated firm suffers from natural (organic) competition and those losses attributable to regulatory policies that artificially strengthen competition. There is also the matter of whether the taking calculation should

81. In fact, under the menu approach to incentive regulation, efficiency may be increased by providing the regulated firms with options among incentive regulation plans. The low-potential firms would be expected to self-select RRR or a low-powered variant of PCR. In contrast, the high-potential firms would be expected to self-select a high-powered variant of PCR. See Sappington, *supra* note 30, at 258-60; Sappington, *supra* note 8, at 234-36; Acton & Vogelsang, *supra* note 15.

82. In contrast, application of the *Hope* Standard would seem more straightforward quantitatively. The actual returns of the regulated firm are readily observed and the financial markets provide objective metrics as to the returns necessary to attract capital based on the risk profile of the enterprise.

83. *Verizon Communications Inc. v. FCC*, 535 U.S. 467, 524 (2002).

84. *Id.*

run in perpetuity or for a finite time period and, if it is the latter, how should that time period be determined? Further complicating matters is the fact that from *Duquesne* through *Verizon*,⁸⁵ the Supreme Court has refused to bite on the concept of an ex ante taking.⁸⁶

VI. Conclusion

The superior incentive properties of price regulation derive from the regulated firm being the residual claimant for its efficiency gains. This requires severing the link between allowed revenues and costs. The *Hope* Standard, which relies upon an earnings floor to constrain regulatory behavior, in combination with entry accommodation enables the regulator to reestablish the linkage between the regulated firm's costs and revenues under PCR and thereby appropriate its efficiency gains.

This Essay contends that if PCR is to have a valid claim of being a superior regulatory regime relative to traditional RRR, the standard for a regulatory taking must change accordingly. Specifically, the traditional *Hope* Standard, which predates the pervasive adoption of PCR, must be supplemented in a manner that limits the regulator's ability to recontract ex post with impunity so that the regulated firm remains the residual claimant for its efficiency gains.

To this end, this Essay proposes a two-part criterion for a taking. The first part inquires whether the traditional *Hope* Standard is violated. The second part, referred to as the Sustainable Price Standard, inquires whether ACE policies (or some other ex post regulatory policy actions that do not reflect *competition on the merits*) result in a level of earnings lower than that which the regulated firm would have realized otherwise. A taking may arise under the Sustainable Price Standard even when there is no taking under the *Hope* Standard. This implies that merely providing for "adequate revenues" would no longer be sufficient to reject a taking claim under price regulation.

The proposed new standard would ensure that the case law reflects the distinction that the economics literature makes between price-based and earnings-based regulatory regimes. Specifically, it is necessary to recognize

85. *Verizon* arguably involved a difference in kind because the rate structure in question was at the wholesale rather than the retail level. The plaintiffs no doubt recognized that an ex ante taking claim was a steep climb, but perhaps thought it was justified by recognition that this confluence of issues defied a straightforward ex post remedy. [It is noteworthy, however, that Baumol and Merrill explicitly raise the possibility of a Tucker Act remedy. See Baumol & Merrill, *supra* note 61, at 1052.] Specifically, there were significant irreversibilities at play in that new entrants would base their business plans and investment decisions on a regulatory policy that could be overturned. See High Court, *supra* note 54. In addition, the plaintiffs may have believed that the longer those policies remained in place, and the greater the reliance placed on those policies by competitors in making their respective investment decisions, the less likely those policies were to be reversed. See Baumol & Merrill, *supra* note 61, at 1039 (arguing that "the Takings Clause and the law of contracts are not thought to give rise to what amounts to injunctive remedy. Instead, they are thought to guarantee only a right to just compensation after a taking or breach occurs.").

86. See *id.* at 526 n.36.

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explicitly the property right conferred upon the regulated firm under price regulation as the residual claimant for its efficiency gains. Under this standard, a regulator would no longer be able to contend, as the FCC did in *Verizon*, that it retains the discretion under price regulation to “take,” provided that the amount that is taken does not jeopardize the financial viability of the enterprise. If regulators are permitted to invoke *Hope* in this manner, there may be no real hope for price cap regulation to constitute a meaningful departure from traditional rate-of-return regulation.