A Market Based Solution to Utility Ratemaking

Pranjal Drall, Mark Ellis, Jonathon R. Macey & Joshua C. Macey[*]

Electricity rates in the United States have risen sharply over the past decade, outpacing inflation and imposing significant costs on households and businesses. While many forces contribute to higher bills—including infrastructure investment, wildfire liability, and rising demand—one underappreciated driver is persistent overcompensation of investor-owned utilities. Under traditional cost-of-service regulation, state commissions administratively determine utilities' allowed return on equity (ROE) using contested financial models. Decades of empirical evidence indicate that these methods systematically authorize returns above utilities' true cost of equity, generating billions of dollars annually in excess profits. Because every basis point of authorized ROE applies to billions in rate base, even small overestimates translate into substantial wealth transfers from captive ratepayers to shareholders.

This Article propose a market-based solution to this problem: Competitive Direct Equity (CDE). Under CDE, utilities would raise new equity capital through standardized auctions in which investors bid the return they are willing to accept. The auction-clearing return becomes the allowed ROE for that tranche of equity, directly revealing the market cost of capital rather than inferring it from disputed models. CDE eliminates capital bias by aligning the return on equity with its opportunity cost over time.

Finally, we show that CDE is lawful under existing doctrine. Supreme Court precedent requires that rates be sufficient to attract capital but not confiscatory; it does not mandate any particular ratemaking methodology. Because CDE relies on competitive market evidence to establish a commensurate return, it by definition meets the constitutional standard of establishing that rates are high enough to attract capital.

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[*]J.D.-Ph.D. Student in Financial Economics at Yale Law School and the Yale School of Management; Senior Fellow at American Economic Liberties Project; Sam Harris Professor of Corporate Law, Corporate Finance, and Securities Law, Yale Law School; Professor, Yale Law School.

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Introduction

Electric bills have suddenly become a controversial political issue.[1] In the past decade, alone, residential rates have increased by 36%.[2] Ballooning electric rates cost households and businesses billions a year. They also exacerbate energy policy, strain state budgets, and make it difficult for state regulators to justify or meet ambitious renewable goals.

While several factors contribute to high electricity prices: aging infrastructure, wildfire liability and storm costs, and surging demand from artificial intelligence and data centers, among others.[3] But one critical issue—and perhaps the one most readily addressable by regulators—is that regulated utilities simply earn too much money. Utilities typically operate monopoly franchises. They are required to provide open, nondiscriminatory service to customers. Regulators review proposed investments, allow utilities to pass costs onto their captive ratepayers (customers), and earn a regulated return. Thus, unlike ordinary markets, where firms charge what the market can bear, utility profits are largely determined by state regulators in complex rate-setting proceedings.

In the past few decades, it has become increasingly clear that utilities have earned more than required by investors.[4] Regulators allow utilities to pay above-market returns to their

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[1] Jennifer Hiller, *Soaring Electricity Costs Are Now a Hot Political Issue*, The Wall St. J., January 17, 2026, https://www.wsj.com/business/energy-oil/soaring-electricity-costs-are-now-a-hot-political-issue-d0319a1d Isaac Arnsdorf & Evan Halper, *White House and Governors Confront Electricity's Rising Costs as Data Centers Expand*, Wash. Post (Jan. 16, 2026), https://www.washingtonpost.com/business/2026/01/16/pjm-data-centers-electricity-bipartisan/; Jarrett Renshaw & Laila Kearney, *White House to Host Big Tech After Pledge to Rein In Power Costs*, Reuters (Feb. 25, 2026), https://www.reuters.com/business/energy/white-house-host-big-tech-pledge-rein-power-costs-2026-02-25/; Allison Prang, *Governors Target High Energy Costs, Tout Affordability Efforts*, Bloomberg Law (Jan. 29, 2026); Tracey Trully, *On Day 1, Mikie Sherrill Focuses on Utility Costs and Children's Safety*, Governing (Jan. 20, 2026), https://www.nytimes.com/2026/01/20/nyregion/mikie-sherrill-executive-orders-new-jersey.html; Steve Holland & Kanisha Singh, *Trump, Mamdani say NY utility Con Edison needs to cut rates*, Reuters (Nov. 21, 2025), https://www.reuters.com/world/us/trump-mamdani-say-ny-utility-con-edison-needs-cut-rates-2025-11-21/.

[2] *Electric Power Monthly: Table 5.3. Average Price of Electricity to Ultimate Customers*, U.S. Energy Info. Admin. (Feb. 2026), https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=table_5_03 (showing the U.S. average prices for electricity in 2015 was 12.65 cents per kilowatt-hour for residential customers and it was 17.30 in 2025, a 36% increase.); Although these increases are largely in line with inflation, rates charged by investor-owned utilities have far outpaced inflation while rates charged by cooperatives and public power utilities have remained flat. *See* Am. Pub. Power Ass'n, *2025 Public Power Statistical Report* 9 (2025), https://www.publicpower.org/system/files/documents/2025-Public-Power-Statistical-Report.pdf.

[3] Ryan Wiser et al., *Factors influencing recent trends in retail electricity prices in the United States*, 38 ELEC. J. 107516 (2025) (finding evidence that prices are driven by increasing consumer loads and wildfires and storms).

[4] Several lines of evidence suggest that investor-owned utility returns are systematically too high such as the growing gap between IOU and municipal rates, direct estimates of the ROE-cost-of-equity spread, and persistent market-to-book ratios well above 1.0. *See* Stewart C. Myers & David W. Borucki, *Discounted Cash Flow Estimates*

investors. Such excess utility returns costs consumers an estimated $50 billion annually.[5] There are multiple potential explanations for these excessive utility returns. Some state utility commissions are subject to corruption or capture.[6] In addition, information asymmetries may make it difficult for regulators to scrutinize proposed utility investments. The absence of competitive pressures means utilities are insulated from the risk of entry by competitors and from pricing competition from rival suppliers.. Utilites also pay more for capital than necessary because the financial models typically used to set utility returns—discounted cash flow models (DCF), capital asset pricing models (CAPM), and risk premium, and expected earnings models —all are easily manipulable and highly sensitive to input assumptions, small shifts in assumptions often translates into hundreds of millions of additional costs to ratepayers.[7] The combination and interplay of

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of the Cost of Equity Capital—A Case Study, 3 FIN. MKTS., INST. & INSTRUMENTS 9, 25-26 (1994) ("The median or average DCF estimates are generally substantially lower than the rates of return earned by these companies on book equity. This result is not "noise." … There is no way to square these numbers with the standard view of the objectives of rate of return regulation."); David C. Rode & Paul S. Fischbeck, *Regulated Equity Returns: A Puzzle*, 131 ENERGY POL'Y 110994 (2019) (concluding that regulators authorize excessive returns on equity and that these excess returns translate into realized profits for utility firms); Karl Dunkle Werner & Stephen Jarvis, *Rate of Return Regulation Revisited* 18–22 (Energy Inst. at Haas, Working Paper No. 329R, rev. Mar. 2025) (estimating the gap between allowed ROE and cost of equity at roughly one to five percentage points over three decades, with excess costs to consumers averaging approximately $7 billion per year); Mark E. Ellis, *Rate of Return Equals Cost of Capital: A Simple, Fair Formula to Stop Investor-Owned Utilities from Overcharging the Public* 8–12 (Am. Econ. Liberties Project, 2025) (calculating that excess IOU returns cost customers approximately $50 billion per year after tax gross-up, and noting that the gap between IOU and public utility residential rates more than doubled from 12% in 2020 to 29% in 2023); Stewart C. Myers, *The Application of Finance Theory to Public Utility Rate Cases*, 3 BELL J. ECON. & MGMT. SCI. 58, 65–70 (1972) (demonstrating that a regulated firm's market-to-book ratio should equal 1.0 when the allowed return equals the cost of equity, and that ratios persistently above 1.0 imply regulators are setting returns too high). U.S. electric utilities have maintained aggregate market-to-book ratios near 2.0 to 2.3 in recent years, *see* Werner & Jarvis, *supra*, at 19–20; Ellis, *supra*, at 8–9.

[5] Ellis, *supra* note __, at 9.

[6] *See* generally, George J. Stigler, *The Theory of Economic Regulation*, 2 BELL J. ECON. & MGMT. SCI. 3, 3–4 (1971) ("as a rule, regulation is acquired by the industry and is designed and operated primarily for its benefit."); Mark Van Orden, *Power Play: Political Contributions and Regulatory Capture in the Electric Utility Industry* (Ctr. for Growth & Opportunity, Working Paper, Oct. 31, 2023) (

[7] For instance, the capital asset pricing model (CAPM), a commonly used model by regulators, is highly sensitive to three inputs. First, beta. Beta measures how much a stock's returns move with the overall market. It is estimated by regressing the stock's historical returns against a market index over some past time period. The estimate changes depending on the window length (two years versus five) and the data frequency (weekly versus monthly), and whether the analyst applies some adjustment. *See* Marshall E. Blume, *On the Assessment of Risk*, 26 J. FIN. 1, (1971). Utility stocks tend to have low raw betas, often between 0.5 and 0.7, but adjusted betas are higher. The

information asymmetries, asymmetric error costs, and limited competition means that regulators have strong incentives to err on the side of systematically overcompensating utilities.

The high returns currently earned by utilities are thus best understood as manifestations ofregulatory failure. Under existing law, regulators must authorize returns that are "commensurate with returns on investments in other enterprises having corresponding risks" and sufficient to "maintain financial integrity [and] attract capital," but no more.[8] When state public utility commissions approve unnecessarily high returns, customers are compensating shareholders well beyond what is needed to support reliability, safety, or decarbonization. Importantly, while this legal standard is often discussed as prohibiting confiscatory rates that prevent utilities from attracting capital, it also creates a corresponding obligation that regulators make sure rates are not unnecessarily high. To the extent that utility returns force captive ratepayers to transfer wealth to utilities' investors, reform is needed to ensure that regulators are meeting their own statutory and constitutional duties to protect ratepayers from excessive rates.

We propose a new, entirely practical mechanism to address this problem: require utilities to raise new equity through competitive auctions—what we call competitive direct equity (CDE)—in which prospective investors bid the price they are willing to pay in order to obtain a certain promised return. Our starting point is that economic regulation is a second-best solution for setting prices (and utility rates) when market pricing is not available. Market competition is

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choice between raw and adjusted beta alone can move the CAPM output by fifty basis points or more. Second, the equity risk premium (ERP). The ERP is the additional return investors demand for holding stocks rather than Treasury bonds. Analysts estimate it using long-run historical averages (typically drawing on data going back to 1926), forward-looking models derived from current stock prices and expected earnings, or survey data. These approaches produce estimates that differ by several hundred basis points. Aswath Damodaran, *Equity Risk Premiums (ERP): Determinants, Estimation, and Implications—The 2024 Edition* 1–10 (Mar. 5, 2024), https://ssrn.com/abstract=4751941. Because the ERP is multiplied by beta to produce the risk premium, even a one-percentage-point difference in the assumed ERP translates directly into the final ROE. Third, peer group selection. Analysts typically estimate beta and other parameters not for the subject utility alone but for a group of comparable publicly traded utilities. Which firms belong in this "proxy group" is itself contested. Including or excluding a single company based on size, business mix, credit rating, or regulatory environment can shift the group-average beta, the average growth rate, and thus the model output. Separately, the choice of which model to use can also cause issues, *see* John D. Quackenbush, *Cost of Capital and Capital Markets: A Primer for Utility Regulators* (Nat'l Ass'n of Regul. Util. Comm'rs Dec. 2019), https://pubs.naruc.org/pub.cfm?id=CAD801A0-155D-0A36-316A-B9E8C935EE4D. We discuss subjectivity from model choice and inputs extensively, see *infra* Part II.A.

[8] FPC v. Hope Natural Gas Company, 320 U.S. 591, 603 (1944).

always preferred. We have developed a market to replace the archaic and outdated regulatory constructs that currently are used to set prices.

From a practical perspective, holding an auction to inform the rate setting process will avoid the pathologies that lead state utility regulators to authorize excessive returns: if IOUs are in fact earning systematically above-market returns, then outside investors will be willing to invest in utilities at lower returns than they are currently receiving. As with the issuance of utility debt, CDE will bid down the allowed ROE until investor demand reflects market risk, eliminating the need for complex and dubious administrative guesswork. The process for soliciting bids for utility equity would induce investors to reveal directly the ROE needed to support investment.

There are a number of reasons CDE is preferable to existing mechanisms for setting utility returns. First, CDE fulfills the Supreme Court's standard for ensuring that rates are not confiscatory. Utility returns must reflect the risk be sufficient to attract capital, regulators have broad discretion in selecting the method for calculating ROE. CDE easily satisfies that standard, since the market auction directly reveals what return is necessary to attract capital.

Second, and relatedly, CDE is also simple and straightforward to implement. Many states public utility commissions have broad authority to set rates under a statutory "just and reasonable" standard.[9] Commissions easily can invoke that authority to set rates through CDE. Where commissions do not have such authority, states could authorize it through ordinary legislation.

Third, CDE removes the regulatory discretion from the rate-setting process. Current approaches to setting ROE are highly subjective, and expert witnesses have significant leeway to push commissions to authorize generous returns.[10] When commissions seek to lower ROE, rate cases frequently devolve into a battles of experts that systematically favor utilities.[11] CDE would

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[9] *Mandate Versus Movement: State Public Service Commissions and Their Evolving Power Over Our Energy Sources*, 135 HARV. L. REV. 1616, 1620 (2022) ("… state PSCs generally share the same mandate: ensure customers' utility rates are 'just and reasonable.' This language is the core charge of PSCs and has guided their decision making for nearly a century."); *See* e.g., ARK. CODE ANN. § 23-2-304(a)(1) (West 2019) (granting power to the Arkansas PSC to "[f]ind and fix just, reasonable, and sufficient rates"); OR. REV. STAT. ANN. § 756.040(1) (West 2021) ("[T]he commission shall make use of the jurisdiction and powers of the office to protect such customers, and the public generally, from unjust and unreasonable exactions and practices and to obtain for them adequate service at fair and reasonable rates."); *id.* at n.17.

[10] *See infra* Part II.A.

[11] *See infra* Part II.B.

eliminate this battle of the experts by replacing a contested modeling exercise with a single transparent market-verified statistic.

Over the next two decades, utilities will invest trillions in grid modernization, transmission build-out, and the clean-energy transition.[12] Every percentage point of excess return translates into enormous costs that are ultimately borne by ratepayers who have little choice in selecting their electric supplier. To put this in concrete terms, on a $10 billion rate base, every percentage point of excess return results in roughly $68 million in additional costs a year.[13] Each wasted percentage point means every infrastructure dollar goes roughly twenty-five percent less far—precisely at the moment when decarbonization requires maximum efficiency in capital deployment.[14] Scaled nationally, excess allowed ROE essentially takes away resources that could otherwise finance more generation, storage, or transmission.

This Article proceeds in four parts. Part I explains the goals and legal standards of rate regulation and shows how commissions describes the legal standard for setting utility rates. Part II discusses deficiencies in ratemaking approaches. Part III explains our proposed solution, Competitive Direct Equity (CDE), that uses investor bidding to reveal the true cost of equity while preserving regulatory oversight. Part IV argues that CDE is superior to alternative reform proposals.

I. The Purpose and Logic of Rate Regulation

This Part explains why utilities are regulated and how the regulatory system works. Section A describes the natural-monopoly rationale for rate regulation and the "regulatory compact" under which utilities accept price regulation in exchange for exclusive service territories. Section B lays out the mechanics of cost-of-service ratemaking, including the revenue-requirement formula, rate

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[12] Jason Lehmann, Brian Collins, Dan Lowrey & Heike Doerr, *Energy Utility Capex Predicted to Top $1 Trillion from 2025 through 2029*, S&P Global Mkt. Intell. (Apr. 3, 2025), https://www.spglobal.com/market-intelligence/en/news-insights/research/energy-utility-capex-predicted-to-top-1-trillion-from-2025-through-2029.

[13] On a $10 billion rate base with a typical 50/50 debt-equity ratio, one excess percentage point of ROE generates $50 million in additional net income. At the national average combined federal and state tax rate of 26%, utilities pass through the associated income taxes to customers, bringing the total cost to approximately $68 million, Ellis, *supra* note __, at 4, 9, 20-22.

[14] The return on capital together account for roughly half of a typical utility's total revenue requirement and since the amount earned (ROE plus associated taxes) can be cut by nearly half under the CDE, the capital share of rates drops by about 20%. The reciprocal, 1/(1-0.20), equals 1.25, meaning each customer dollar funds 25% more infrastructure. Ellis, *supra* note __, at 9.

base, capital structure, and the critical distinction between the cost of debt (which is observable) and the cost of equity (which is not). Section C traces the constitutional standard over the 20th century, showing that the Supreme Court requires allowed returns sufficient to maintain financial integrity and attract capital but has never mandated any particular methodology for getting there.

A. The Rationale for Regulating Natural Monopolies

Electric, gas, and water distribution companies do not look like ordinary firms operating in competitive markets. They are network businesses built on "sunk" assets, such as wires, pipes, substations, treatment plants. Once the network is in the ground, the marginal cost of serving one more unit of electricity or water is tiny compared to the upfront fixed cost of setting up the system. As the amount of output increases, average costs decline. In essence, one firm can serve the market more cheaply than any combination of multiple firms. That is the definition of a "natural monopoly."[15]

Trying to force competition into the infrastructure owned by a natural monopoly is oftenwasteful. Two electric distribution companies running duplicate sets of poles and wires down the same street would require double the capital to set-up without doubling demand. The second network is redundant, as it would sit half-used and drive total costs up. Consequently, regulation in these sectors explicitly "replaces competition" as the device society uses to ensure "good performance" because ordinary competition over entry, price, and capacity would be "self-defeating."[16]

If left unregulated, a utility would take advantage of its monopoly franchise to extract monopoly rents. The utility would restrict output, and customers would pay whatever the utility and its investors could extract, subject only to political pressure.[17] A monopolist would also tend

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[15] Alfred E. Kahn, THE ECONOMICS OF REGULATION: PRINCIPLES AND INSTITUTIONS 123 (John Wiley 1971) (explaining that natural monopoly arises when "one company can serve any given number of subscribers ... at lower cost than two."); Richard A. Posner, *Natural Monopoly and Its Regulation*, 21 STAN. L. REV. 548, 548–52 (1969) ("If the entire demand within a relevant market can be satisfied at lowest cost by one firm rather than by two or more, the market is a natural monopoly."); Paul L. Joskow, *Regulation of Natural Monopoly*, in HANDBOOK OF LAW AND ECONOMICS 1227, (A. Mitchell Polinsky & Steven Shavell eds., 2007)

[16] Kahn, *supra* note __, at 10, 20; Stephen G. Breyer, REGULATION AND ITS REFORM 15–35 (1982) (identifying natural monopoly as one of the principal justifications for regulation).

[17] Janice A. Beecher, *Economic Regulation of Utility Infrastructure*, *in* INFRASTRUCTURE AND LAND 87 (2013), available at https://www.lincolninst.edu/app/uploads/2024/04/economic-regulation-of-utility-infrastructure_0.pdf, 123 ("Because the public typically regards these services as essential—water and electricity

to underinvest in quality, reliability, and access since saving on costs would not be punished by consumers that cannot easily avoid by switching providers.[18]

Public utility law is the primary regulatory response to these structural problems.[19] Rather than banning private ownership altogether or nationalizing the systems, legislatures give utilities exclusive service territories and legal protection from entry. But, in exchange, they impose an affirmative "obligation to serve" demand in their service territories at regulated "just and reasonable" rates.[20]

In other words, ratemaking is supposed to make up for the lack of competition. In the industry[21] Regulators do not aim to drive profits to zero, but rather to approximate the price and investment behavior that would emerge if these services were provided competitively without sacrificing scale economies.[22] A classic treatise on utility regulation frames the core aims as: (1)

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again being excellent examples—such monopolists would be able to charge extremely high prices."); It is theoretically possible that some customers would go off-grid, but that is an unrealistic and extremely costly option for most customers, *see* Severin Borenstein & James Bushnell, *The U.S. Electricity Industry After 20 Years of Restructuring*, 7 ANN. REV. ECON. 437 (2015).

[18] *See* Paul L. Joskow, *Incentive Regulation in Theory and Practice: Electricity Distribution and Transmission Networks*, in ECONOMIC REGULATION AND ITS REFORM: WHAT HAVE WE LEARNED? 195 (Nancy L. Rose ed., 2014)

[19] Gary D. Allison, *Imprudent Power Construction Projects: The Malaise of Traditional Public Utility Policies*, 13 Hofstra L. Rev. 507, 512 (1985) ("The goal of government regulation of public utilities is to provide society with utility services in larger amounts, at lower costs, and under more stable conditions than would result from operation of these industries in the free market."); K. Sabeel Rahman, *Internet Platforms as the New Public Utilities*, 2 Geo. L. Tech. Rev. 234, 237 (2018) ("In economistic terms, public control over infrastructure is warranted in conditions of natural monopoly, where high sunk costs and increasing returns to scale suggest that private market competition is likely to under-supply the good in question"); *Cf.* Harold Demsetz, *Why Regulate Utilities?*, 11 J.L. & ECON. 55, 57–60 (1968) (questioning whether regulation is necessary but acknowledging the risk of monopoly pricing absent intervention).

[20] Cole Jermyn & Michael Zimmerman, *Utilities' Duty to Serve in an Era of End-Use Electrification*, 46.3 ENERGY L. J. 491 (2025) ("[U]tilities are granted a utility franchise (i.e. monopoly) to provide safe and adequate service to all interested parties in a particular service territory. In return, the PUC has the authority over the rates a utility charges its customers, which must be just and reasonable."); Jim Rossi, *The Common Law "Duty to Serve" and Protection of Consumers in an Age of Competitive Retail Public Utility Restructuring*, 51 VAND. L. REV. 1233, 1243–50 (1998) (tracing common law roots of the duty to serve and the shift toward the regulatory compact framing).

[21] Jersey Central Power & Light v. FERC, 810 F.2d 1168 (D.C. Cir. 1987) at 1190 (Starr, J., concurring) ("Rate regulation is, in theory, the substitute for competition.").

[22] Kahn, supra note __, 17 ("the single most widely accepted rule for the governance of the regulated industries is to regulate them in such a way as to produce the same results as would be produced by effective competition, if it were
feasible.").

service that is universally available and nondiscriminatory; (2) prices that track underlying costs as closely as practicable; and (3) a total revenue level ample to attract capital but not so high as to give the utility's owners more than a fair return.[23]

Universal service is another justification for affirmatively granting utilities monopoly franchises. Unlike firms that operate in competitive markets, regulated utilities cannot walk away from unprofitable customers. The obligation to serve means the network must extend to rural and low-income customers even if it would otherwise not be economic to sell electricity to those customers.[24] To induce utilities to meet their service obligations, regulators rely on cross-subsidies within and across customer classes.[25] That, in turn, means utilities must be shielded from competition or otherwise subsidized to prevent competitors from entering the market and taking financially lucrative business segments, leaving the utility obligated to serve less profitable customers.

The "regulatory compact" narrative, sometimes associated with Samuel Insull, captures this settlement in quasi-contractual terms.[26] In exchange for exclusive territorial franchises and a fair opportunity to recover the prudently incurred costs, utilities accept pervasive price and entry

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[23] James C. Bonbright, PRINCIPLES OF PUBLIC UTILITY RATES 292–311 (1961); Some states even enshrine these principles into statute, *see* 66 Pa. Cons. Stat. § 1501 (requiring utilities to furnish "adequate, efficient, safe, and reasonable service").

[24] F.L. Norton IV, *The Wholesale Service Obligation of Electric Utilities*, 6 ENERGY L.J. 179 (1985), 181 ("Corporations which devote their property to a public use may not pick and choose, serving only the portions of the territory covered by their franchises which it is presently profitable for them to serve and restricting the development of the remaining portions by leaving their inhabitants in discomfort without the service which they alone can render").

[25] G. Chan & Alexandra B. Klass, *Regulating for Energy Justice*, 97 N.Y.U. L. REV. 1426 (2022) ("Despite efforts to differentiate a public utility's customers based on differential cost of service, in virtually all infrastructure systems some amount of cross-subsidization is inevitable and, in some cases, can even be intentional and desirable."); Richard A. Posner, *Taxation by Regulation*, 2 BELL J. ECON. & MGMT. SCI. 22, 29–35 (1971) (arguing that internal cross-subsidies function as a hidden tax imposed through the rate structure).

[26] J. Gundlach, *Harmonizing States' Energy Utility Regulation Frameworks and Climate Laws: A Case Study of New York*, 41.2 ENERGY L. J. 211, 216 (2020) (quoting JONATHAN A. LESSER & LEONARDO R. GIACCHINO, FUNDAMENTALS OF ENERGY REGULATION 43 (2007)) ("The term "regulatory compact" refers to the understanding between monopoly utility companies and their economic regulators, pursuant to which the regulator grants the company a protected monopoly . . . for the sale and distribution of electricity or natural gas to customers in its defined service territory. In return, the company commits to supply the full quantities demanded by those customers at a price calculated to cover all operating costs plus a 'reasonable' return on the capital invested in the enterprise.")

regulation and a duty to serve all comers.[27] The regulator has an obligation to "compensate the utility for all costs that it prudently . . . incurs to meet those obligations."[28] Without this assurance, the utility would "not agree to supply service."[29]

Although recent scholarship has cast doubt on whether any such "compact" ever existed as a legal matter,[30] the idea accurately describes the economic incentives utility regulators face. Natural monopoly justifies granting a protected franchise, and the same natural monopoly makes it necessary for regulators to control the rates that utilities charge.

This Article accepts that this regulator model will persist. One can argue that ownership and industry structure should undergo more radical reform through municipalization, franchise bidding, or full liberalization.[31] However, so long as investor-owned utilities operate protected

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[27] George L. Priest, *The Origins of Utility Regulation and the "Theories of Regulation" Debate*, 36 J.L. & ECON. 289, 295–304 (1993) (tracing the history of utility franchising and showing that municipalities granted exclusive franchises long before state commissions were created); Karl McDermott, *Cost of Service Regulation in the Investor-Owned Electric Utility Industry: A History of Adaptation* (Edison Elec. Inst. June 2012), https://www.ourenergypolicy.org/wp-content/uploads/2012/09/COSR_history_final.pdf ("The Regulatory Compact, which lies at the heart of cost of service regulation, involves a set of mutual rights, obligations, and benefits that exist between the utility and its customers."); William Boyd, *Just Price, Public Utility, and the Long History of Economic Regulation in America*, 35 YALE J. ON REG. 721, 740–55 (2018) (situating the regulatory compact within a longer tradition of just-price principles from the common law).

[28] Paul L. Joskow & Richard Schmalensee, *Incentive Regulation for Electric Utilities*, 4 Yale J. on Reg. 1 (1986), [hereinafter Joskow & Schmalensee, *Incentive Regulation*] 9 ("Straight-line depreciation is employed, with asset lifetimes that are to some extent arbitrary-and thus the subject of debate from time to time.").

[29] Joskow & Schmalensee, *Incentive Regulation*, *supra* note _, at 9.

[30] Ari Peskoe, *Utility Regulation Should Not Be Characterized as a "Regulatory Compact"*, 1–8 (Harv. Envtl. Policy Initiative 2016), http://eelp.law.harvard.edu/wp-content/uploads/Harvard-Environmental-Policy-Initiative-QER-Comment-There-Is-No-Regulatory-Compact.pdf (arguing that no actual contract exists and that the compact metaphor unduly constrains regulators); *see also* Harvey L. Reiter, *Competition Between Public and Private Distributors in a Restructured Power Industry*, 19 ENERGY L.J. 333, 338–43 (1998); Joshua C. Macey & Jackson Salovaara, *Rate Regulation Redux*, 168 U. PA. L. REV. 1181, 1192–95 (2020) (explaining that the compact analogy obscures the legislative and administrative foundations of utility regulation).

[31] *See* Demsetz, *supra* note 3, at 63–65 (proposing franchise bidding as an alternative to ongoing price regulation); Paul L. Joskow & Richard Schmalensee, MARKETS FOR POWER: AN ANALYSIS OF ELECTRIC UTILITY DEREGULATION 1–8 (1983); Oliver E. Williamson, *Franchise Bidding for Natural Monopolies—in General and with Respect to CATV*, 7 BELL J. ECON. 73, 73–80 (1976) (critiquing Demsetz's franchise-bidding proposal on grounds of contract incompleteness and asset specificity). *See also* David E.M. Sappington & J. Gregory Sidak, *Competition Law for State-Owned Enterprises*, 71 STAN. L. REV. 479, 490–95 (2019) (comparing regulatory oversight and public ownership as alternative governance structures for natural monopolies).

networks, the key institutional challenge is to design ratemaking procedures that deliver universal service at the lowest feasible cost consistent along with financial viability.[32]

B. How Ratemaking Works

If regulation is a substitute for competition, the obvious question is how to best approximate competitive outcomes. In practice, modern rate-of-return (cost-of-service) regulation is built around the idea that regulators set total revenues so that, over a defined period, the utility can (1) recover its operating costs, (2) recover the capital it has invested over time, and (3) earn a return on the capital that is being used to serve customers.[33] Regulators typically express this in a revenue requirement formula.[34]

Operating and maintenance ("O&M") expenses cover the day-to-day costs of running the system such as labor, materials, fuel, purchased power, billing, storm repairs.[35] Depreciation is the gradual "return of" capital through an accounting charge that spreads the original cost of long-lived assets (poles, wires, plants, pipes) over their useful lives.[36] Taxes reflect the income and other tax obligations the firm will incur. The final term is the allowed return on capital, which represents the profit opportunity designed to compensate investors for investing in an illiquid, regulated enterprise rather than some other business.[37]

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[32] This has long been the primary aim of utility regulation, *see* Inara Scott, *Teaching an Old Dog New Tricks: Adapting Public Utility Commissions to Meet Twenty-First Century Climate Challenges*, 38 HARV. ENVTL. L. REV. 371, 386 (2014) (quoting JOHN BAUER, EFFECTIVE REGULATION OF PUBLIC UTILITIES 12 (1925)) ("As one commentator of the early twentieth century opined, "[h]istorically, the strongest force for regulation was undoubtedly the demand for reasonable rates." Certainly the focus of the courts—and the utilities—was on deciding what constituted a reasonable rate.").

[33] Kahn, *supra* note __, at 28–32 (describing the revenue-requirement formula as the sum of operating expenses, depreciation, taxes, and a fair return on invested capital)

[34] *Revenue Requirement = Operating & Maintenance Expenses + Depreciation + Taxes + (WACC × Rate Base)*; *see* William G. Bolgiano, *Rate Case Expense: A Uniquely Anti-Consumer Form of Litigation Fee Shifting*, 46 ENERGY L.J. 529, 533 & n.17 (2025); Paul L. Joskow & Richard Schmalensee, *Cost-of-Service Regulation of Electricity Distribution Services in the U.S.*, *in* Handbook on Electricity Regulation 50 (Jean-Michel Glachant, Michael G. Pollitt & Paul L. Joskow eds., Edward Elgar Publishing 2025) [hereinafter Joskow & Schmalensee, *Cost of Service*].

[35] Joskow & Schmalensee, *Cost of Service*, *supra* note __, 50.

[36] Joskow & Schmalensee, *Incentive Regulation*, *supra* note __, 6 ("Straight-line depreciation is employed, with asset lifetimes that are to some extent arbitrary-and thus the subject of debate from time to time.").

[37] Joskow & Schmalensee, *supra* note __, at 12–18 (explaining that the allowed return on rate base compensates investors for the opportunity cost of capital; Stewart C. Myers, *The Application of Finance Theory to Public Utility Rate Cases*, 3 BELL J. ECON. 58, 60–65 (1972) (arguing that the allowed return should equal the market cost of

The "rate base" is the book value of assets on which the utility is allowed to earn a regulatory return. In broad terms, it is the original cost of used and useful property in service minus depreciation and offsets (like customer-funded contributions), plus certain working-capital allowances.[38]

At a high level, there are two regulatory standards for denying cost recovery. First, the "used and useful" test means that assets that aren't actually serving customers are not supposed to be included in the rate base.[39] These represent overbuilt capacity, speculative side ventures, or mothballed projects. Second, the "prudence" standard allows regulators to disallow costs that were incurred unreasonably even if the underlying asset is now in service.[40] For instance, if a nuclear plant is abandoned after significant cost overruns, the commission can exclude some or all of the stranded investment from rate base rather than forcing customers to make investors whole.[41]

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capital for investments of comparable risk). Morin, *supra* note __, at 29–45 (explaining that the cost of capital represents the minimum return needed to attract investment).

[38] Joskow & Schmalensee, *supra* note __, at 50 ("In the US, state regulators and FERC generally calculate the rate base as the original cost of allowable investments in utility assets less the accumulated straight-line depreciation of those assets.")

[39] *See* Smyth v. Ames, 169 U.S. 466, 546–47 (1898) ("The basis of all calculations as to the reasonableness of rates to be charged by a corporation maintaining a highway under legislative sanction must be the fair value of the property being used by it for the convenience of the public"); Denver Union Stock Yard Co. v. United States, 304 U.S. 470, 475 (1938) (holding that regulated firm is "not entitled to have included any property not used and useful for that purpose" in the rate base); James J. Hoecker, *"Used and Useful": Autopsy of a Ratemaking Policy*, 8 ENERGY L.J. 303, 305–16 (1987) (tracing the evolution of the used-and-useful doctrine from Smyth v. Ames through Hope Natural Gas); Jonathan A. Lesser, *The Used and Useful Test: Implications for a Restructured Electric Industry*, 23 ENERGY L.J. 349, 355–68 (2002) (analyzing the test's application to generation, transmission, and distribution assets).

[40] *See* Mo. ex rel. Sw. Bell Tel. Co. v. Pub. Serv. Comm'n, 262 U.S. 276, 289 & n.1 (1923) (Brandeis, J., concurring) (first advocating the "prudent investment" methodology as an alternative to fair-value ratemaking); Paul G. Kauper, *Wanted: A New Definition of the Rate Base*, 37 MICH. L. REV. 1209, n.7 (1939) ("The most comprehensive and effective criticism of the fair value dogma by a member of the Court is to be found in Justice Brandeis' concurring opinion in State of Missouri ex rel. Southwestern Bell Telephone Co…").

[41] Duquesne Light Co. v. Barasch, 488 U.S. 299, 307–12 (1989) (holding that Pennsylvania's disallowance of "prudently incurred" costs for canceled nuclear plants did not constitute an unconstitutional taking where the overall rate order still permitted a reasonable return); 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, 115–25 (1991) (analyzing Duquesne's implications for investor expectations under the prudent-investment standard); Richard J. Pierce, Jr., *The Regulatory Treatment of Mistakes in Retrospect: Canceled Plants and Excess Capacity*, 132 U. PA. L. REV. 497, 511-12 (1984) (explaining that if the investment decision was imprudent on the information reasonably available at the time, "all costs associated with that decision are disallowed," and that "all of a utility's investment

These doctrines allow public utility commissions to protect ratepayers from monopoly abuses. If every dollar of capital automatically earned the allowed rate of return, utilities would have an incentive to expand the rate base by spending more regardless of whether the underlying investments are efficient. In a seminal paper, Harvey Averch and Leland Johnson demonstrated that when the allowed return exceeds the true cost of capital, regulated firms will systematically overinvest in capital relative.[42] This is known as "gold-plating." The used-and-useful and prudence screens are designed to limit the earning opportunity to capital that is genuinely serving present or future customers.[43]

Utilities do not finance their rate base with a single source of money. They borrow (issue debt) and sell stock (equity). The rate of return reflects the overall opportunity cost of that mix and can be calculated using a the WACC formula: [44]

$$\textit{Rate of Return} = (\textit{Debt/ Total Capital}) \times \textit{Cost of Debt} \times (1 - \textit{Tax Rate}) + (\textit{Equity/Total Capital}) \times \textit{Cost of Equity}$$

There are three components in this formula. First, capital structure, the specific mix of debt and equity a company uses to fund its operations and growth. Utilities in the United States have roughly an even mix of debt and equity.[45] Commissions either accept the utility's actual debt-equity mix or impute a reasonable capital structure.[46]

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or any portion thereof can be excluded from rates" based on imprudence in decisions related to the investment, including the decision to construct and the decision not to cancel).

[42] Harvey Averch & Leland L. Johnson, *Behavior of the Firm Under Regulatory Constraint*, 52 AM. ECON. REV. 1052 (1962) (proving formally that when the allowed rate of return exceeds the true cost of capital, a profit-maximizing regulated firm will overinvest in capital relative to the efficient level).

[43] The efficacy of such screens is highly debated, *see Infra* II.C.

[44] This is simply the weighted average cost of capital formula that is ubiquitous in modern finance, *see* John D. Quackenbush, *Cost of Capital and Capital Markets: A Primer for Utility Regulators* (Nat'l Ass'n of Regul. Util. Comm'rs Dec. 2019), https://pubs.naruc.org/pub.cfm?id=CAD801A0-155D-0A36-316A-B9E8C935EE4D ("The Weighted Average Cost of Capital (WACC) is a fundamental financial concept that is widely used in the financial community by investors, investment bankers, academics, and corporate financial professionals.").

[45] Werner & Jarvis, *supra* note __, at 9 ("Utilities fund their operations through issuing debt and equity, typically about 50%/50%."); Jim Lazar, *Electricity Regulation in the U.S.: A Guide* 54, (Regulatory Assistance Project, 2d ed. June 2016), https://www.raponline.org/wp-content/uploads/2023/09/rap-lazar-electricity-regulation-US-june-2016.pdf ("In general, US utilities have between 40 and 60 percent debt, and between 60 and 40 percent equity.").

[46] Lazar, *supra* note __, at 69 ("The commission's approved capital structure is often different than the utility's actual capital structure, especially where the company has significant non-utility operations or has excessive or insufficient equity in its capital structure. (In such cases, the approved version is called a hypothetical or imputed

Second, cost of debt. This causes little controversy as the interest rate on outstanding bonds is directly observable when a utility issues a bond.[47] Regulators simply allow the cost of debt to be passed through which is set by the bond market.[48] In effect, bond investors receive whatever the market demands, and there is no need for modeling.[49] Of course, the interest rates of utility bonds are driven by long-term prospects for a utility and other macroeconomic factor,[50] but the regulator doesn't need to estimate these rates.[51]

Third, and most controversially, is the cost of equity. Unlike the cost of debt, which is calculated based on past bond issuances by the public utility, the cost of equity is the "the ongoing, forward-looking cost of holding shareholders' money."[52] And unlike a bond yield, the cost of equity is not directly observable in the market, since it represents "expectation held by the "marketplace" about the return shareholders require in order to invest in the utility.[53]

The difference is driven by the different nature of the two claims (equity and debt). A bondholder gets paid first and has a contractual right to interest and principal payments. The only relevant question is whether the firm will generate enough cash to meet those payment obligations. The corporate bond market can easily price the risk of non-payment by charging a

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capital structure.) A utility will sometimes seek an allowed capital structure with more equity than its current level, in effect asking to increase its equity ratio.")

[47] McDermott, *supra* note __, at 14 ("In general, debt costs are measured by the (average) interest rate paid to the debt holders.").

[48] Bente Villadsen, *Introduction to Capital Structure & Liability Management* 14 (Aug. 21, 2018), https://www.brattle.com/wp-content/uploads/2021/05/14344_aga_and_eei_presentation.pdf ("The debt portion usually is allowed the embedded cost of debt.").

[49] McDermott, *supra* note __, at 10 ("Bondholders (debt) generally receive the market rate of return set through the market process by which bonds are floated.").

[50] *See generally* S&P Global Ratings, Key Credit Factors for the Regulated Utilities Industry (Nov. 19, 2013), https://www.maalot.co.il/Publications/MT20210527134758.PDF.

[51] The regulator has to usually mechanically apply the long-term debt interest rates of various types of debt to the particular period for which the rate case is filed for, *see* Quackenbush, *supra* note __, at 12 ("To match the costs with the time period that the rates and tariffs will be in effect, it is possible to project the long-term debt embedded cost rate that will be in effect at a future balance sheet date.").

[52] Werner & Jarvis, *supra* note _, at 11.

[53] McDermott, *supra* note _, at 14.

sufficiently high interest rate.[54] Equity investors, by contrast, get paid last.[55] Their payoff depends on the full distribution of the utility's future cash flows after all fixed obligations are paid. Consequently, estimating the equity holder's required return requires forecasts about future demand, costs, capital expenditures, depreciation, taxes, regulatory risk, and the riskiness of those cash flows.[56] A single market price cannot capture these factors, which is what makes estimating the cost of equity so difficult and controversial.[57]

Regulators use finance models to estimate the appropriate authorized return on equity shareholders should be expected to demand for bearing a given level of risk. The primary tools are discounted cash flow (DCF), capital asset pricing model (CAPM), and various risk-premium or "expected earnings" approaches.[58] Typically, regulators employ several tools in each rate proceeding to arrive at a zone of reasonableness.[59] In theory, if the models are implemented

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[54] Edwin J. Elton et al., *Explaining the Rate Spread on Corporate Bonds*, 56 J. FIN. 247 (2001), 247 ("… some corporate bonds will default and investors require a higher promised payment to compensate for the expected loss from defaults.").

[55] William Klein, *The Modern Business Organization: Bargaining Under Constraints*, 91 YALE L. J. 1521, 1528 ("Traditionally, the residual claim has been analyzed in both the economic and the legal literature as the right to whatever is left over after all prior claims to the profits or assets of a firm have been satisfied.").

[56] Stewart C. Myers, *The Application of Finance Theory to Public Utility Rate Cases*, 3 BELL J. ECON. & MGMT. SCI. 58, 70-71 (1972) (explaining that cost-of-equity estimates depend on "investors' expectations of asset growth and book profitability," and that the range is wide "partly because of uncertainty about the behavior of" regulators.).

[57] Paul L. Joskow, *The Determination of the Allowed Rate of Return in a Formal Regulatory Hearing*, 3 BELL J. ECON. & MGMT. SCI. 632, 637 (1972) ("Controversy arises over the assessment of the cost of equity capital; the differences over the assessment of this value constitute the major source of conflict between the firm's request and the intervenor's recommendation.").

[58] Quackenbush, *supra* note __, at 16-19 ("The Discounted Cash Flow (DCF) approach is based on the fundamental financial concept of the time value of money and provides a conceptually correct and straightforward approach for determining the cost of equity … The Capital Asset Pricing Model (CAPM) approach is based on the theory that the required rate of return for a given security is equal to the risk-free rate of return plus a risk-adjusted risk premium … The Risk Premium Method is based on the concept that the common equity of an entity is riskier than the debt of that entity, and thus deserves to earn a premium over the debt yield … The Expected Earnings Method shares some similarities to the Comparable Earnings method, but its primary distinguishing characteristic is that it is forward-looking.).

[59] *Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, 165 FERC ¶ 61,118, at 11 (Nov. 15, 2018) https://www.ferc.gov/sites/default/files/2020-05/E-6_71.pdf ("… rely on four financial models—the DCF model, the CAPM model, the expected earnings model, and the risk premium model—to produce four separate base ROE estimates that would then be averaged to produce a specific just and reasonable base ROE."); *Application of Appalachian Power Co., Case No. PUR-2024-00024*, Final Order, at 6 (Va. State Corp. Comm'n Nov. 20, 2024), https://www.scc.virginia.gov/docketsearch/DOCS/82my01%21.PDF ("In reaching this conclusion, the

properly, the resulting ROE is just the market cost of equity capital for a firm with the utility's risk profile. The WACC term in the revenue requirement formula is supposed to reproduce what competitive capital markets would require.[60] In practice, however, small changes in inputs can move the calculated ROE by hundreds of basis points.[61]

After the regulator has decided on these variables (O&M, depreciation, tax allowances, and Rate of Return times rate base), the revenue requirement is just the sum of these variables as per the formula above. The regulator then needs to translate that total annual dollar figure into specific tariffs charged to customers. That step has two main components: cost allocation and rate design. One way to understand this process is that the regulator is essentially "dividing the pie" by assigning what portion of the revenue requirement will be recovered from individual customers.[62]

First, regulators allocate the revenue requirement across customer classes—residential, commercial, industrial—based on embedded cost studies and policy judgments.[63] For instance, high-voltage industrial customers may impose lower per-unit distribution costs than residential users who are scattered geographically, and residential rates may therefore carry more of the distribution revenue requirement.[64] At the same time, commissions often allow or require cross-

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Commission relies primarily on the cost of equity estimates derived from the DCF, CAPM, and risk premium methods."); *Application of Cal.-Am. Water Co. (U210W) for Auth. to Establish Its Authorized Cost of Capital for the Period from Jan. 1, 2022 Through Dec. 31, 2024*, Application Nos. A.21-05-001 et al., Proposed Decision (Rev. 1), at 14 (Cal. Pub. Utils. Comm'n June 29, 2023), https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M512/K624/512624721.pdf ("The DCF model, risk premium analysis, and CAPM model cannot be relied upon exclusively to develop a particular ROE, but may be helpful in developing a range of reasonable values.").

[60] Quackenbush, *supra* note __, at 10. ("If the authorized ROR is set equal to the WACC, investors will provide capital with the expectation of receiving an adequate return").

[61] *See infra* Section II.B.

[62] Jim Lazar, *Smart Rate Design for a Smart Future, Dividing the Pie: Cost Allocation, the First Step in the Rate Design Process* (Regulatory Assistance Project, Aug. 31, 2015), https://www.raponline.org/wp-content/uploads/2023/09/appendix-a-smart-rate-design-2015-aug-31.pdf.

[63] Lazar, *supra* note __, at 1 ("Cost Allocation: Dividing the revenue requirement among customer classes.")

[64] Paul M. Sotkiewicz, *Cross-Subsidies That Minimize Electricity Consumption*, 4 (PURC Working Paper, 2003), https://bear.warrington.ufl.edu/centers/purc/docs/papers/0314_Sotkiewicz_Cross-Subsidies_that_Minimize.pdf ("[G]iven the large quantity of consumption it is cheaper to serve industrial customers on an average cost basis than residential customers.").

subsidies to promote affordability or economic development, so a Commission might charge industrial users higher rates than residential customers.[65]

Second, within each class, the commission chooses a rate structure based on how much electricity each customer uses.[66] This is a mix of fixed monthly customer charges, volumetric energy charges (dollars per unit of electricity), and sometimes demand charges (based on peak usage).[67] The commission then makes projections of sales for each customer class and then rates are calculated so that expected revenues equal the class revenue requirement.[68] If the realized demand matches the forecast, the utility recovers its costs and earns its allowed return.

The goal of this process is to mimic the long-run equilibrium of a competitive market where firms invest in capital until the expected present value of cash flows, discounted at the firm's cost of capital, just exceeds the investment cost.[69] This condition, return on equity equal to cost of equity capital, is also embodied in the law. Two seminal Supreme Court cases, *Bluefield Water Works* and *Hope Natural Gas*, require that allowed returns be "commensurate with returns on investments in other enterprises having corresponding risks" and "sufficient to assure confidence in the financial integrity of the enterprise" so it can "maintain its credit and attract capital."[70]

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[65] Chan & Klass, *supra* note _, at 8 ("[C]ross-subsidization is an important purpose of public utility regulation…Viewed in this way, the regulation of public utilities is intrinsically social policy. And deliberatively managing cross-subsidization as a matter of policy may be one of the most powerful tools to advance the public interest.").

[66] Lazar, *supra* note __, at 1 ("Rate Design: Calculating rates for each class of customers to produce the allocated revenue requirement based on assumed usage levels.")

[67] Arthur Abal et al., *Primer on Rate Design for Cost-Reflective Tariffs* at 54 (Nat'l Ass'n of Regul. Util. Comm'rs, Jan. 2021), https://pubs.naruc.org/pub.cfm?id=7BFEF211-155D-0A36-31AA-F629ECB940DC.

[68] *Id.* at 16.

[69] Gregory Sidak & Daniel Spulber, *Deregulatory Takings and Breach of the Regulatory Contract*, 71 N.Y.U. L. REV. 851, 919 ("The regulated firm would not make an investment unless the present discounted value of net revenues exceeds investment cost.").

[70] Bluefield Water Works & Improvement Co. v. Pub. Serv. Comm'n, 262 U.S. 679, 692–93 (1923) (holding that a utility is entitled to earn a return "equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties"); FPC v. Hope Nat. Gas Co., 320 U.S. 591, 603 (1944) (stating that the return should be "commensurate with returns on investments in other enterprises having corresponding risks" and "sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital"); Permian Basin Area Rate Cases, 390 U.S. 747, 766-67 (1968) (reaffirming Hope and holding that regulators have broad discretion in selecting ratemaking methodologies so long as the end result is not "unjust and unreasonable"); Duquesne Light Co. v. Barasch, 488 U.S. 299, 307 ("[T]he Constitution protects the utility from a charge that is so unjust as to be confiscatory.").

When ROE is above the cost of capital, it is no longer compensating the utility for the risk the firm undertakes but is a wealth transfer from ratepayers to shareholders.[71] Anything lower threatens underinvestment and service degradation.

This structure also explains the distinctive political economy of utility regulation. Regulators set the revenue requirement and the allowed ROE through an administrative process. Every basis point of ROE applies to billions of dollars of rate base, meaning utilities can drive higher shareholder returns by convincing the commission to authorize rate increases. This creates a powerful incentive to invest in regulatory lobbying, campaign contributions, and public-relations campaigns aimed at shaping commission decisions.[72]

Yet these activities do not create any economic value. A rate increase above the firm's actual cost of capital does not make electricity cheaper to produce, induce innovation, or create any other prosocial benefit. It simply shifts surplus from ratepayers to shareholders. Moreover, resources spent on regulatory rent-seeking via lawyers, consultants, lobbyists, and astroturf campaigns are costs that society bears for no productive gain.

C. The Legal Standard

Since public utilities are regulated monopolies, state commissions set the rates they may charge as a substitute for the competitive discipline that would otherwise constrain prices. This creates a constitutional problem. A utility that has sunk hundreds of millions of dollars into power plants or transmission lines cannot walk away if rates are too low. If the allowed return falls below the level needed to cover costs and compensate investors, the government has effectively confiscated private property. Since the late nineteenth century, the Supreme Court has held that the Due Process Clauses of the Fifth and Fourteenth Amendments impose a floor on regulated rates.[73]

Under current doctrine, a rate order violates due process only if its practical effect denies the utility a reasonable opportunity to earn a return adequate to maintain financial integrity and

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[71] Werner & Jarvis, *supra* note __, at 5.

[72] *See* II.B.

[73] *See generally* Richard Goldsmith, *Utility Rates and Takings*, 10 ENERGY L.J. 241, 244–47 (1989) (noting due-process origins of "confiscatory" terminology).

attract capital.[74] Equally important, the Court has refused to constitutionalize any particular ratemaking methodology. The inquiry turns on the "end results" of the rate order, not the regulator's valuation method.[75]

This constitutional doctrine originated in *Smyth v. Ames*, which concerned the constitutionality of a Nebraska statute that fixed maximum intrastate railroad rates.[76] The affected railroads argued that the prescribed rates were so low as to deprive them of property without due process.[77] The Court agreed, holding that when a company has devoted property to public service, it remains entitled to nonconfiscatory rates.[78] To give content to that constitutional rule, *Smyth* announced a "fair value" framework that required courts to ascertain the value of the utility property being used by the public, and then to assess whether the challenged rates permitted a fair return on that value.[79]

That judicial valuation regime quickly revealed two pathologies. First, "value" for ratemaking purposes was conceptually circular. The enterprise's value depended on expected earnings, yet the constitutionality of earnings depended on value. Second, the fair-value inquiry required generalist judges to resolve contested questions of engineering, accounting, and finance, producing sprawling records and unstable results. Those critiques fueled the Court's eventual turn away from *Smyth's* fair-value review.[80]

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[74] *Bluefield Water Works & Improvement Co. v. Pub. Serv. Comm'n of W. Va.*, 262 U.S. 679, 692–93 (1923); *Fed. Power Comm'n v. Hope Nat. Gas Co.*, 320 U.S. 591, 603 (1944).

[75] *Hope Nat. Gas*, 320 U.S. at 602 ("[I]t is the result reached not the method employed which is controlling."); *Duquesne Light Co. v. Barasch*, 488 U.S. 299, 310 (1989) (explaining that the Constitution does not require ratemaking methodology to be examined "piecemeal" and that review focuses on the "total effect of the rate order"); *Verizon Commc'ns Inc. v. FCC*, 535 U.S. 467, 500 (2002) (constitutional challenge typically turns on "rates, not methods").

[76] *Smyth v. Ames*, 169 U.S. 466, 468 (1898).

[77] *Id.* at 512.

[78] *Id.* at 526–27 ("[I]t is equally true that the corporation performing such public services, and the people financially interested in its business and affairs, have rights that may not be invaded by legislative enactment in disregard of the fundamental guarantees for the protection of property.").

[79] *Id.* at 546–47 ("[I]n order to ascertain that value, the original cost of construction, the amount expended in permanent improvements, the amount and market value of its bonds and stock, the present as compared with the original cost of construction, the probable earning capacity of the property under particular rates prescribed by statute, and the sum required to meet operating expenses, are all matters for consideration, and are to be given such weight as may be just and right in each case.").

[80] *Hope Nat. Gas*, 320 U.S. at 601 (explaining that "fair value" depends on earnings and thus cannot itself furnish an independent constitutional standard); Joshua C. Macey & Brian Richardson, *The Public Law of Public Utilities*,

The Court first articulated the constitutional floor for utility returns in *Bluefield Water Works & Improvement Co. v. Public Service Commission*.[81] Reviewing a West Virginia rate order, the Court held that regulation does not guarantee profits but must permit a "reasonable return" comparable to "other business undertakings which are attended by corresponding risks and uncertainties" and sufficient to "maintain its credit and enable it to raise the money necessary for the proper discharge of its public duties."[82] These twin benchmarks of capital attraction and financial integrity remain the constitutional floor today. They are fundamentally external: they depend on market conditions, not the internal condition of a particular utility.

After *Bluefield*, the Court kept reframing the inquiry into whether rates were ultimately confiscatory under this test, while insisting that regulators develop a record permitting judicial review. The Court stressed that "legislative discretion" extends to the "entire legislative process," including the choice of method, and that courts are not "boards of revision" for rate orders.[83] The reviewing court's task was to examine the order "viewed in its entirety," ensuring that the utility received a fair hearing and that the result was supported by the record.[84]

Hope marked the end of judicial nitpicking with administrative ratemaking, establishing that utility regulators can use any methodology they want so long as the rate is high enough to allow the utility to finance its operations. *Hope* involved an attempt by the Federal Power Commission to set rates for interstate natural gas sales based on original cost. The Commission had refused to give independent weight to reproduction-cost evidence.[85] The Court rejected the argument that due process requires any particular valuation theory, holding instead that the Constitution is satisfied so long as the resulting rate order is not unjust and unreasonable in its

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42 YALE J. ON REG. 179, 218–19 (2025) (describing the administrability problems of judicial fair-value review and the Court's turn toward "end result" deference).

[81] 262 U.S. 679 (1923).

[82] *Bluefield Water Works*, 262 U.S. at 692 ("commensurate with returns on investments in other enterprises having corresponding risks"); *id.* at 692–93 (return should be sufficient to "maintain its credit and enable it to raise the money necessary for the proper discharge of its public duties"); *id.* at 692 (rejecting any right to "profits such as are realized . . . in highly profitable enterprises").

[83] *L.A. Gas & Elec. Corp. v. R.R. Comm'n of Cal.*, 289 U.S. 287, 304–05 (1933) (explaining that "legislative discretion" extends to the "method" as well as the result); *R.R. Comm'n v. Pac. Gas & Elec. Co.*, 302 U.S. 388, 393–94 (1938) (federal courts are not "boards of revision," but due process requires a "fair and open hearing" and findings supported by evidence).

[84] *W. Ohio Gas Co. v. Pub. Utils. Comm'n*, 294 U.S. 63, 69–70 (1935) (review focuses on the "totality of the consequences" and the order "viewed in its entirety").

[85] *Hope Nat. Gas*, 320 U.S. at 592–96 (describing the Commission's findings and rate order).

consequences.[86] This gave rise to the "end result" test: "It is the result reached not the method employed which is controlling," and "it is not theory but the impact of the rate order which counts."[87]

Although *Hope* overturned *Smyth*'s "fair value" test, it did not eliminate utilities' legal right to be compensates for providing electricity service. But it established a deferential and flexible standard. After *Hope*, state commissions must make sure that the utility receive "enough revenue not only for operating expenses but also for the capital costs of the business," including debt service and dividends.[88] The return on equity must be commensurate with comparable-risk investments and sufficient to assure confidence in the firm's financial integrity.[8990]

Post-*Hope* decisions have applied this framework broadly. Under the statutory "just and reasonable" standard, regulators operate within a broad "zone of reasonableness."[91] A rate that falls within that zone ordinarily cannot be attacked as confiscatory.[92] In *Duquesne Light Co. v. Barasch*, the Court rejected a takings claim arising from the disallowance of costs for a cancelled nuclear plant, stressing again that no single formula is constitutionally required and that the "impact" of the order is decisive.[93] *Verizon Communications Inc. v. FCC* likewise emphasized that constitutional objections ordinarily arise from the rates set, not from the choice among permissible methodologies.[94] And *Market Street Railway Co. v. Railroad Commission* exposed the limits of the investor-interest floor: when a firm's financial condition is already "hopelessly undermined" and

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[86] *Id.* at 601–02 (rejecting the claim that the Constitution or the Natural Gas Act required "fair value" ratemaking).
[87] *Id.* at 602.
[88] *Id.* at 603.
[89] *Id.* at 603 (investor interest requires "enough revenue not only for operating expenses but also for the capital costs of the business," and an equity return "commensurate with returns . . . having corresponding risks" and sufficient to "maintain its credit and to attract capital"); *id.* (regulation does not insure that the business shall produce net revenues) (quoting *Fed. Power Comm'n v. Nat. Gas Pipeline Co.*, 315 U.S. 575, 590 (1942)); [89] *Id.* at 607 ("The requirements of the Constitution in respect of rates are not more exacting than the standards of the Act."); *Wis. v. Fed. Power Comm'n*, 373 U.S. 294, 309 (1963) (reaffirming that "no single method" is "sanctified" and quoting *Hope's* "end result" formulation).

[91] *Permian Basin Area Rate Cases*, 390 U.S. 747, 769–70 (1968) (describing the statutory "zone of reasonableness").
[92] *Id.* at 770 (rates selected within that zone "cannot properly be attacked as confiscatory").
[93] *Duquesne*, 488 U.S. at 301–04, 310 (rejecting a takings challenge arising from the disallowance of costs for a cancelled nuclear plant and reiterating that the "impact" of the rate order is controlling).
[94] *Verizon*, 535 U.S. at 500–02 (reaffirming *Hope's* end-result approach in reviewing FCC pricing rules); *see also FCC v. Fla. Power Corp.*, 480 U.S. 245, 252 (1987) (explaining that conventional rate regulation does not ordinarily effect a taking).

it cannot attract capital at any rate, the Constitution does not require regulators to restore the enterprise's economic value.[95]

This line of cases has two practical implications. First, to succeed on a constitutional challenge, the utility bears a heavy burden and must "show convincingly" that the total effect of the challenged order is confiscatory.[96] Second, doctrinal debates that dominate ratemaking—such as the allocation of investment risk between investors and ratepayers through "used and useful," "prudent investment," or analogous doctrines—remain largely questions of statutory interpretation and commission policy. The only constitutional question is whether the overall rate is sufficient to cover the utility's financing costs given the risks it faces.[97]

The doctrine has several implications for CDE. Since *Hope* explicitly rejected a requirement for methodological constitutionalism, a commission is not barred from using market-based evidence—including an auction-derived equity return—as an input. The key constraint is that the regulator must show that the auction result, in combination with the rest of the revenue requirement, yields an end result that meets the *Bluefield* benchmarks: commensurate returns for comparable risk, preservation of credit, and the ability to attract capital over the relevant rate-effective period. The commission must also provide reasoned explanations and evidentiary support that due process and modern administrative law demand.[98]

II. Why The Current System is Flawed

The constitutional standard requires that utilities earn their cost of capital. In practice, the system consistently allows utilities to earn more. This Part identifies four reasons. Section A shows that the financial models used to estimate the cost of equity (DCF, CAPM, risk premium, expected

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[95] *Mkt. St. Ry. Co. v. R.R. Comm'n*, 324 U.S. 548, 566–67 (1945).

[96] *Hope Nat. Gas*, 320 U.S. at 602 (utility must "show convincingly" that the order is confiscatory); *W. Ohio Gas*, 294 U.S. at 69–70.

[97] *See* Goldsmith, *supra* note 1, at 252–55 (describing competing "prudent investment" and "used and useful" approaches as risk-allocation disputes largely left to commissions after *Hope*); James J. Hoecker, *"Used and Useful": Autopsy of a Ratemaking Policy*, 8 ENERGY L.J. 303, 319–27 (1987) (tracing post-*Hope* disputes and judicial deference in the "end result" era).

[98] *See Hope Nat. Gas*, 320 U.S. at 602–03; *Bluefield Water Works*, 262 U.S. at 692–93; *Pac. Gas & Elec.*, 302 U.S. at 393–94 (due process requires a "fair and open hearing" and findings supported by evidence); Macey & Richardson, *supra* note 8, at 223–24 (situating *Hope's* methodological deference in the rise of the administrative state); 16 Tex. Admin. Code § 25.231(c)(1)(C) ("The rate of return must be high enough to attract necessary capital but need not go beyond that. In each case, the commission will consider the electric utility's cost of capital . . . .")..

earnings) are subjective at both the model-selection and input-selection stages. Section B explains how structural features of rate proceedings (information asymmetry, resource gaps, and regulatory capture) tilt outcomes toward utilities. Section C presents empirical evidence that American utilities have earned returns well above their cost of equity. Section D traces the downstream consequences of persistent over-earning, including direct wealth transfers from ratepayers, capital bias, delayed clean-energy investment, and regressive distributional effects.f Evidence of Persistent Over-Earning

A. The Subjectivity of Valuation Methods

As explained in Part I, the Supreme Court has explained that utilities must be given a reasonable opportunity to earn their cost of capital.[99] But what is that number? A utility's cost of equity is not directly observable. Unlike the cost of debt, which appears in loan agreements, the cost of equity has to be estimated using financial models. To convert the constitutional standard into an authorized return on equity (ROE), regulators must first choose a model and then choose the inputs that drive it. The available options are discounted cash flow (DCF) analysis, the capital asset pricing model (CAPM), risk-premium methods, and comparable- or expected-earnings screens.[100] Each embeds contestable assumptions about growth, risk, and comparability. And even small changes in inputs can move the implied ROE by a full percentage point or more. Because these problems are widely understood, regulators, utilities, and their experts typically run several models in parallel rather than picking one winner.

The result is that utility ratemaking, despite aiming to be objective and predictable, involves substantial discretion at two levels. First, regulators must choose which model or combination of models to credit. Second, they must choose the inputs that drive each model's output. Both choices are contestable, unstable across time and jurisdiction, and susceptible to backward induction from a preferred result. This section discusses these two issues.

(i) The Subjectivity of Model Choice

Model selection is discretionary. Federal and state regulators have conceded this point. Commissioner Richard Glick, criticizing the Federal Energy Regulatory Commission's (FERC)

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[99] *See infra* I.B.

[100] *See* e.g., John D. Quackenbush, *Cost of Capital and Capital Markets: A Primer for Utility Regulators* (2019), https://pubs.naruc.org/pub.cfm?id=CAD801A0-155D-0A36-316A-B9E8C935EE4D

shifting approach to ROE methodology, urged the Commission to "stop the endless fiddling with its ROE methodology."[101] Glick observed that over successive proceedings, FERC had "added new models, removed some of those models, tweaked some . . . introduced new inputs, modified existing inputs . . . [and] even altered how the Commission places the ROE within the zone of reasonableness."[102] He concluded that "[w]ith each new twist, it becomes harder to buy that the Commission is genuinely reassessing the mechanics of each model rather than disagreeing with the ROE numbers those models produce."[103] Glick's point is that if the Commission selects models based on whether it likes their output, model choice essentially becomes post hoc rationalization.

State commissions face the same problem and their different responses to the problem how the arbitrariness of model selection. New York's Public Service Commission (PSC), after a generic finance proceeding in the 1990s produced an unsatisfactory methodology, settled on a blended convention of two-thirds DCF and one-third CAPM.[104] Georgia, by contrast, has never codified a preset method.[105] Pennsylvania relies primarily on DCF, with CAPM serving as a check.[106] This means that for the exact same utility, these three commissions would produce very different return on equity outcomes. This divergence reflects genuine disagreement about which model or combination of models best approximates the cost of equity capital. But the stronger takeaway is

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[101] Richard Glick, Concurrence in Part and Dissent in Part Regarding Allegheny Defense Project Final Rule, Fed. Energy Regul. Comm'n (June 9, 2020), https://ferc.gov/news-events/news/commissioner-richard-glick-concurrence-part-and-dissent-part-regarding-allegheny.

[102] *Id.*

[103] *Id*.

[104] N.Y. Pub. Serv. Comm'n, Cases 02-E-0198 & 02-G-0199, *Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Rochester Gas and Electric Corp. for Electric Service & Gas Service, Recommended Decision*, at 78, 86 (Dec. 17, 2002), https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7BD301CACE-8BD0-4422-957E-8790AE8521B2%7D ("Applying a 2/3 weighting to the DCF result and a 1/3 weighting to the CAPM yields the following ROE, which I recommend as a fair return on RG&E's equity…")

[105] Ga. Pub. Serv. Comm'n, *Electric Utility Rate-Making by the Georgia Public Service Commission* 1, https://www.psc.state.ga.us/electric/regulation/Electric_Utility_Rate-Making.pdf (stating Georgia's legislature "has not provided a fixed principle or yardstick" for "just and reasonable" rates)

[106] Pa. Pub. Util. Comm'n, Docket Nos. R-2021-3027385 & R-2021-3027386, *Opinion and Order* 155 (May 12, 2022), https://www.puc.pa.gov/pcdocs/1744354.pdf ("Historically, we have relied primarily upon the DCF methodology in arriving at ROE determinations and have utilized the results of the CAPM as a check upon the reasonableness of the DCF derived equity return.")

that since regulators keep fiddling with which models to use shows that no single model can reliably estimate ROEs.

The persistence of this disagreement has driven several states to abandon model-based estimation altogether by adopting mechanism-based approaches. These devices concede that no single estimator can reliably pin down the cost of equity at any given moment and aim instead to mitigate the uncertainty in estimating ROE. California's Public Utility Commission (CPUC) adopted a Cost of Capital Mechanism that auto-adjusts ROE between full rate cases when utility-bond benchmarks move outside a predetermined deadband.[107] Florida embedded an authorized-ROE range, with a midpoint and a Treasury-based trigger permitting one mid-term reset of both the midpoint and the range. The explicit goal was to avoid relitigating CAPM and DCF every time bond yields shift.[108] Illinois went further still during its formula-rate era, hard-wiring an index directly into statute. The ROE was set mechanically at the average 30-year U.S. Treasury yield plus 580 basis points (later restated as 590 basis points in reconciliation language).[109]

These mechanism-based approaches are a rational response to model uncertainty, but they introduce new problems. By tying authorized ROE to a bond index or deadband, they reduce the discretion inherent in model selection, but they also sacrifice responsiveness to changes in equity-market risk that bond yields do not capture. A Treasury-indexed ROE moves with interest rates but not with shifts in equity risk premia, beta, or sector-specific volatility. Illinois learned this during the low-interest-rate environment of the 2010s, when the Treasury-plus-580 formula produced ROEs that tracked debt markets rather than the equity cost of capital. The mechanism replaced one kind of error (discretionary model choice) with another (systematic mismatch between the index and the quantity it was meant to approximate).

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[107] Maryam Ghadessi, *An Introduction to Utility Cost of Capital* 10 (Cal. Pub. Utils. Comm'n, Pol'y & Plan. Div. Apr. 18, 2017), https://www.canr.msu.edu/ipu/uploads/migration/2020/09/CPUC-Intro-Cost-of-Capital-2017.pdf (describing how California adopted this mechanism to deal with decreasing yields in 2008 but also showing that the mechanism didn't prove effective because it was backward looking and utilities were able to obtain emergency exceptions).

[108] Fla. Pub. Serv. Comm'n, Order No. PSC-2022-0358-FOF-EI, Docket No. 20210015-EI, at 3 (Oct. 21, 2022), https://www.psc.state.fl.us/library/Orders/2022/09813-2022.pdf

[109] 220 Ill. Comp. Stat. 5/16-108.5(c)(3) (2024).

(ii) Subjectivity in Inputs Selection

Even after a commission selects a valuation model, the ROE produced by that model is heavily influenced by discretionary inputs. Each of the standard models contains parameters that are themselves estimated, and the range of defensible estimates for those parameters is wide enough to drive large swings in the calculated ROE. A brief survey of the classic models shows this problem.

The discounted cash flow (DCF) model estimates the return implied by a utility's stock price and expected dividend growth.[110] In its simplest form, the required return equals the current dividend yield plus the long-run expected growth rate of dividends. The model fits utilities reasonably well because dividends are central to utility valuation. But the growth-rate input is hard to pin down. Analysts can rely on historical dividend growth, projected earnings-per-share growth from equity analysts, sustainable-growth calculations, or some combination. Each choice produces a different ROE, sometimes by a full percentage point or more. An analyst who uses five-year projected EPS growth rates will often get a higher number than one who uses ten-year historical dividend growth. Short-term swings in the stock price, which enter through the dividend yield, can further distort results.

The capital asset pricing model (CAPM) takes a different approach: linking the required return to systematic market risk. ROE equals the risk-free rate (typically a Treasury yield) plus the product of beta (a measure of the stock's co-movement with the broader market) and the equity market risk premium (the additional return investors demand for holding equities over risk-free assets).[111] The intuition is that investors demand compensation proportional to a utility's exposure to market-wide fluctuations. But each component is contestable. The risk-free rate depends on which Treasury maturity and time window the analyst selects. Beta estimates vary by estimation period, data frequency, and whether the analyst adjusts toward one (as many practitioners do). And the equity market risk premium, the most consequential input, can be estimated historically, from forward-looking models, or from survey data, with results spanning several hundred basis points.[112]

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[110]Quackenbush, *supra* note __, at 16.

[111] Quackenbush, *supra* note __, at 17.

[112]*See* Aswath Damodaran, *Equity Risk Premiums (ERP): Determinants, Estimation, and Implications—The 2024 Edition* (Mar. 5, 2024), https://ssrn.com/abstract=4751941.

The risk-premium model adds a historical spread between bond yields and equity returns to a current interest-rate benchmark.[113] The logic is that equity must earn more than debt because shareholders face greater risk than creditors. But this approach often relies on past regulatory awards as the equity-return input, and can therefore lock in earlier errors. If a prior commission set the ROE too high, the historical premium will be inflated, and future awards built on that premium will perpetuate the overestimate.

Finally, the comparable- or expected-earnings approach looks at the accounting returns earned by non-regulated firms with similar risk profiles.[114] This was once a common approach, particularly in the era before DCF analysis became standard regulatory practice. It is now used mostly as a cross-check. The fundamental difficulty is that accounting returns on equity are not the same quantity as the market-required return on equity. Book values reflect historical costs, not current market conditions, so a firm earning a twelve percent return on book equity is not necessarily earning what investors require.

The practical consequence of this input flexibility is that the same model, applied to the same utility at the same moment, can produce a wide range of ROE estimates depending on the analyst's choices. This creates an obvious strategic dynamic. An expert witness who begins with a target ROE can select inputs that reverse-engineer the desired result. The commission, facing dueling testimonies built on the same model with different inputs, must then exercise judgment about which assumptions are more plausible. Some states have tried to police this behavior. Virginia's State Corporation Commission, for example, has repeatedly rejected projected-EPS-driven CAPM market-risk premia and other input choices that it found upwardly biased.[115] But the need for such policing proves the point. If model inputs were objective, there would be nothing to police.

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[113] Quackenbush, *supra* note __, at 18.

[114] Quackenbush, *supra* note __, at 19-20.

[115] Some states have policed input choices aggressively, criticizing projected-EPS-driven CAPM market-risk premia and other analytical tweaks that allegedly inflate estimates. *See* Appalachian Power Co., Case No. PUR-2024-00024, Final Order at 5–7 (Va. State Corp. Comm'n Nov. 20, 2024), https://www.scc.virginia.gov/docketsearch/DOCS/82my01%21.PDF (criticizing EPS-heavy DCF growth and EPS-driven CAPM market-risk-premium inputs as upwardly biased); Va. State Corp. Comm'n Staff, Post-Hearing Brief, Case No. PUR-2019-00050, at 11–14 (filed Oct. 18, 2019) https://www.scc.virginia.gov/docketsearch/DOCS/4jf501%21.PDF (arguing Commission has repeatedly rejected overstated CAPM market-risk-premium inputs and related upward-bias "tweaks").

B. Systemic Bias Towards Utilities

The problem of subjectivity in calculating ROE is made worse by the fact that the process itself is skewed in favor of public utilities at the expense of ratepayers. This section describes three features of the current regime that are especially important: (1) utilities possess superior information about their own costs and risks, (2) the adversarial process, through which rates are currently set, is skewed by a resource gap that favors utilities, particularly because rate-payers face free-rider and collective action problems that impede them from galvanizing into effective coalitions to mount effective oppositions to utilities, and (3) public utility commissions are captured by the utilities they are supposed to regulate. These factors, combined with the discretion that cost-of-equity models give regulators, produce a predictable bias toward systematically higher return on equity awards.[116]

(i) Information Asymmetry

Disputes between utilities and commissions over the allowed return on equity are largely a result of unequal information. The utility has the best information about how risky its operations are, how uncertain its construction projects and permits are, and what terms it actually got and can get from suppliers, lenders and investors. A commission cannot observe any of this information directly and has to either piece it together from filings, testimony, and whatever it can get through discovery or else simply rely on the utility it supposedly is regulating. The formal record available to even the most well-intentioned public utilities commission is incomplete and shaped by the utility's choices about what to disclose and how to frame it. This phenomenon is known as "information asymmetry," and a large theoretical literature shows how it creates problems for public utility regulation.[117]

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[116] *See infra* II.D.

[117] *See, e.g.*, David P. Baron & Roger B. Myerson, *Regulating a Monopolist with Unknown Costs*, 50 ECONOMETRICA 911 (1982) (deriving the optimal regulatory mechanism for a monopolist whose costs are private information and showing that the regulator's policy must grant informational rents to induce truthful cost reporting); Jean-Jacques Laffont & Jean Tirole, A THEORY OF INCENTIVES IN PROCUREMENT AND REGULATION (1993) (developing a principal-agent framework for regulation under adverse selection and moral hazard, with particular focus on natural monopolies such as utility companies); Adam R. Fremeth & Guy L. F. Holburn, *Information Asymmetries and Regulatory Decision Costs: An Analysis of U.S. Electric Utility Rate Changes 1980–2000*, 28 J.L. ECON. & ORG. 127, 127 (2012) ("[I]nformation asymmetries between regulators and firms increase the administrative decision costs")

Regulators must set both the allowed revenue requirement and the allowed return without observing the utility's true costs and risks, and without a reliable way to monitor the day-to-day decisions of its management, of which are generally known to the utility.[118] This information asymmetry creates two distinct problems.[119] First, adverse selection. The utility has better information about whether its claimed costs and risks are real while the commission cannot reliably tell whether a request for a higher return reflects genuinely high costs or strategic presentation that strategically inflates costs.

The second problem is moral hazard. After a commission sets rates, managers make many choices that regulators and others outside of the firm cannot observe. In essence, the regulator cannot directly verify whether managers are cutting costs, running projects efficiently, or mitigating risks in order to keep costs down. The current practice is to address this problem through adversarial litigation before a commission, But even in that context much is unobservable by the regulator, and what information is available is hard to verify.[120] While there is little that can be done to mitigate the moral hazard problem, resources can, to a limited extent, reduce information asymmetries.

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[118] Jean-Jacques Laffont & Jean Tirole, A THEORY OF INCENTIVES IN PROCUREMENT AND REGULATION (demonstrating that second-best regulatory processes lead to systematic transfer to the regulated entity when firms hold private information).

[119] Paul L. 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) [hereinafter Joskow, *Incentive Regulation*] (reviewing incentive regulation theory and its application to electricity; noting that "[t]his creates potential moral hazard (for example, too little managerial effort resulting in excessive costs) and adverse selection (for example, prices that are too high relative to production costs) problems that effective regulatory mechanism design must address"); Mark Armstrong & David E.M. Sappington, *Recent Developments in the Theory of Regulation*, in 3 HANDBOOK OF INDUSTRIAL ORGANIZATION 1557 (Mark Armstrong & Robert Porter eds., 2007) (analyzing optimal regulatory design under asymmetric information, including adverse selection and moral hazard); Jean-Jacques Laffont & Jean Tirole, A THEORY OF INCENTIVES IN PROCUREMENT AND REGULATION 54–55 (MIT Press 1993) ("asymmetric information about the technology pushes incentive schemes away from fixed-price contracts and toward cost-plus contracts").

[120] A real world example of this problem can be seen with data center build out, *see* Eliza Martin & Ari Peskoe, *Extracting Profits from the Public: How Utility Ratepayers Are Paying for Big Tech's Power*, H.L.S. Environmental & Energy Law Program 4 (Mar. 2025), https://eelp.law.harvard.edu/wp-content/uploads/2025/03/Harvard-ELI-Extracting-Profits-from-the-Public.pdf. (describing the difficulty in verifying whether "Big Tech," not other ratepayers, will indeed pay for data center energy costs and that bills for consumers won't increase as a result: "Attributing utility costs to a specific consumer is an imprecise exercise premised on debatable claims about utility accounting records. The subjectivity and complexity of ratemaking conceal utility attempts to funnel revenue to their competitive lines of business by overcharging captive ratepayers.")

Problems attributable to asymmetric information show up in contentious fights over the appropriate return on equity. Unlike the cost of debt, which shows up in loan agreements, the cost of equity is never directly observed and must be estimated. Utilities request a particular return on equity roughly every three years in a "rate case" where they justify their requested ROE through financial models and groups of comparable companies, and expert witnesses that have wide latitude to choose which models, inputs, and peers to use. Because the firm controls much of the evidence, it can systematically steer the commission's beliefs through selective disclosure and favorable framing. Formal economic models of regulation show that the resulting overpayment (called an "informational rent") is a predictable cost of regulating a firm that knows more than the regulator does.[121]

Rate cases, which are formal hearings at which regulators determine utility rates, are a costly mechanism for producing information. The evidence that emerges is often incomplete and outcomes often turn on who bears the burden of proof, what procedural limits constrain the parties, and how much data the utility is forced to disclose by regulators. This raises the commission's cost of making a decision and reduces the accuracy of the information it can act on.[122]

There is empirical evidence that supports the point that information asymmetries benefit utilities. Fremeth and Holburn analyzed all U.S. electric utility rate proceedings from 1980 to 2000 and found that information asymmetries between regulators and firms increase the cost of rate proceedings in ways that predictably favor incumbents.[123] The study shows that gaps in access to

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[121] *See* Baron & Myerson, *supra* note __, at 912 ("The regulator's objective is to maximize a linear social welfare function of the consumer's surplus and the firm's profit" subject to "the constraints that the firm has nonnegative profit and has no incentive to misrepresent its costs"); Laffont & Tirole, *supra* note __ , at 53–65 (deriving the optimal regulatory contract for a monopolist with private cost information and showing that informational rents are a necessary cost of eliciting truthful cost revelation); Joskow, *Incentive Regulation*, *supra* note __, at 295–96 (explaining that the firm's information advantage creates a strategic incentive to convince the regulator it is a higher-cost firm, generating excess surplus that constitutes a predictable informational rent).

[122] Paul L. Joskow, *The Determination of the Allowed Rate of Return in a Formal Regulatory Hearing*, 3 BELL J. ECON. & MGMT. SCI. 632 (1972) (finding that the allowed return depends on the size and relative reasonableness of the firm's request, the presence of competing cost-of-capital testimony, and the presence of intervenors); Paul L. Joskow, *Inflation and Environmental Concern: Structural Change in the Process of Public Utility Price Regulation*, 17 J.L. & ECON. 291 (1974)

[123] Adam R. Fremeth & Guy L.F. Holburn, *Information Asymmetries and Regulatory Decision Costs: An Analysis of U.S. Electric Utility Rate Changes 1980–2000*, 28 J.L. ECON. & ORG. 127 (2012).

information prevent regulators from departing from existing rates.[124] In order to justify a rate decrease, commissions need affirmative evidentiary support sufficient to satisfy applicable legal standards and when the commission lacks that information, the administrative cost of building a case becomes so high that regulators are effectively forced to leave the status quo in place.[125] This happens not because the existing rate is correct, but because correction is too costly, so the utility eventually prevails through regulatory inertia.[126]

Using proxies for commission knowledge and expertise—commissioner tenure, agency staff size, and access to comparative data from peer agencies, Fremeth and Holburn show that reductions in information asymmetry benefit ratepayers.[127] The empirical results demonstrate that regulators with longer tenure, larger staff, or better comparative information were substantially more likely to authorize rate decreases and less likely to grant rate increases. The paper concludes that "when regulators know more, the evidentiary hurdle for reform is lowered, leading to outcomes that favor consumers rather than the industry."[128]

Commissions recognize these problems and respond by turning to second-best substitutes such as audits and verification. Commission-sponsored or independent auditors test utility filings and try to uncover information the firm did not volunteer. Ongoing disputes about the scope and cost of discovery available to intervenors and commission staff reflect this dynamic as well.[129] Commissions also respond by investing in monitoring and by experimenting with alternatives to traditional rate-of-return regulation, such as benchmarking and incentive-based rate designs that reduce dependence on information the firm controls.[130] They do this precisely because setting a

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[124] *Id.* at 3 (arguing that "information asymmetries, by raising the costs of regulator-initiated policy adjustments, tend to insulate policies against regulator-induced change." This creates a "bias toward the status quo" or an "ossification" of rulemaking.)

[125] *Id.* at 6 (arguing that regulators are legally required to base decisions on "findings of fact" and "obtaining supportive evidence... can be a costly exercise," and these costs are increasing in the level of information asymmetries.)

[126] *Id.* at 7 (less informed agencies are less likely to initiate changes because of high evidentiary costs and the risk of being overturned by courts on procedural grounds.)

[127] *Id.* at 23.

[128] *Id.*

[129] Fremeth & Holburn, *supra* note __, at 130–32; *see also* Nat'l Ass'n of Regulatory Util. Comm'rs, THE REGULATORY EXAMINATION: A HANDBOOK FOR COMMISSIONS AND ANALYSTS (2002).

[130] *See e.g.*, David E.M. Sappington, Johannes P. Pfeifenberger, Philip Hanser & Gregory N. Basheda, *The State of Performance-Based Regulation in the U.S. Electric Utility Industry*, 14 ELECTRICITY J. 71 (2001); Mark Newton Lowry & Lawrence Kaufmann, Performance-Based Regulation of Utilities, 23 ENERGY L.J. 399 (2002)

fair return on equity is unreliable when the firm holds most of the relevant information and the cost of extracting it is high.[131]

Information asymmetry predictably raises the cost of equity awarded to regulated firms. The utility holds private information about its true costs and risks. The commission must reconstruct that information through costly adversarial proceedings. Commissions have responded with audits, benchmarking, and incentive-based alternatives, but these are second-best workarounds. They do not eliminate the underlying advantage that the firm's informational position confers. As long as the cost of equity must be estimated through a process in which the firm controls most of the relevant evidence, the result will tend to favor the firm.

(ii) Battle of Experts and the Resource Gap

Rate cases eventually become contests between competing expert witnesses since the cost of equity is not directly observable. The utility's expert and the various intervenors' experts use similar models but reach vastly different conclusions by selecting different inputs and starting assumptions. At the end of this contentious process, the commission is simply left to pick a point within the range of proposed ROEs.

This asymmetry is a textbook collective action problem.[132] The regulated firm and its investors have large, repeat-player stakes in a higher allowed return, while the resulting revenue requirement is spread across many customers, each with modest per-capita exposure and weak incentives to intervene. A fifty-basis-point difference in authorized ROE on a $10 billion rate base translates to roughly $35 million a year in additional revenue, making it rational for utilities to

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[131] *See* Paul L. Joskow, *Regulation of Natural Monopoly*, in 3 HANDBOOK OF LAW AND ECONOMICS 1227 (A. Mitchell Polinsky & Steven Shavell eds., 2007) [hereinafter Joskow, *Regulation of Natural Monopoly*]; Joskow, *Incentive Regulation*, *supra* note 1, at 293–95 (observing that "in the last fifteen or twenty years there have been major advances in imperfect and asymmetric information theory" that have made it possible to design regulatory mechanisms addressing the informational problems that regulators "have been trying to respond to for decades"); World Bank, UTILITY REGULATORS: THE INDEPENDENCE DEBATE (1999).

[132] *See generally* Mancur Olson, THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS (showing that interest groups that have a narrow focus are more politically influential than diffuse groups); Cass R. Sunstein, *Interest Groups in American Public Law*, 38 STAN. L. REV. 29 (1985) (linking collective-action asymmetries to risks of regulatory capture); George J. Stigler, *The Theory of Economic Regulation*, 2 BELL J. ECON. & Mgmt. Sci. 3, 3–4 (1971) (arguing that regulation is commonly "acquired by the industry"); Anne O. Krueger, *The Political Economy of the Rent-Seeking Society*, 64 AM. ECON. REV. 291, 291–93 (1974) (describing "rent seeking" as costly private investment aimed at securing and defending government-created transfers).

invest heavily in expert testimony, regulatory counsel, and public-relations campaigns.[133] Consumer advocates and environmental groups, meanwhile, face a classic collective action problem in funding equally sophisticated opposition.[134] Their budgets for rate-case intervention are typically a fraction of what the utility itself spends, which is exactly what Olson's model predicts. Even setting aside resource imbalances, utilities have a large advantage in such rate hearings, since they can afford to retain repeat expert witnesses who have long-term credibility with commission staff and can control the initial framing, since the utility files first and its ROE request anchors the entire proceeding.[135]

Commissions respond to this imbalance by splitting the difference between the utility's proposal and the intervenors' counterproposals. Because the utility's opening bid is likely above the true cost of equity, splitting the difference locks in a bias. For instance, in a recent rate case, Michigan's DTE Gas requested 10.25% while the Commission Staff recommended 9.80%, the Attorney General proposed 9.85%, the Association of Businesses Advocating Tariff Equity (ABATE) urged no more than 9.50%, and the Citizens Utility Board of Michigan suggested 9.46%. The Commission ultimately authorized 9.80%—within the range, but closer to the utility's request than to the consumer groups.[136] The spread across these positions was 111 basis points. The commission's decision was ultimately a judgment call within a litigated range, and that range was set by the parties' competing model inputs, not by any external market signal.

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[133] *See* Jean-Jacques Laffont & Jean Tirole, *The Politics of Government Decision-Making: A Theory of Regulatory Capture*, 106 Q.J. ECON. 1089, 1089–95 (1991); Aneil Kovvali & Joshua C. Macey, *The Corporate Governance of Public Utilities*, 40 YALE J. REG. 569, 585–86 (2023); Mark Van Orden, *Power Play: Political Contributions and Regulatory Capture in the Electric Utility Industry*, (Center for Growth & Opportunity Working Paper) (Oct. 31, 2023) ("States where the legislature is involved in the commissioner selection process experience significantly higher political donations and authorize significantly higher ROEs").

[134] *See generally* Mancur Olson, THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS 2 (1965) (explaining why diffuse beneficiaries underinvest in collective effort absent selective incentives, supporting the intervenor funding asymmetry); Gary S. Becker, *A Theory of Competition Among Pressure Groups for Political Influence*, 98 Q.J. ECON. 371, 372–76 (1983) (modeling influence as a product of group investment and competitive pressure, supporting the prediction that concentrated utility stakes dominate diffuse ratepayer stakes).

[135] Werner & Jarvis, *supra note* __, 39 ("In most rate case proceedings, utilities submit their planned expenditures and then regulators decide whether they are prudent.").

[136] In re DTE Gas Co., No. U-21291, Order at 109–10 (Mich. Pub. Serv. Comm'n Nov. 7, 2024).

The Fremeth and Holburn study further identified a structural asymmetry in how third-party intervention operates.[137] While consumer groups and environmental intervenors can sometimes succeed in blocking a proposed rate increase, they do not have enough internal data to initiate price cuts on their own. Intervenors cannot affirmatively construct an independent evidentiary record sufficient to compel a rate reduction.[138] The utility's information advantage is therefore doubly protective. It raises the cost of regulatory action against the firm, while simultaneously constraining the private challengers who might otherwise substitute for an under-resourced commission.[139]

Consequently, simply increasing funding for opposition testimony would not eliminate the bias.[140] As long as the methodology is subjective and the utility sets the opening bid, improved intervenor funding can at best mitigate these problems.

(iii) Political Capture and Revolving Door Concerns

The collective action problem described above also creates conditions for regulatory capture.[141] It operates through two channels. First, commissions depend on utilities for the data, technical models, and feasibility assessments that frame each proceeding. Over time, this dependence produces cognitive capture since regulators internalize the utility's framing of contested issues because the utility is the primary source of information on which decisions rest.

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[137] Fremeth & Holburn, *supra* note __, at 11.

[138] *Id.* at 12 (arguing that "imperfect information about utility operations thus raises the costs for interest groups to credibly petition the PUC to initiate a rate review with the purpose of ultimately reducing rates.")

[139] *Id.* at 31-32 (decision costs "insulate policies against regulator-initiated change but make firm-induced proposals more likely." These asymmetries present a "considerable hurdle for consumer and other groups wishing to effect rate reductions" because "obtaining evidence of utility overearnings... is extremely costly.")

[140] Moreover, sixteen states already compensate intervenors and to our knowledge, there is no evidence that these states have systematically lower allowed returns. *See State Approaches to Intervenor Compensation*, NAT'L ASS'N REG. UTIL. COMMISSIONERS 6 (Dec. 2021), https://pubs.naruc.org/pub/B0D6B1D8-1866-DAAC-99FB-0923FA35ED1E.

[141] Stigler, *supra* note __, at __ ("as a rule, regulation is acquired by the industry and is designed and operated primarily for its benefit."); Ernesto Dal Bó, *Regulatory Capture: A Review*, 22 OXFORD REV. ECON. POL'Y 203, 204 (2006) (situating early scholarship on regulatory capture as opposing the public interest view: "…regulators will be motivated by the duty to protect consumers from monopolistic abuse. This perspective on regulatory motivation came to be known as the 'public interest' view …Eventually, observers of regulation came to challenge this perspective. Even when a regulatory body has been set up to prevent monopolistic abuse, regulation ends up being 'captured' by the firms it is supposed to discipline.")

This is called cognitive capture.[142] Since utilities are repeat players, it's easier for them to develop long-term relationships with commission staff, cultivate credibility through consistent participation, and exploit institutional familiarity in ways that intervenors cannot.[143]

Second, public utilities influence regulators through direct political mechanisms such as campaign contributions, budgetary leverage over commission operations, and post-tenure career opportunities for commissioners.[144] The career pipeline runs both ways.[145] Former utility executives join commissions, and departing commissioners take positions at regulated firms or their affiliated law and consulting practices. This "revolving door" produces measurable bias in regulatory decisions because commissioners anticipate post-government employment and adjust their decisions accordingly.[146] Crucially, the mechanism does not require explicit negotiation. A

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[142] *See* William J. Baumol & Alvin Klevorick, *Input Choices and Rate-of-Return Regulation: An Overview*, 1 BELL J. ECON. 162 (1970); Marc Galanter, *Why the "Haves" Come Out Ahead: Speculations on the Limits of Legal Change*, 9 LAW & SOC'Y REV. 95, 97–103 (1974) (developing the repeat-player advantage mechanism that maps onto utilities' repeated participation in rate cases); David Freeman Engstrom, *Agencies as Litigation Gatekeepers*, 123 YALE L.J. 616, 657 (2013) (describing an "ideal agency" that is "vested with the power to delimit, terminate, or control private litigation efforts" and showing that procedural control and greater expertise can shape adversarial outcomes).

[143] For a related example, *see* James Kwak, *Cultural Capture and the Financial Crisis*, *in* PREVENTING REGULATORY CAPTURE: SPECIAL INTEREST INFLUENCE AND HOW TO LIMIT IT 79 (Daniel Carpenter & David A. Moss eds., 2014) (arguing that cognitive capture was a key reason for failure to regulate in the two decades leading up to the Great Financial Crisis).

[144] Daniel Carpenter & David A. Moss, PREVENTING REGULATORY CAPTURE: SPECIAL INTEREST INFLUENCE AND HOW TO LIMIT IT, 68–75 (2014) (cataloging channels through which regulated industries influence agency outcomes, including campaign contributions to appointing officials, control over agency budgets, and post-tenure employment as a revolving-door incentive); David Pomerantz, *Getting Politics out of Utility Bills*, ENERGY & POLICY INSTITUTE (2023), https://energyandpolicy.org/wp-content/uploads/2023/01/Getting-Politics-Out-of-Utility-Bills.pdf (documenting how electric utilities fund political influence operations through ratepayer charges, lobbying, and trade association dues, and describing how utilities exploit definitional ambiguity to pass political costs through to captive customers).

[145] Dal Bó, *supra* note __, 214 ("The fact that many regulators come from industry, or end up there, has long been thought to be a source of bias in regulatory decisions.")

[146] Yeon-Koo Che, *Revolving Doors and the Optimal Tolerance for Agency Collusion*, 26 RAND J. ECON. 378, 379–80, 383–85 (1995) (formalizing how post-regulatory employment opportunities can change a regulator's incentives even without explicit bargaining); David J. Salant, *Behind the Revolving Door: A New View of Public Utility Regulation*, 26 RAND J. ECON. 362, 362–64 (1995) (analyzing public utility regulation with repeated interaction and revolving-door incentives); Marc T. Law & Cheryl X. Long, *What Do Revolving-Door Laws Do?*, 55 J.L. & ECON. 421, 421–23 (2012) (framing revolving-door "career concerns" and studying post-government employment restrictions in the public utility commission context).

commissioner who hopes to work for a regulated utility after leaving office has strong incentives to cultivate relationships and avoid rulings that antagonize potential employers. Conversely, when commissioners come from industry, they arrive with beliefs that are shaped by years of working to maximize returns rather than to constrain them.

Empirical studies confirm that public utility commissioners disproportionately come from and return to the industries they regulate. Jared Heern assembled original background data on more than 800 commissioners serving from 2000 to 2020 and found that roughly 25% had prior utility or fossil-fuel industry experience.[147] Moreover, among commissioners for whom post-service employment could be identified, approximately half later worked in or adjacent to the industries they regulated, suggesting that the revolving door operates as a substantial channel of influence beyond the initial appointment pipeline.

In the context of state insurance regulation, which is structurally similar to utility regulation, a study shows that approximately 38% of commissioners studied took insurance-industry jobs after leaving office, and that roughly one in three had insurance-industry experience before serving.[148] Unsurprisingly, commissioners who moved through this revolving door were also more lenient,[149] resulting in insurers being 10% less capitalized than what was reported (by $3 billion to $6 billion more) during periods of financial stress.[150]

The way commissioners are selected, which bears on how they are held accountable, also matters. Besley and Coate find that elected commissions set lower electricity prices than appointed ones.[151] A few high-profile scandals also show that institutional design is important. The California Public Utility Commission's president was found to have held undisclosed communications with Southern California Edison during the negotiation of the San Onofre settlement, a proceeding that determined how billions of dollars in costs associated with the shuttered nuclear plant would

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[147] Jared Heern, *Who's Controlling Our Energy Future? Industry and Environmental Representation on United States Public Utility Commissions*, 101 Energy Res. & Soc. Sci. 103091 (2023).

[148] Ana-Maria Tenekedjieva, *The Revolving Door and Insurance Solvency Regulation* (Sep. 2, 2021), https://ssrn.com/abstract=3762573.

[149] *Id.* at 5 (finding that commissioners that left for industry conducted fewer exams, and their exams generated fewer restatements, a measure of effectiveness).

[150] *Id.* at 6-7.

[151] Timothy Besley & Stephen Coate, *Elected Versus Appointed Regulators: Theory and Evidence*, 1 J. EUR. ECON. ASS'N 1176 (2003).

be allocated between shareholders and ratepayers.[152] In Florida, investigative reporting revealed that Florida Power & Light had organized extensive political influence operations, including the use of "ghost" candidates designed to siphon votes in state legislative races, with the goal of shaping the regulatory and legislative environment in which the company's rates were set.[153] These anecdotes complement the strong empirical evidence that firms seek to influence regulators through both direct and indirect means. In sum, when billions of dollars turn on administrative decisions, regulated firms will invest heavily in shaping those decisions.

Taken together, the ratemaking process is structurally broken in a way that marginal fixes are unlikely to overcome. That is what motivates our market-based alternative proposed in Part IV.

C. Evidence of Persistent Over-Earning

This section presents three distinct lines of evidence to show that utilities earn returns above their cost of equity. First, studies comparing authorized ROEs to market benchmarks such as the CAPM show a persistent gap of roughly 200 to 400 basis points. Second, utility market-to-book ratios have averaged well above 1.0 which means that returns exceeding the cost of capital. Third, international comparisons show that British regulators approve returns 200 to 400 basis points below their American counterparts without impairing service or investment.

A substantial and growing body of empirical evidence demonstrates that American utilities have earned returns well above their cost of equity for at least two decades, and probably longer. A recent study assembled data on nearly every rate case decided for investor-owned electric and gas utilities in the United States over the past three decades.[154] It compares approved returns on equity against what investors actually require. The Capital Asset Pricing Model (CAPM) provides

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[152] Jeff McDonald, *Peevey's Secret Meeting on San Onofre*, San Diego Union-Tribune (Feb. 6, 2015).

[153] Jason Garcia & Annie Martin, *How FPL Secretly Took Over Florida Politics*, ORLANDO SENTINEL (Nov. 7, 2021); Mary Ellen Klas, *Florida Power & Light's Political Playbook Revealed*, MIAMI HERALD (Dec. 2021); Terry Spencer, *Head of Main Florida Power Company Retiring Amid Controversy*, ASSOCIATED PRESS (Jan. 25, 2023) ("The newspapers charged that the consulting company, Matrix LLC, went after politicians FPL opposed and secretly took over a Florida political news website and used it to give the company favorable coverage. It also spied on Times-Union columnist Nate Monroe, who had written critically of the company's bid to buy Jacksonville's municipal electric company.").

[154] Karl Dunkle Werner & Stephen Jarvis, *supra* note __.

a straightforward way to estimate this required return. In simple terms, investors demand compensation for two things. First, they want the risk-free rate, which is what they could earn by buying Treasury bonds instead. Investors will simply not invest in a risky venture if they could earn a higher return by investing in a less risky venture. Second, they want a premium for bearing risk and that premium depends on how much the stock moves with the overall market. A stock twice as volatile as the market should earn twice the risk premium.[155] Under standard assumptions for these parameters, the gap between allowed ROE and estimated cost of equity averaged approximately 3 to 4 percentage points throughout the 2010s and into the 2020s.[156] Converted to dollars, this excess return has cost consumers between $2 billion and $20 billion per year, depending on the benchmark, with their preferred estimate being on the order of $10 billion annually.[157]

Allowed utility returns have remained stubbornly high even as interest rates and market-wide costs of capital have fallen sharply. Industry data shows that average allowed ROEs for electric utilities hovered around 9.5 to 10% through much of the 2010s, even as the yield on 10-year Treasuries dropped below 2%.[158]

Any over-allowance increases the utility's accounting earnings. These earnings must be paid out as dividends or retained on the books. Either way, the excess accrues to shareholders, because investors price stocks on expected future cash flows. Consequently, persistent over-

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[155] *See* William F. Sharpe, *Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk*, 19 J. FIN. 425, 433–37 (1964); John Lintner, *The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets*, 47 REV. ECON. & STAT. 13, 15–16 (1965); Jan Mossin, *Equilibrium in a Capital Asset Market*, 34 ECONOMETRICA 768, 768–70 (1966) (developing the CAPM relationship between beta and expected return).

[156] Karl Dunkle Werner & Stephen Jarvis, *supra* note__, at 15–20 (even the "high" CAPM specification, which uses parameter values at the upper end of what the industry typically assumes, still suggests a sizeable gap between allowed ROE and cost of equity while the "low" CAPM specification produces an even larger gap)

[157] *Id.* at 25–27; *see also* Severin Borenstein, *What Does Capital Really Cost a Utility?*, Energy Inst. at Haas Blog (Oct. 3, 2022), https://energyathaas.wordpress.com/2022/10/03/what-does-capital-really-cost-a-utility/ (summarizing estimates ranging from roughly $2–$20 billion annually).

[158] *See* S&P Glob. Mkt. Intelligence, Regul. Rsch. Assocs., Rate Case Decisions in 2022: Major Energy Rate Case Decisions in 2022, at fig. 1 (reporting annual average authorized ROEs for electric utilities) [VERIFY SOURCE — specific figure/table and publication date not confirmed]; Bd. of Governors of the Fed. Rsrv. Sys. (US), Market Yield on U.S. Treasury Securities at 10-Year Constant Maturity (DGS10), Fed. Rsrv. Bank of St. Louis, FRED, https://fred.stlouisfed.org/series/DGS10 (last visited Feb. 11, 2026) (showing 10-year Treasury yields below 2% during portions of the 2010s).

allowance gets capitalized into a utility's stock price today. When the market expects regulators to keep granting ROEs above the cost of equity, investors will pay more than book value for each dollar of equity because book equity is expected to generate above-normal returns funded through rates.[159]

The market-to-book ratio offers a natural way to see this effect in the data. If a firm earns exactly its cost of equity, investors should value the firm's equity at book value, producing a market-to-book ratio of about one. When the ratio persistently exceeds one, the firm is earning more than investors require. Stewart Myers showed in 1972 that for a regulated firm, a market-to-book ratio above one implies regulators are setting the allowed return above the cost of equity.[160] U.S. electric utilities have maintained aggregate market-to-book ratios near 2.0 to 2.3 for years.[161] That figure means every dollar of shareholder equity in a regulated utility is worth roughly two dollars on the open market. The most straightforward explanation: investors are paying for the present value of expected future excess returns embedded in utility rates. It is hard to square these ratios with any account other than systematic over-earning.

Market-to-book ratios provide a complementary, and particularly intuitive, measure of over-earning. If regulators set allowed returns exactly equal to a utility's cost of capital, the market value of the utility's equity should roughly equal its book value. Investors would earn their required return, no more and no less, and would have no reason to pay a premium for the stock.

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[159] STEPHEN BREYER, REGULATION AND ITS REFORM 42 (1982) ("Conversely, if higher than competitive rates of return are offered to new investors, the price of the shares is bid up; the total market value of the shares exceeds their book value (in the above example the total market value of all shares was less than book value); and existing shareholders earn a windfall profit (instead of incurring a windfall loss).")

Karl Dunkle Werner & Stephen Jarvis, *Rate of Return Regulation Revisited* 18–22 (Energy Inst. at Haas, Working Paper No. 329R, rev. Mar. 2025) (estimating the gap between allowed ROE and the cost of equity using multiple CAPM benchmarks, finding an ROE premium ranging from roughly one to five percentage points over the past three decades, and calculating excess costs to consumers averaging approximately $7 billion per year).

[160] Stewart C. Myers, *The Application of Finance Theory to Public Utility Rate Cases*, 3 BELL J. ECON. & MGMT. SCI. 58, 65–70 (1972) (demonstrating that when the allowed rate of return equals the cost of equity capital, the market-to-book ratio should equal one, and that a ratio persistently above one implies that regulators are setting returns above the cost of equity).

[161] Werner & Jarvis, *supra* note __, at 19–20 (noting that market-to-book ratios for U.S. investor-owned utilities imply the ROE gap may be as large as five percentage points, and observing a strong connection between excess allowed returns and utility market valuations above book value); Mark Ellis, *Rate of Return Equals Cost of Capital: A Simple, Fair Formula to Stop Investor-Owned Utilities from Overcharging the Public* 8–12 (Am. Econ. Liberties Project, 2025) (using market-to-book ratios to demonstrate that utility shareholders systematically earn returns above the cost of equity, with aggregate market-to-book ratios for U.S. electric utilities near 2.0 to 2.3).

Persistent market-to-book ratios above 1.0 therefore imply that investors expect returns above the cost of capital for an extended period.[162] The aggregate market-to-book ratio for U.S. investor-owned utilities has hovered around 2.0 to 2.3 in recent years.[163] That figure implies that every dollar of shareholder equity in a regulated utility is worth roughly two dollars on the open market. The simplest explanation is that investors are paying for the present value of expected future excess returns embedded in utility rates.

One might object that high market-to-book ratios reflect something other than over-earning such as unaccounted for growth prospects or the presence of intangible assets that are not captured on the balance sheet. But the Werner and Jarvis study shows that the market-to-book ratio for utility stocks is strongly correlated with the size of the allowed ROE gap, both cross-sectionally and over time.[164] Utilities with higher allowed ROEs relative to their cost of capital trade at higher multiples of book value. That relationship is hard to explain without reference to excess regulatory returns.

International comparisons reinforce the point. Over the past three decades, regulators in the United Kingdom have approved returns on equity for gas and electric utilities that are 0 to 4 percentage points lower than their American counterparts.[165] British utilities, despite operating under more stringent return regulation, continue to attract capital, invest in infrastructure, and maintain reliable service.

This all suggests that allowed returns on equity for American utilities have persistently exceeded the cost of equity capital, and by a wide margin. That implies that rate-of-return regulation transfers billions of dollars annually from ratepayers to utility shareholders despite the fact that those transfers are not needed to attract capital to support reliable electric service.

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[162] See Stewart C. Myers, The Application of Finance Theory to Public Utility Rate Cases, 3 Bell J. Econ. & Mgmt. Sci. 58 (1972) (establishing the theoretical relationship between allowed ROE, cost of equity, and market-to-book ratios). If allowed ROE equals the cost of equity, the market-to-book ratio should be approximately 1.0.

[163] Werner & Jarvis, *supra* note __, at 22–23; Mark E. Ellis, Rate of Return Equals Cost of Capital: A Simple, Fair Formula 8–9 (Am. Econ. Liberties Project Jan. 2025), https://www.economicliberties.us/wp-content/uploads/2025/01/20250102-aelp-ror-v5.pdf (last visited Feb. 11, 2026).

[164] Werner & Jarvis, *supra* note __, at 22–24 (finding that market-to-book ratios are closely linked to the estimated ROE premium over cost of equity).

[165] Werner & Jarvis, *supra* note __, at 20–21 (comparing U.S. and U.K. approved ROEs from 1990 to 2023 using data from Ofgem price control determinations).

D. Negative Effects of Current Regime

State public utility commissions set rates to allow utilities to recover operating costs and earn a return on invested capital.[166] As such, under cost-of-service regulation, all allowed equity returns, including of course returns in excess of market rates, become part of the utility's revenue requirement, and the money required to pay those returns is collected from customers in the form of higher rates. The equity component of that return is calculated by applying the allowed ROE to the portion of the rate base financed with equity. If the allowed ROE exceeds the return investors actually require for bearing that level of risk, the difference is a regulatory rent paid for by captive ratepayers.[167]

To be more concrete, take a utility that has a $10 billion rate base financed with 50% equity. The equity rate base is $5 billion. If the true cost of equity is 7% but regulators set the allowed ROE at 10%, the annual excess return is 3% × $5 billion, or $150 million. That excess amount mechanically goes into the revenue requirement and ends up on customers' bills. It is a direct wealth transfer from ratepayers to shareholders that would not occur if the process were operating to protect ratepayers in the manner it was intended to do.

Persistent over-earning also creates leads to "capital bias" which is sometimes colloquially termed "gold-plating." Under cost-of-service regulation, a utility earns a return on every dollar of invested capital. If that return exceeds the cost of capital, each additional dollar of rate base generates economic profit. The firm therefore has an incentive to expand its rate base (essentially spend more) beyond the efficient level, and to choose relatively more capital-intensive solutions even when cheaper alternatives are available.

Harvey Averch and Leland Johnson proved this formally in 1962.[168] When regulators let a utility earn, say, 10% on its capital investments, but the utility's actual cost of borrowing is only 7%, every dollar added to the rate base generates a guaranteed three cent profit paid by ratepayers.

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[166]James C. Bonbright, Albert L. Danielsen & David R. Kamerschen, PRINCIPLES OF PUBLIC UTILITY RATES 214–18 (2d ed. 1988) (explaining that the revenue requirement is derived by applying the allowed rate of return to the rate base, so that any increase in the allowed return translates directly into higher rates collected from customers).

[167]Alfred E. Kahn, THE ECONOMICS OF REGULATION: PRINCIPLES AND INSTITUTIONS 42–48 (1988) (describing cost-of-service regulation as a system in which "the company is to be permitted to set prices that will cover its costs of doing business, including . . . a return on the owners' capital" and observing that rates are set to generate revenue equal to total cost plus allowed return on invested capital).

[168] Harvey Averch & Leland L. Johnson, *Behavior of the Firm Under Regulatory Constraint*, 52 AM. ECON. REV. 1052, 1053–58 (1962).

Capital becomes artificially cheap from the perspective of the firm, so the utility has an incentive to overinvest in capital.[169] It builds new facilities instead of leasing them. It chooses equipment with higher upfront costs and longer depreciation schedules. It hires fewer workers and buys more machines. A profit-maximizing firm in a competitive market would try to minimize costs, but a regulated firm under cost-of-service has the incentive to maximize the rate base.

In theory, the regulator approves every single investment a regulated entity makes so at least hypothetically, it could police the behavior of firms and eliminate or at least significantly mitigate the Averch Johnson effect.[170] However, as we noted in the previous section, it is not feasible for regulators to monitor utilities' day-to-day operations. Measuring the Averch-Johnson effect is difficult and although empirical literature is somewhat contested, but the consensus view is that there are significant amounts of overinvestment.[171]

Several studies have compared regulated utilities to unregulated firms and found evidence of capital bias. Robert Spann estimated that regulated firms used 24 to 59 percent more capital than cost-minimizing firms would have.[172] Leon Courville reached a similar conclusion using

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[169] Kahn, *supra* note __, at 49–59 (explaining that "[i]f the rate of return permitted by the regulatory agency exceeds the cost of capital," the firm "will have an incentive to expand its rate base" and will "tend to substitute capital for other inputs" even when doing so raises total costs); Joseph D. Kearny & Thomas W. Merrill, *The Great Transformation of Regulated Industries Law*, 98 COLUM. L. REV. 1323, 1401 (1998). ("The best known is the Averch-Johnson hypothesis, which posits that cost-of-service rate regulation creates an incentive for utilities to make excessive capital investments in order to boost their rate of return.")

[170] For an intuitive discussion, *See* Breyer, *supra* note __, 49-50 ("To use an extreme example, Michigan Electric Company would be delighted to borrow $10 million at 7 percent to build *Egyptian pyramids* if the fair rate of return is 8 percent. If the regulator approves, it will collect an additional $800,000 from its Michigan customers, pay $700,000 to its bondholders, and keep the difference. As the example suggests, whether the AJ effect exists in fact is controversial. Regulators must approve the firm's investments, and they would obviously disapprove an investment in pyramids. Whether they would disallow an investment in newer, sturdier telephone poles or longer-lasting telephone cable, however, is more problematic.")

[171] Breyer, *supra* note __, 49-50 ("Economists have debated vigorously whether the regulatory process leads utilities to overinvest, to use too much capital in production, and to provide more product quality than is called for… Hence, it is not surprising that economists' empirical studies of the question have reached conflicting conclusions."); Kearney & Merrill, *supra* note __, 80 ("Although attempts to confirm [the Averch-Johnson hypothesis] empirically have been inconclusive, there can be little doubt that electric utilities operating under cost-of-service regulation made very expensive investments in nuclear power plants in the 1960s and 1970s that in retrospect appear unwarranted. Similarly, many observers believe that the pre-divestiture Bell monopoly gold-plated its physical plant.")

[172] Robert M. Spann, *Rate of Return Regulation and Efficiency in Production: An Empirical Test of the Averch-Johnson Thesis*, 5 BELL J. ECON. & MGMT. SCI. 38 (1974).

cross-sectional data, finding that regulated electric utilities operated with a higher capital-to-labor ratio than profit-maximizing firms operating without rate-of-return constraints.[173] A natural criticism of these papers is that regulated and unregulated firms operate in systematically different environments which makes direct comparisons unreliable.

Capital bias, however, is a subset of broader problems caused by inflated return on equity. Empirical studies that directly test Averch-Johnson typically measure and examine capital intensity as the key outcome. But excess returns on equity can also bias utilities toward owning assets rather than buying services from less costly third-party providers.[174] When regulators guarantee a return on equity above the true cost of capital, the utility profits from spending more rather than less at every stage of the supply chain. For instance, a vertically integrated utility that owns generators will dispatch those generators even when purchasing power from the market would cost less. A utility affiliated with a pipeline company will contract for more pipeline capacity than its customers need, because the excess cost passes through to ratepayers while the profit accrues to the affiliated seller. A utility that builds its own transmission will propose projects designed to maximize its rate base rather than to serve actual demand. If the allowed return did not exceed the actual cost of capital, these distortions would shrink. The utility would gain nothing from running an expensive plant, overbuilding a pipeline, or gold-plating a transmission line.

There is significant *causal* evidence that provides support for the cost-saving effects of market-based capital pricing. Steve Cicala's recent study of the transition from cost-of-service regulation to market-based dispatch in electricity generation studies the impact of staggered adoption of wholesale electricity markets from 1999 to 2012 across regions in the US.[175] It compares the same grid before and after the switch and found that competitive markets reduced production costs by roughly 5 percent, saving about $3 billion per year.[176] The savings came from improved allocative efficiency across plants. Under regulated dispatch, system operators kept high-

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[173] Joshua C. Macey, *Outsourcing Electricity Market Design*, 91 U. CHI. L REV. 1243 (2024); Leon Courville, *Regulation and Efficiency in the Electric Utility Industry*, 5 BELL J. ECON. & MGMT. SCI. 53 (1974).

[174] Paul L. Joskow & Richard Schmalensee, *Cost of Service Regulation of Electricity Distribution Services in the U.S.*, *in* HANDBOOK ON ELECTRICITY REGULATION 44 (Jean-Michel Glachant, Michael Pollitt & Paul Joskow eds., Edward Elgar Press 2024) (arguing that the capital bias from cost-of-service regulation "is likely ... most importantly articulated as a bias toward owning capital assets rather than buying services from third parties").

[175] Steve Cicala, *Imperfect Markets Versus Imperfect Regulation in U.S. Electricity Generation*, 112 AM. ECON. REV. 409 (2022).

[176] *Id.* at 409-410.

cost generators running even when cheaper alternatives sat idle. Market dispatch replaced those command-and-control decisions with auctions that shifted output to lower-cost units and increased trade across service areas.[177] The results confirm that regulated firms maintained inefficient production capacity that a competitive market corrected by choosing cheaper generators.

Leila Safavi documents a related form of capital bias in the natural gas sector, finding that vertically integrated utilities, those that own both pipelines and local distribution companies, contract for significantly more pipeline capacity than their standalone counterparts.[178] Because regulators approve fuel and transportation costs on a passthrough basis, a utility that overpays for pipeline capacity on an affiliated system can transfer wealth from ratepayers to shareholders of the parent company. Safavi estimates that this overcontracting results in billions of dollars in excess costs and contributes to overinvestment in fossil fuel pipeline infrastructure.[179] Capital bias, then, operates through more than straightforward rate-base padding. Affiliated transactions and cost passthrough provisions create additional channels for the same distortion.

These distortions also delay the clean energy transition. Over the next two decades utilities, will invest trillions of dollars in grid modernization, transmission expansion, and clean energy infrastructure. And capital bias implies that utilities will prefer to own generation, storage, and transmission assets rather than contract for equivalent services from third parties, even when contracting is cheaper. They will favor large-scale, capital-intensive projects over distributed or competitive alternatives. And they will resist reforms, such as competitive procurement of clean energy resources, that would reduce the share of investment flowing through rate base. After electricity restructuring in the late 1990s, utilities in restructured states shifted capital investment away from generation, where competitive markets had taken hold, and into transmission and distribution, where cost-of-service regulation and its associated return on rate base still applied.[180]

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[177] *Id.* at 415-16.

[178] Leila Safavi, *Can Vertically Integrated Firms Evade Pricing Regulation? Evidence from Energy Utilities* (Energy Inst. at Haas, Univ. of Cal., Berkeley, Working Paper No. 344, Nov. 2023) (finding that vertically integrated utilities contracted for significantly more pipeline capacity than standalone distribution companies, consistent with the hypothesis that cost-of-service passthrough creates incentives to inflate expenditures on affiliated infrastructure).

[179] *Id.* at 28–32 (estimating that overcontracting by vertically integrated utilities resulted in billions of dollars in excess costs passed through to ratepayers and contributed to overinvestment in fossil fuel pipeline capacity).

[180] Severin Borenstein & James Bushnell, *The U.S. Electricity Industry After 20 Years of Restructuring*, 7 ANN. REV. ECON. 437, 450–55 (2015) (observing that utilities in restructured states shifted capital investment from

The distributional consequences of over-earning and capital bias also makes things worse. Both excess returns and overinvestment are recovered from all customers. Since low-income households spend a disproportionately large share of their income on energy, higher rates caused by excess ROE and capital bias amount to a regressive transfer.[181] They shift wealth from ratepayers, who bear the cost of inflated returns and capital spending, to shareholders, who are on average far wealthier than the customers they serve.

In conclusion, the current regime imposes three distinct categories of costs on ratepayers. First, excess ROE creates a direct, dollar-for-dollar wealth transfer from customers to shareholders. Second, due to capital bias, excess ROE causes capital bias, preference for utility owned infrastructure, and delays the clean energy transition. Third, these distortions disproportionately impact low-income people.

III. Competitive Direct Equity (CDE)

This Part presents competitive direct equity as an alternative to administered ROE estimation. Section A describes how CDE actually works. Section B demonstrates that CDE, paired with a full-distribution requirement, eliminates capital bias across three financing scenarios (retained earnings, new issuance, and mixed financing). Section C addresses how the allowed return adjusts over time through periodic repricing. Section D explains how CDE separates capital pricing from loss allocation to handle firm-specific misconduct risk. Section E compares CDE to incremental reform proposals on five dimensions, including cost reduction, methodological simplicity, capital efficiency, information quality, and fairness to utilities.

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generation to transmission and distribution, where cost-of-service regulation and its associated return on rate base still applied).

[181] Severin Borenstein, Meredith Fowlie & James Sallee, *Paying for Electricity in California: How Residential Rate Design Impacts Equity and Electrification* 12–18 (Energy Inst. at Haas, Working Paper No. 330, Sept. 2022) (finding that electricity rates include a substantial implicit tax above marginal supply cost, and that this tax falls disproportionately on low-income households, who spend a significantly larger share of income on electricity than higher-income households, amplifying the regressive effect of rate increases); Ariel Drehobl & Lauren Ross, *Lifting the High Energy Burden in America's Largest Cities* 1–5 (ACEEE, Apr. 2016) (finding that low-income households nationally devote roughly three times the share of income to energy costs as compared with higher-income households).

A. How Competitive Direct Equity Works

Competitive direct equity is a market-based mechanism for pricing utility equity capital. When a regulator approves a utility investment plan and the utility requires additional equity to finance it, the utility must raise that equity through an open and standardized auction process. Qualified investors bid the return on equity they are willing to accept to supply capital to the utility on specified terms. The lowest conforming bid clears, and the resulting return becomes the allowed return on equity for that tranche.[182] The regulator continues to determine what investments are prudent, to enforce service quality and nondiscrimination obligations, and to oversee the utility's operations. Competitive direct equity alters neither the scope of regulation nor the allocation of decision-making authority; it changes only how equity capital is compensated and who supplies it.

Utilities already obtain debt financing through competitive capital markets. When utilities issue bonds, regulators do not independently determine a "reasonable" yield. Underwriters solicit bids, investors compete, and the utility accepts the lowest-cost terms available. Regulators then incorporate the embedded cost of that issuance into rates. The cost of debt is discovered directly through market competition and passed through to customers.

Equity is treated differently under the current regulatory regime. Rather than asking investors what return they will actually accept, regulators estimate the cost of equity using a combination of discounted cash flow models, capital asset pricing models, and utility-specific risk-premium methodologies. Debt and equity are both claims on regulated cash flows, yet one is priced competitively in the market while the other is determined administratively.

The conventional justification for this administrative treatment is that, unlike debt, the cost of equity is not directly observable. [183] Although utilities routinely issue equity in public

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[182] The CDE mechanism we propose resembles a Dutch auction in certain aspects. Specifically, the CDE involves an open and standardized auction process where qualified investors bid the lowest yield (return on equity) they are willing to accept to supply capital to the utility. The lowest conforming bid clears, and the resulting return becomes the allowed return on equity for that tranche. Similarly, in a Dutch auction, the winning bid price is lowest bid that clears the market. In both cases, competition among bidders drives the price (or return) to its market-clearing level, ensuring that the utility's equity capital is priced efficiently and fairly. This approach eliminates the subjectivity and inefficiencies of traditional administrative methods for determining the cost of equity, replacing them with a transparent, market-based mechanism.

[183] Corporate finance scholarship often emphasizes that external equity issuance may be financially costly due to adverse selection and signaling effects, with seasoned equity offerings in competitive industries associated with

markets, those transactions do not reveal an observable expected return that regulators can incorporate into rates. Equity offerings establish share prices, but the allowed return on equity—the parameter embedded in rates—is determined separately and in advance through the regulatory process. Investors then bid the utility's stock price up or down in response to that allowed return, along with expectations about growth, risk, dividend policy, and other firm-specific considerations. The cost of equity is inferred indirectly from observed stock prices, rather than revealed through the act of capital formation itself.

This circularity is often treated as an unavoidable feature of equity finance. In reality, it is an artifact of how utility equity is raised and priced under the current regulatory paradigm. Competitive direct equity breaks that loop by requiring equity capital to be priced through competition at the moment it is supplied, thereby revealing the market-clearing return directly rather than estimating it ex post from secondary-market valuations.

Finally, some may object that equity auctions would impose unnecessary transaction costs. Utility financing, however, is already episodic and lumpy. Firms raise large amounts of capital at discrete intervals to fund major investments. Periodic auctions for substantial equity tranches would align with that existing rhythm, rather than disrupt it. Indeed, finance theory suggests that when issuance involves fixed costs, firms minimize those costs by raising capital infrequently but in meaningful size.[184]

B. How CDE Eliminates Capital Bias

Competitive direct equity is designed to eliminate capital bias when paired with a requirement that all income be distributed (i.e., no retained earnings). As a general matter, when

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negative abnormal returns at announcement. *See, e.g.*, Stewart C. Myers & Nicholas S. Majluf, Corporate Financing and Investment Decisions When Firms Have Information That Investors Do Not, 13 J. FIN. ECON. 187 (1984). That intuition has limited applicability to investor-owned utilities. Regulated utilities are among the largest and most frequent issuers of public equity in U.S. capital markets—second only to real estate investment trusts—and routinely raise equity to finance regulator-approved capital programs. Because such issuance is driven by regulatory requirements rather than managerial assessments of mispricing or financial distress, it carries little of the informational content that underlies adverse selection models. Nor is equity issuance by utilities difficult to contract for; it occurs on standardized terms under well-developed corporate and securities law. The practical difficulty in utility ratemaking has therefore not been contracting for equity, but observing a transparent, transaction-level expected return that regulators can incorporate into rates.

[184] Mark T. Leary & Michael R. Roberts, *Do Firms Rebalance Their Capital Structures?*, 60 J. FIN. 2575 (2005) (empirical evidence consistent with costly adjustment and large but infrequent capital structure changes).

equity capital earns exactly its opportunity cost, reinvesting that capital—whether through retained earnings or new issuance – creates no incremental value for shareholders. Capital bias arises when this condition fails. When the allowed return on equity exceeds its true cost, incremental investment generates an above-market spread that is capitalized into share prices, creating a structural incentive to expand the regulated equity base even when doing so does not minimize system costs.

Traditional rate-of-return regulation embeds this distortion by design. When allowed returns exceed the market cost of equity, utilities can create shareholder value simply by increasing the quantity of capital on which that return is earned. That incentive does not depend on the source of the incremental capital. Whether equity is supplied through retained earnings, raised from new investors, or financed through a combination of the two, the same valuation logic applies: each additional dollar of regulated equity earning a supra-market return produces positive net present value for shareholders. The familiar Averch-Johnson effect is therefore best understood not as a behavioral anomaly, but as a predictable consequence of pricing equity capital above its opportunity cost.

Competitive direct equity reverses this logic by pricing equity at the market-clearing return commensurate with the utility's actual risk. When the return on equity equals the cost of equity, incremental investment becomes value-neutral: expanding the equity base neither creates nor destroys value for existing shareholders. Competitive direct equity may permit higher returns on initial equity tranches to compensate for transitional or regulatory uncertainty, but those returns can be made time-limited and non-scalable.

A full-distribution requirement is necessary to make this neutrality operative over time. Even under competitive pricing, early equity tranches may earn returns that exceed the contemporaneous cost of equity as risk declines and information improves. If utilities are permitted to retain and reinvest those earnings, shareholders have an incentive to scale legacy returns through internal capital growth. Requiring full distribution prevents that dynamic by ensuring that all incremental equity must be repriced at the margin, rather than compounded through reinvestment. Because incremental equity is continuously repriced at auction and earnings must be distributed rather than reinvested, any temporary spread between ROE and the contemporaneous cost of equity cannot be compounded over time. In that respect, competitive direct equity replaces the permanent over-remuneration characteristic of traditional rate-of-return regulation with a transitional premium that decays as risk declines.

The analysis below makes this point explicit across three financing scenarios: incremental capital supplied through retained earnings, through new equity issuance, and through a combination of the two.

(i) Incremental Capital from Retained Earnings

Consider first the case in which incremental equity capital is supplied entirely through retained earnings. Retained earnings are often treated as a distinct or less problematic source of capital because they do not require external financing. From the perspective of shareholders, though, retained earnings are simply equity capital that has not been distributed. If earnings were paid out, shareholders could reinvest those funds elsewhere at the market cost of equity. Retention therefore represents an investment decision on behalf of shareholders, and its value depends on the return that retained funds earn relative to their opportunity cost.

A simple numerical example illustrates the point. Suppose a utility has equity of $100, earns an allowed return on equity of 10 percent, and faces a market cost of equity of 6 percent. Annual earnings are $10. If those earnings are distributed, shareholders receive $10 in cash, which they can reinvest elsewhere at the market rate. If, instead, the $10 is retained and reinvested in regulated assets earning 10 percent, it generates $1 of additional annual earnings in perpetuity. Capitalized at a 6 percent discount rate, that stream has a market value of approximately $16.67. The $6.67 difference reflects positive net present value created solely by reinvesting capital at a return exceeding its opportunity cost. So long as the allowed return on equity exceeds the cost of equity, shareholders rationally prefer retention over distribution, even if the underlying investments are not customer cost-minimizing. Capital bias therefore persists even in the absence of new equity issuance.

In contrast, if the allowed return equals the cost of equity, the same example yields a different result. A retained $10 that earns 6 percent generates $0.60 of annual earnings, which capitalizes to $10 at a 6 percent discount rate. Retention becomes value-neutral. Shareholders are indifferent between distribution and reinvestment, and no capital bias arises from retained earnings.

A full-distribution requirement eliminates this channel of capital bias by construction. If all earnings must be distributed, utilities cannot expand the equity base earning a given return through internal reinvestment. Any growth in regulated equity must occur through explicit capital raising, where market discipline can be applied.

(ii) Incremental Capital from New Equity Issuance

Capital bias can also arise when incremental equity is supplied through new share issuance. Suppose a utility issues new equity at the prevailing market price and invests the proceeds in regulated assets. If the allowed return on equity exceeds the market cost of equity, the investment of the new capital increases the total market value of the firm by more than the amount of capital raised.

This can again be seen with a simple example. Assume a utility has $100 of equity earning a 10 percent allowed return, a 6 percent cost of equity, and full distribution of earnings. The total market value of equity is therefore $100 × (10% / 6%) = $166.67. Suppose the utility issues $50 of new equity at market value and invests it in regulated assets earning the same return. Total equity rises to $150, annual earnings rise to $15, and the market value of equity becomes $150 × (10% / 6%) = $250. The $50 capital infusion has increased total equity value by $83.33. New investors contribute $50 and receive claims worth $50; the remaining $33.33 accrues to incumbent shareholders through an increase in share price.

This result may appear counterintuitive because equity issuance is often associated with dilution. But dilution analysis presumes that new capital earns no more than its opportunity cost. Under rate-of-return regulation, that presumption fails whenever allowed returns exceed market costs. In that case, issuance-driven growth is attractive to incumbent shareholders even if they do not participate in the issuance, because expanding the equity base expands the application of supra-market returns.

Once again, the conclusion reverses if the allowed return equals the cost of equity. If equity earns exactly its opportunity cost, issuing $50 of new equity increases total firm value by exactly $50. Incumbent shareholders are neither harmed nor benefited, and capital expansion becomes value-neutral.

(iii) Incremental Capital from Retained Earnings and New Equity Issuance

In practice, utilities finance growth through a combination of retained earnings and new equity issuance. That mixed financing structure does not weaken the foregoing analysis; it reinforces it. Retained earnings and newly issued equity are economically equivalent sources of equity capital. Both expand the equity base, both earn the same regulated return, and both are evaluated by investors against the same opportunity cost.

When the allowed return on equity exceeds the cost of equity, each incremental dollar of equity, regardless of its source, creates positive net present value. Capital bias is therefore cumulative and persistent. It does not depend on payout policy, financing mix, or accounting conventions. It is a structural feature of regulation whenever equity is systematically over-remunerated.

Conversely, when the allowed return equals the cost of equity and all earnings are distributed, retention and issuance alike become value neutral. Utilities cannot scale supra-market returns through reinvestment, and any growth must be financed through new equity priced at the current market cost of capital.

(iv) Dynamic Considerations and the Necessity of Full Distribution

These conclusions are especially important in a dynamic setting. Even under competitive direct equity, early auctions are likely to clear at a higher cost of equity than will prevail once regulatory risk declines, information improves, and the utility's investment profile stabilizes. Legacy equity tranches may therefore earn returns that exceed the contemporaneous market cost of equity. If utilities are permitted to retain and reinvest those earnings into regulated assets earning the same return, shareholders have an incentive to expand the equity base associated with those tranches over time. Capital bias thus reemerges, not because equity was mispriced at issuance, but because retained earnings allow supra-market returns to be compounded.

A full-distribution fixes this problem. By preventing utilities from increasing the balance of equity capital that earns returns tied to legacy tranches, full distribution ensures that all incremental equity investment must be raised explicitly through new competitive offerings priced at the current cost of equity. Competitive direct equity disciplines pricing at the margin; full distribution prevents infra-marginal rents from being scaled. Only together do they eliminate capital bias.

(v) Implications for Competitive Direct Equity

This analysis clarifies the role of competitive direct equity in correcting capital bias. Capital bias does not arise because utilities retain earnings rather than distribute them, nor because they issue equity rather than rely on internal funds. It arises because regulation permits equity capital to earn a return exceeding its opportunity cost. Retained earnings compound those excess returns over time by expanding the equity base that earns the regulated return. New equity issuance produces a similar distortion: when additional capital earns a supra-market return, some of the

value created by that investment accrues directly to existing shareholders, making expansion of the regulated equity base itself a source of shareholder value rather than a response to underlying system need.

By aligning allowed returns with market costs and requiring full distribution of income, competitive direct equity renders incremental equity investment value neutral. Once that condition is satisfied, utilities retain no financial incentive to expand rate base for its own sake, and capital allocation decisions can be evaluated on their operational and social merits rather than on their ability to generate regulatory rents.

C. Maintaining ROE–COE Alignment Over Time

Competitive direct equity is intended to price equity capital at its market-clearing return for the utility's actual risk. Because that risk is not static, a complete account of the mechanism must specify how the return on equity adjusts over time. Absent such adjustment, even competitively determined returns could diverge from the contemporaneous cost of equity as information improves, regulatory uncertainty resolves, or capital market conditions change.

Importantly, competitive direct equity does not introduce repricing of equity as a novel regulatory intervention. Under existing rate-of-return regulation, the allowed return on equity for investor-owned utilities is already periodically reset through general rate cases or comparable proceedings. Competitive direct equity preserves that paradigm. The distinction lies not in whether returns are reset, but in how the reset is determined.

Where a reset mechanism is adopted under competitive direct equity—whether through periodic auctions, fixed-term resets, or specified backstop benchmarks – it applies by default to all outstanding equity subject to reset, including equity issued prior to the adoption of competitive direct equity. In this respect, competitive direct equity replaces administratively determined returns with a market-based repricing process, rather than creating a separate regime for new and existing capital.

Several approaches to ROE adjustment are consistent with the logic of competitive direct equity. At one extreme, returns on a given equity tranche could remain fixed indefinitely, with only newly issued equity priced at auction. Under a full-distribution requirement, this "vintaging" approach prevents the internal scaling of legacy returns, but it allows early tranches to earn returns that may exceed the utility's long-run cost of equity. While such an approach may be sufficient to eliminate capital bias in a strict sense, it risks entrenching transitional premia beyond the period

justified by underlying risk. Returns that were appropriate at the time capital was committed may later appear excessive as uncertainty resolves, potentially inviting retrospective criticism despite having been competitively priced at the time capital was committed.

At the opposite extreme, the return on equity for outstanding equity could reset at each auction of new equity, causing all outstanding equity to earn the contemporaneous market-clearing return.[185] Such an approach would maximize alignment between ROE and the cost of equity by ensuring that pricing reflects current risk and capital market conditions whenever new capital is raised. At the same time, though, frequent repricing entails administrative, legal, and transaction costs, and may be unnecessary where a utility's capital needs are episodic rather than continuous.

Over time, auctions could be conducted on a regular and predictable cadence, analogous to existing rate-setting cycles, balancing the benefits of market alignment against the costs of repeated repricing. The appropriate frequency depends on the scale, timing, and regularity of the utility's investment needs: utilities with large and ongoing capital programs may warrant more frequent auctions, while those with more lumpy or infrequent investment profiles may achieve equivalent alignment at lower procedural cost through less frequent repricing.

Although predictability in auction timing should be the default, no single cadence can be optimal in perpetuity. Commissions and utilities must retain the ability to adjust auction

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[185] Some readers may analogize auction-based repricing under competitive direct equity to the failure of the municipal auction-rate securities (ARS) market during the 2008 financial crisis. The analogy is imperfect. The ARS market failed not because auction mechanisms are inherently unstable, but because auctions were used to provide ongoing liquidity for long-duration instruments under the implicit assumption of dealer support. When dealer balance sheets contracted in 2008, that support was withdrawn simultaneously across the market, causing auctions to fail en masse and leaving investors unexpectedly illiquid. Competitive direct equity, by contrast, uses auctions for price discovery rather than as a liquidity mechanism and does not depend on discretionary dealer support to function. For these reasons, the ARS experience does not undermine the viability of auction-based repricing in this context. *See*, e.g., Fin. Crisis Inquiry Comm'n, *The Financial Crisis Inquiry Report: Final Report of the National Commission on the Causes of the Financial and Economic Crisis in the United States* 277 (2011), https://www.govinfo.gov/content/pkg/GPO-FCIC/pdf/GPO-FCIC.pdf; Song Han & Dan Li, *The Fragility of Discretionary Liquidity Provision—Lessons from the Collapse of the Auction Rate Securities Market*, (Fed. Reserve Bd., Fin. & Econ. Discussion Series, 2010), https://www.federalreserve.gov/pubs/feds/2010/201050/201050pap.pdf (explaining that ARS auctions were designed to provide liquidity for long-term instruments and failed when broker-dealers withdrew support during the financial crisis); Marc L. Ross, *The ARS Debacle: The Forgotten Crisis of 2008*, CFA Inst. Enterprising Investor (Jan. 31, 2017), https://blogs.cfainstitute.org/investor/2017/01/31/the-ars-debacle-the-forgotten-crisis-of-2008/.

frequency as investment requirements and market conditions evolve. The relevant constraint is transparency rather than rigidity: changes in cadence should be prospective, rule-based, and tied to objective indicators of capital need, rather than ad hoc reassessment of returns. This approach replaces episodic, adversarial reassessment of allowed returns with a predictable, market-based repricing process that adjusts transparently as underlying capital requirements change.

Between these poles lies a fixed-term reset structure, under which the return on equity for a given tranche is fixed for a specified period and then resets according to a predetermined rule. Such an approach is familiar in capital markets and allows early investors to price transitional risk ex ante, while ensuring that returns converge to the market-clearing level as uncertainty resolves. In the context of competitive direct equity, the natural reset benchmark is the auction-clearing return for new equity issued at or near the reset date.

To address situations in which competitive direct equity auctions do not occur or do not produce a reliable market-clearing return – such as periods in which a utility has no immediate need to raise equity or faces temporarily thin market participation – a backstop reset mechanism may be specified ex ante. A long-term Treasury yield plus a fixed spread provides a natural first-line benchmark, reflecting the long-duration nature of utility equity and the central role of Treasuries as the risk-free anchor in cost-of-capital analysis. Such a benchmark would operate only as a contingency and would not displace auction-based pricing under ordinary conditions. Because no single benchmark can be expected to remain appropriate under all future conditions, administrative determination of the return on equity may also be specified as a backstop of last resort, preserving market-based pricing as the default.

Regardless of the specific reset cadence, the critical design constraint is that ROE adjustments be rule-based and non-discretionary. So long as the timing and method for any reset are specified ex ante – whether at issuance or through generally applicable regulatory rules – the resulting return profile reflects the agreed-upon terms on which capital is supplied rather than an ex post regulatory revaluation. In this way, competitive direct equity preserves capital attraction while ensuring that the return on equity converges to its opportunity cost over time.

D. Risk Attribution, Misconduct, and Persistent Firm-Specific Risk

The discussion that follows assumes a competitive direct equity regime in which outstanding equity tranches may be subject to automatic repricing over time. Repricing of existing equity is not required to attract new capital, which can be achieved through market-clearing

pricing of newly issued equity alone. Rather, repricing of legacy equity is a design choice that bears on how risk, accountability, and incentives are allocated once capital has been committed.

A natural concern with any mechanism that prices equity at market-clearing returns is the potential for moral hazard. If a utility's cost of equity rises because of unlawful conduct, negligent operations, or governance failures, automatically adjusting allowed returns to reflect that elevated risk could appear to shield incumbent shareholders from the consequences of their own actions. In particular, where competitive direct equity permits automatic repricing of outstanding equity tranches, higher firm-specific risk could translate into higher allowed returns for existing investors.

This concern arises because repricing, even when forward-looking in intent, affects the returns earned on capital already in place. Although the function of competitive repricing is to attract capital on forward-looking terms, automatic adjustments to allowed returns would affect the returns earned on capital already in place. Where elevated risk results from unlawful or imprudent conduct, such repricing could reward past misconduct by shifting its economic consequences from investors to ratepayers, thereby creating moral hazard.

Competitive direct equity addresses this tension by separating capital pricing from loss allocation. Repricing governs the terms on which capital is supplied going forward; it does not determine whether, or how, shareholders bear the consequences of unlawful or imprudent behavior. Accountability for past conduct can be imposed through established regulatory and legal tools – such as penalties, disallowances, or impairment of existing equity – but those tools alone do not determine who bears the ongoing cost of elevated risk. Even after misconduct has been sanctioned, higher perceived risk may persist, raising the return required to attract new capital. Under competitive repricing, changes in the cost of equity are ordinarily translated into allowed returns and, in turn, revenue requirements – a feature that is both expected and appropriate when risk reflects exogenous market conditions. Where elevated risk instead arises from unlawful or imprudent conduct, though, that same mechanism would translate firm-specific risk into higher rates, effectively shifting the cost of misconduct from investors to ratepayers.

How to prevent that translation – without impairing access to capital or relying on discretionary return suppression – is a structural problem inherent in rate-of-return regulation.[186]

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[186] Traditional rate-of-return regulation often treats discretionary adjustment of allowed ROE as a mechanism for disciplining misconduct. But to the extent such adjustments reduce allowed returns below the market cost of equity, they are incompatible with the continued attraction of incremental capital. In practice, regulators rarely sustain below-market returns for extended periods without resort to alternative sanctions, implicitly

Competitive direct equity makes that problem explicit – and tractable – by separating the pricing of forward-looking capital from the allocation of responsibility for past conduct. While repricing of newly issued equity is necessary to ensure continued access to capital, repricing of existing equity raises distinct questions of accountability. When firm-specific risk arises from unlawful or imprudent behavior, allowing that risk to be reflected in allowed returns for incumbent shareholders would confer an excess return. That excess return is the source of moral hazard.

Competitive direct equity uniquely enables an explicit separation between the pricing of new capital and the returns earned on capital already in place. Practically, this may be implemented through an auction-first repricing rule with a misconduct carve-out. By default, outstanding equity tranches reprice to the auction-clearing return. Where a formal regulatory or judicial finding establishes unlawful or imprudent conduct, legacy equity may be temporarily excluded from upward repricing attributable to that conduct, while newly issued equity continues to clear at the full market price.

Such an exclusion need not freeze the return on existing equity. Legacy tranches may continue to adjust automatically for exogenous, non-culpable changes in background conditions – such as changes in interest rates, inflation, or utility sector-wide risk premia – through rule-based mechanisms specified ex ante. What is excluded is not repricing as such, but upward adjustment driven by firm-specific risk of the utility's own making.

In this way, competitive direct equity preserves market-based capital formation while maintaining accountability. It ensures that new investors are compensated for the risk they bear, without permitting incumbent shareholders to benefit from misconduct through higher returns. Responsibility for such conduct is addressed through mechanisms suited to culpability – such as penalties, disallowances, or exclusion from repricing – rather than through discretionary suppression of returns that risks impairing access to capital.

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acknowledging that ROE cannot coherently function both as a forward-looking price for capital and as a backward-looking instrument of punishment. Competitive direct equity makes this distinction explicit by assigning capital pricing to market-based mechanisms while addressing misconduct through separate, rule-based allocation constraints.

E. Why CDE Outperforms Incremental Reforms

(i) Cost Reduction

CDE lowers what consumers pay by removing the spread between what regulators authorize and what investors actually require. The mechanics are straightforward. Suppose rate base is $10 billion, the authorized capital structure has roughly one-half equity, and investors bid an ROE that is 100 basis points below the status quo. The annual revenue requirement falls by roughly $50 million before taxes on the equity charge alone, and more once tax adjustments are applied. These effects add up to almost 20 percent.[187]

(ii) From Modeling Chaos to a Single Market Statistic

Status-quo ROE setting relies on expert models—DCF, CAPM, risk-premium, and "expected earnings"—that are workable in theory but highly elastic in practice. Each model requires contested inputs (growth rates, betas, market-risk premia, screening choices, comparable sets). Parties can reverse-engineer inputs to target a desired outcome; commissions then "pick a point" within a litigated range. This is why authorized ROEs tend to cluster and why proceedings devolve into battles of experts. Changing the weighting across models or tweaking specific inputs only relocates the discretion; it does not eliminate it. CDE collapses the degrees of freedom to one observable statistic: the winning bid.

(iii) Information Efficiency Increases

CDE is information efficient. Instead of regulators inferring investors' opportunity costs from volatile market proxies, it asks investors directly under standardized terms. That is how debt and municipal markets already discover prices.

(iv) CDE is Fair to Utilities

The point is not to punish utilities. If risk for utilities goes up, which may very well do in the near future, given demand uncertainties related to AI, CDE will reward them with a high return. Some states have responded by fixing ROEs using a formula that's relatively insensitive to

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[187] Mark Ellis Estimate. XX

market conditions. For example, Illinois' PSC ROE equals treasury plus 300 basis points. This gap may make sense now but not in the future.

CDE is robust to cycles and model drift. As market conditions change, the next auction clears at the then current cost of equity. There is no need to reopen model choices or re-litigate inputs whenever rates or risk premia move. Tranche-by-tranche "vintaging" lets commissions apply the bid ROE only to the associated equity portion of rate base, avoiding any retroactive effects while allowing the blended, system-wide ROE to converge toward the true cost of capital over time.

IV. CDE Is Legal

We argue that CDE delivers what the law already requires. *Bluefield* and *Hope* instruct that allowed returns must be "commensurate with returns on investments in other enterprises having corresponding risks" and sufficient to maintain financial integrity and attract capital, but no more. CDE uses competition to observe that commensurate return directly instead of inferring it from disputed models. CDE is lawful under the end-result rule. *Hope* explicitly says that no single formula controls and that courts review outcomes, not methods. Regulators can therefore adopt a market mechanism so long as the end result is just and reasonable and commensurate with comparable-risk enterprises. That is exactly what the auction reveals.

We recognize, of course that, like any other issuer, a utility selling securities pursuant to the CDE auction format proposed here would have to comply with the extant registration requirements of the Securities Act of 1933. Under Section 5 of the '33 Act,[188] any public offering of securities s requires an effective registration statement with the SEC, regardless of whether the securities are sold in a traditional underwriting or in an auction.

For example, Dutch auction IPOs, not unlike the sort of auction we are proposing here, have been successfully conducted by various companies, including Google, demonstrating that auction formats are permissible within the framework of existing securities laws Utilities specifically seeking to use auction formats, they would need to follow several key compliance requirements.

Prior to an auction a utility would register the offering under the Securities Act through Form S-3 if eligible, or another appropriate registration form, and ensure proper prospectus

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[188] 15 USCA § 77e

disclosure that describes the auction process. We note that under SEC Rule 415,[189] a utility could register a large amount of securities "for the shelf" which would allow it to conduct delayed or continuous offerings. Rule 415 allows for significant flexibility in the plan of distribution, allowing companies to choose the most advantageous auction format for a particular offering. After the securities have been registered and put "on the shelf, the utility would file a prospectus supplement, specifying the exact terms of the auction, and describing the bidding process, the date of the auction, and how the clearing price will be determined.

Many large utilities qualify as "Well-known Seasoned Issuers" (WKSIs), and conducting auctions would be even more straightforward for these firms.[190] Any utilities that is a WKSI could launch an auctions almost instantly because the prospectus supplements that precede auctions and other sales by WKSIs do not require further SEC review before starting the sales process. Among other criteria, a utility with a public float of more than $700 million qualifies as a WKSI. Based on their market capitalization, a substantial number of publicly traded utilities in the U.S., including NextEra Energy (NEE), The Southern Company, (SO), Duke Energy (DUK), American Electric Power (AEP), Consolidated Edison (ED), Exelon Corporation (EXC), PG&E Corporation (PCG), and Sempra Energy (SRE), qualify as WKSIs.[191]

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[189] 17 CFR § 230.415. The requirements for eligibility to make a shelf offering are complext, but generally, to qualify to make a shelf offering, the company must: (a) have a public float of at least $75 million; have filed all its required financial reports and materials with the SEC within the previous twelve calendar months; (c) not have defaulted on any of its debt, preferred stock dividends, or rental leases; (d) not have had a bankruptcy in the past three years; and (e) not have been convicted of any securities or financially related crimes in the past three years. Id. We further note that a company that does not have a public float of at least $75 million may nonetheless be eligible for a shelf offering by meeting "baby shelf" requirements. The main eligibility requirements for include requirements that the company: (a) have at least one class of common equity securities currently trading on a national exchange; (b) is not currently and has not been a shell company for the previous twelve calendar months; (c) refrain from selling securities cumulatively worth more than one-third of the market cap of its float in any 12 consecutive months.

[190] 17 CFR § 230.405. Under Rule 405, a WKSI must have either a worldwide market value of outstanding voting and non-voting common equity held by non-affiliates of $700 million or more, or have issued at least $1 billion aggregate principal amount of non-convertible securities in primary offerings for cash in the last three years 17 CFR § 230.405. Many large utilities meet these thresholds, allowing them to file automatic shelf registration statements that become effective immediately upon filing without SEC review.

[191] As of February 14, 2026, the market capitalization of each of these utilities was significantly above the $700 million floor to qualify as a WKSI. Specifically, the market cap of NextEra Energy (NEE) was $195.35 billion; the market cap of The Southern Company (SO) was $104.55 billion; the market cap of Duke Energy (DUK) was $99.70 billion; the market cap of American Electric Power (AEP) was $69.40 billion; the market cap of Sempra

V. Conclusion

The current system of utility ratemaking in the United States is deeply flawed, and results in significant and persistent above-market returns to investor-owned utilities and imposes significantly higher utility costs to ratepayers. The traditional cost-of-service approach to regulation systematically authorizes returns on equity that exceeds the true cost of equity, resulting in billions of dollars in excess profits annually. This over-earning creates direct wealth transfers from ratepayers to shareholders, exacerbates capital bias, delays the clean energy transition, and disproportionately impacts low-income households.

To ameliorate these problems, we propose that the capital costs for publicly regulated utilities be determined through a particular auction procedure, which we call Competitive Direct Equity (CDE). CDE offers a market-based alternative to the current employment of subjective and contested financial models for determining capital costs. Our CDE approach features a transparent auction mechanism that allows utilities to raise and price its capital at the lowest cost, thereby reducing prices for ratepayers. By aligning the return on equity with its true opportunity cost and requiring full distribution of earnings, CDE eliminates capital bias, ensures fairness to utilities, and reduces costs for consumers. We show that CDE is both practical and entirely lawful under applicable legal standards, as it fully adheres to the Supreme Court's requirement for rates to be sufficient to attract capital without being confiscatory.

As rates continue to rise and utilities prepare to invest trillions in critical infrastructure for the clean energy transition and to power AI and cryptocurrencies, particularly Bitcoin, adopting CDE will ensure that these inevitable investments are made efficiently, equitably, and take full advantage of the competitive pricing capabilities of the capital market. By leveraging competition to set utility returns, regulators can fulfill their statutory and constitutional duties to protect ratepayers in a fully transparent way while maintaining financial integrity and attracting necessary capital. Thus CDE is a practical, lawful, and superior alternative to the current system, offering a path forward to a more efficient and fair utility ratemaking process.

Energy (SRE) was $61.86 billion; the market cap of Exelon Corporation (EXC) was $48.98 billion; the market cap of Consolidated Edison (ED) was $41.05 billion; and the market cap of PG&E Corporation (PCG) was $39.91 billion.