

Riders, Trackers, Surcharges, Pre-Approvals and Decoupling: How Do They Affect the Cost of Equity?

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Overview

In an embedded cost rate case, the commission sets the utility's annual revenue requirement by predicting expenses, capital expenditures and the cost of capital for the upcoming rate year. The cost of capital comprises interest on debt and the cost of equity. Interest on debt is a known fact: the contractual interest rates on loans. Cost of equity is not a known fact; it is an estimate – of the return shareholders require to put and keep their money in the utility. The cost of equity is affected by a number of factors, including shareholders' risk of not recovering their money, of recovering it later than desired, and of receiving a return less than what they could earn elsewhere on investments of comparable risk. These shareholder risks flow from traditional ratemaking's central principle: that just and reasonable rates provide shareholders an opportunity, but not a promise, of earning the authorized return.

This gap between opportunity and guarantee has drawn the attention of legislatures and commissions. A mix of devices now exists to reduce one or more of these shareholder risks, by allowing utilities to recover specified expenditures with more certainty. These devices include riders, cost-trackers, surcharges, pre-approvals and decoupling. The first three authorize a utility to collect or refund specified costs (e.g., energy efficiency, renewable purchases, smart grid, nuclear power plants), as they increase or decrease, without filing a general rate case. Pre-approval occurs when the commission commits, prior to a rate case, not to question the reasonableness of a particular utility action or cost.² Decoupling, in its most common form, insulates fixed cost recovery from sales volumes. Each of these devices contrasts with traditional regulation, where (a) the commission addresses all expenditures (except perhaps fuel costs) in general rate cases only; and (b) capital expenditures receive approval for recovery only in rate cases filed after the associated asset entered commercial operation.

While these devices can reduce shareholder risk, and thus the cost of equity, the regulatory community is struggling with how to reflect that risk reduction in the authorized return of equity. The debate has become more oppositional than factual, as experts' arguments boil down to this bipolarity:

"Riders reduce risk, and reduced risk means reduced cost of equity; therefore we must lower the authorized ROE."

"The utility faces new risks, and the rider does no more than to mitigate those risks; therefore we should not lower the ROE."

In their written opinions, commissions consider both arguments sympathetically. But their decisions to adjust -- or not adjust -- authorized ROE often lack factual analysis specific to the

² For a detailed discussion of pre-approvals, see S. Hempling and S. Strauss, *Pre-Approval Commitments: When and Under What Conditions Should Regulators Commit Ratepayer Dollars to Utility-Proposed Capital Projects?* (NRRI 08-12 Nov. 2008), available at http://nrri.org/pubs/electricity/nrri_preapproval_commitments_08-12.pdf.

riders at issue. Settlements are frequent, their black boxes revealing no reasoning. See the Appendix for examples. Future rate case participants, the financial community and the public remain unclear about what effects these devices have, or should have, on authorized ROE.

While judgments about cost of equity are unavoidably subjective, the reasoning process can benefit from more fact-specificity, transparency and rigor. A reduction in authorized ROE due to riders and pre-approvals should be calibrated to the actual level of risk reduction. That calibration requires expert witnesses and commissions to identify, among other things, (a) the types of risks faced by the utility generally, (b) the specific risks reduced by the riders and pre-approvals, (c) the size of the rider-reduced risks relative to total risks, (d) the variances of these risks from the utility's traditional risks, and (e) the proportion of total earnings affected by the rider. Judgment on each of these facts is inevitable, but making those judgments openly, on facts specific to the judgments, will help avoid under- or over-adjusting the authorized return on equity.

The equation is straightforward: The clearer the government promise, the lower the risk for the expenditure subject to that promise; and, the lower expenditure's risk, the lower its associated cost of equity, relative to a situation of no government promise. The challenge is supplying the variables. This paper seeks to advance the conversation by identifying and organizing the relevant factors. With a logical scheme in place, financial experts can have a common analytical basis for better connecting specific riders with specific ROE effects.

Part One sets the legal background by describing the Constitutional and statutory boundaries on commissions= return on equity decisions.

Part Two explains that a rider's cost-of-equity effect depends on its context and content.

Part Three explains that a utility's riders should lower its ROE position within the zone of reasonableness only if its riders reduce risk more than the proxy companies' riders do.

Terminology note: The concepts in this paper apply to all risk-reducing devices: riders, cost trackers, surcharges, pre-approvals and decoupling. For brevity, the paper uses the term "riders" to refer to all these approaches.

I. Regulatory decisions on authorized return on equity are bounded by Constitutional and statutory principles

"... [N]or shall private property be taken for public use, without just compensation."

The Takings Clause of the Constitution's Fifth Amendment establishes a commission's obligation to shareholders when setting the authorized return on equity. When shareholders invest their funds in a regulated utility, their property is deemed "taken."³ The "just compensation" they must receive depends in part on their expectations at the time of the investment. *See Penn Central Transportation Co. v. New York*, 438 U.S. 104, 124 (1978) (listing factors involved in the Court's fact-based takings analysis, including the "economic impact of the regulation on the claimant and, particularly, the extent to which the regulation has interfered with distinct investment-backed expectations"). "The analysis is essentially ... ad hoc [and] factual." *Jersey Central Power & Light v. Fed. Energy Regulatory Comm'n*, 810 F.2d 1168, 1192 (D.C. Cir. 1986) (Starr, J., concurring) (quoting *Kaiser Aetna v. United States*, 444 U.S. 164, 175 (1979)).

These principles derive from two key Supreme Court passages addressing regulatory treatment of utility shareholder property. In *Bluefield Water Works & Improvement Company v. Public Service Comm'n*, 262 U.S. 679, 692 (1923), the Court stated:

"[A] public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public 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....The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties."

The *Bluefield* Court held that a rate of return of under six percent was too low. *Id.* at 693. The Court also emphasized that low and irregular income would hurt the utility's security prices, causing investors to demand higher rates of return. *Id.*

Twenty-one years later, after numerous complicated efforts at commission and courts to apply *Bluefield*, the Court distilled the inquiry to this sentence:

³ *See Error! Main Document Only. State of Missouri ex rel. Southwestern Bell Telephone Company v. Public Service Commission of Missouri, Error! Main Document Only.* 262 U.S. 276, 290 (1923) ("The thing devoted by the investor to the public use is not specific property, tangible and intangible, but capital embarked in the enterprise. Upon the capital so invested the Federal Constitution guarantees to the utility the opportunity to earn a fair return.") (Brandeis, J., concurring).

"Rates which enable [a] company to operate successfully, to maintain its financial integrity, to attract capital, and to compensate its investors for the risk assumed certainly cannot be condemned as invalid, even though they might produce only a meager return on the so called 'fair value' rate base."

FPC v. Hope Natural Gas Co., 320 U.S. 591, 605 (1944).

In the complicated world of commission proceedings, however, applying these principles and cases is not easy; there is no single-sentence solution. There is, instead, endless debate: "There is close to unanimous acceptance of the principle of comparable return for comparable risks, and little agreement on how it can be applied in any case." R. Pierce and E. Gellhorn, *Regulated Industries* (1999) at 136.

Recognizing that appropriate shareholder compensation can only be estimated, courts and commissions refer to a "zone of reasonableness." Within that zone, (a) any number can be lawful and (b) the commission can base its decision on its preferred policies. As Alfred Kahn put it: "The conception is that there is no single, scientifically correct rate of return, but a 'zone of reasonableness,' within which judgment must be exercised." *The Economics of Regulation: Principles and Institutions*, Vol. I (1988) at 42. Kahn then quoted Justice Oliver Wendell Holmes: "This is not a matter of economic theory, but of fair interpretation of a bargain. *Id.* at 43 (quoting *Cedar Rapids Gas Light Co. v. Cedar Rapids*, 223 U.S. 655, 669 (1912))."⁴

This legal terrain gives witnesses and commissions much room to maneuver. When we introduce riders, trackers, surcharges, pre-approvals and decoupling into the mix, the complexity of estimating cost of equity grows. There are many facts available to support many possible conclusions. The next two parts attempt to sort out those facts and possibilities.

II. A rider's cost-of-equity effect depends on its context and content

Analysis of a rider's cost-of-equity effect should start by placing the rider, and the associated risk, in context, and by understanding the rider's content. There are five critical questions:

- A. What is risk's role in determining total cost of equity?
- B. How important is the rider-reduced risk, within the utility's full universe of risks?
- C. How large is the rider-related expenditure, relative to the utility's total expenditures?
- D. What are the rider's specific features?
- E. Are there factors external to the riders that affect the company's risk situation?

⁴ *But see* the discussion of *Conway Corp. v. Federal Power Commission*, 426 U.S. 271 (1976), in Part III below, cautioning that a commission's discretion within the zone of reasonableness is not unbounded discretion.

Answering these questions will enable proponents and policymakers to base their decisions on facts rather than generalizations.

A. What is risk's role in determining total cost of equity?

Risk is a contributor to, but not the totality of, investors' reasons for demanding a return on equity. Return on equity has multiple purposes. As the *Bluefield* Court stated, return on equity assures confidence in the utility's financial soundness, supports the utility's credit, and enables it to raise the money sufficient to perform its obligations. The return on equity can achieve these objectives because it reflects opportunity cost: what investors could expect to earn by investing their capital in assets having comparable risk.

That risk accounts for only a part of required return is made explicit in the risk premium method for determining cost of equity. Risk premium analysis distinguishes among three contributors to cost of equity:

- (1) the risk-free rate, which is the rate of interest on default-free securities (that rate, in turn, consists of two components -- "an inflation-free (real) rate and a premium for anticipated inflation");
- (2) the corporate bond risk premium (reflecting business risks like default); and
- (3) the equity risk premium (equity has more risk than bonds because the corporation has no contract obligation to turn a profit for equity shareholders).⁵

The point is that equity risk -- the portion of cost of equity affected by riders -- is only part of total cost of equity. Return on equity witnesses from competing perspectives generally agree that decades of data reveal a rate spread between bonds and equities. As the risk-free rate or historic spread between bonds and equities vary over time, the percentage that the equity risk contributes to total risk likewise varies.

In sum: If a commission seeks to adjust the authorized ROE based on a reduction in the utility's risk, it first must determine what portion of the ROE is attributable to risk; then confine any reduction in authorized ROE to that component.

B. How important is the rider-reduced risk within the utility's full universe of risks?

The total risk component of authorized ROE represents the several shareholder risks: the risk of not recovering their investment, of recovering it later than desired, and of receiving a

⁵ D. Parcell, *The Cost of Capital: A Practitioner's Guide* (Society of Utility and Regulatory Financial Analysts 1997), at pp. 9-1 to 9.3.

return less than what they could earn on alternative investments of comparable risk; in short, the risk of not receiving the real return (i.e., adjusted for inflation) they expected when they invested in the utility. This risk arises from the following possibilities:

1. Actual sales volume is less than the level assumed by the Commission when setting the revenue requirement (absent decoupling). This can occur for multiple reasons -- a slow economy, structural changes like new energy-efficient building stock and appliances, customer behavior changes, unexpected outages.
2. Actual demand is less than the level assumed (for customers whose bills are based on demand). The potential causes are similar to those for sales volume.
3. Actual costs are higher than assumed. Possible causes include unanticipated general inflation, special inflation of input costs, labor productivity below assumptions, unanticipated regulatory costs, and unanticipated accidents and repairs. Capital expenditures, when they exceed those assumed in the authorized revenue requirement, are a distinct source of risk: Unless the regulator permits deferral of these expenditures (i.e., allowing the utility to argue for their recovery later), the time lag from cost incurrence to later rate case approval leaves a permanent gap in recovery and return.
4. Actual delinquencies are higher than assumed. Possible causes include an unanticipated economic slowdown and the loss of a major employer in the service territory.
5. The commission reduces revenues for reasons other than imprudence. The Supreme Court has held that prudence does not guarantee recoverability; a statute or commission can disallow prudent costs under the principles of "used and useful" and "utility bears the business risk."⁶ (A utility also faces the risk of nonrecovery due to imprudence or poor performance, but has no reasonable expectation of receiving compensation for this risk.)

Other than full decoupling, no rider or pre-approval reduces all of these risks. A rider usually aims at a specific expenditure, and a specific risk associated with that expenditure. Those details are discussed in Part II.D below.

⁶ *Duquesne Light Co. v. Barasch*, 488 U.S. 299, 307-16 (1989). The utility had abandoned construction of a nuclear plant. The Pennsylvania Commission had found that the decisions to begin constructing the plant, and later to abandon the plant, were prudent. Based on a state statute limiting cost recovery to plant that "is used and useful in service to the public," the Commission declined to allow full cost recovery. The Court rejected the utility's argument that the Constitution's Fifth and Fourteenth Amendments require recovery of prudent costs.

C. How large is the rider-related expenditure, relative to the utility's total expenditures?

The third step in analyzing a rider's effects is to determine what share of total earnings the rider addresses. A \$1 billion power plant plays a larger role in a utility's risk profile than a \$50 million property tax bill. Recovering only financing costs has less effect than recovering out-of-pocket costs. Some riders collect only a percentage of the costs of a project, with the remainder recovered when the project is included in base rates. The risk effect of regulatory lag – delaying or foregoing recovery of costs incurred until the commission determines recoverability – also varies with the affected cost's relative size. The importance of size thus has two implications.

First, one cannot generalize about riders' effects; scale matters. Second, when a rider-related reduction in ROE is appropriate, that reduction logically applies only to the portion of total utility expenditure affected by the rider. Transparent decisionmaking would (1) identify that ROE uniquely appropriate for the rider-related expenditure, (2) apply that ROE only to that expenditure, then (3) "roll it in" to the overall cost of equity. This approach would make the authorized return a weighted average: The non-protected part of the shareholder investment would receive the mid-range ROE; and the more-protected part would receive the lower-range ROE. Commission cases do not take these three steps. Except for sometimes assigning separate ROEs for gas and electric sections of the same utility, the cases skip the middle step, instead applying some basis point reduction to the overall ROE. This approach makes it impossible for the public and reviewing courts to assess the commission's reasoning.

Bluefield focused on three things: comparable earnings, financial integrity, and capital attraction. Applying a lowered ROE to all the investment, based on a reduced risk for only some of that investment, violates all three concepts.

D. What are the rider's specific features?

A rider allows the utility to recover a specified cost outside a general rate case. The premise for reducing authorized ROE is that cost recovery occurs sooner, and with more certainty, outside a rate case. That premise's accuracy depends on the rider's specifics. Riders have at least 6 dimensions, discussed next:

1. Nature of the rider-associated risk in relation to normal risks
2. Relation to pre-approval
3. Balanced or unbalanced?
4. Method of cost recovery
5. Timing issues
6. Extent of commission discretion

1. Nature of the rider-associated risk in relation to normal risks

Consider a hypothetical utility having a conventional generation mix, and an historically predictable, average rate of load growth. Assume now that it must address a previously unanticipated increase in load growth in the next ten years, when there is a high likelihood of expensive carbon regulation. The utility chooses to invest in its first nuclear plant. The plant's final construction cost will double the utility's book value. The pre-existing plants would continue in operation; the purpose of the new nuclear plant is to address the new load growth.

This nuclear plant is a new risk, different from the utility's historic risks; and it is a large risk. It makes the utility's risk profile riskier. All else equal, shareholders will demand higher compensation for this new, large, different risk.

Suppose the state legislature, prior to construction, commands the commission to establish a rider that guaranteed recovery of all prudent nuclear construction costs with a minimum of lag. In response, the commission approves a rider that (a) recovers Commission-approved estimates predicted for each next quarter, then (b) trues up at the end of that quarter, for every quarter through plant completion.

This rider will have eliminated much of the risk associated with nuclear construction. But it would not have addressed any of the risks associated with the utility's other capital costs and operations. The rider will have mitigated the cost of equity increase caused by the nuclear investment, but will not have reduced any of the pre-nuclear risk. In this hypothetical context it would be illogical to cite the rider as a reason to reduce the utility's authorized return on equity.

This hypothetical helps establish the following principle: If a rider does no more than cancel out a unique risk associated with a new activity, the rider's incremental effect on cost of equity is zero. The question is whether the new rider-connected activity, absent the rider, increases the company's pre-existing risk (i.e., the risk arising from non-rider activities); and then whether the rider eliminates that incremental risk. We can describe the new rider-connected activity with two dimensions:

Similarity or dissimilarity to existing activities: Expanding an existing transmission system by installing lines of voltage similar to existing lines, in terrain similar to existing terrain, is different from creating a new smart grid network consisting of interactive home meters and new central communications hardware.

Size relative to existing activities: Adding a 250 MW plant to a 5000 MW system is different from adding a 1500 MW plant to a 5000 MW system.

The combinations of these features create four possibilities:

1. similar activity, small relative to the company's size
2. similar activity, large relative to the company's size
3. dissimilar activity, small relative to the company's size
4. dissimilar activity, large relative to the company's size

Each of these situations represents a different change in company risk.

Example: One might view smart grid as a business activity different from traditional utility responsibilities -- different from mere meter installation and meter reading, and different from traditional distribution system management. It involves new technology (both hardware and software) and new business processes. It is costly, and it might not work. There is risk that even with prudent behavior, the investment will not produce benefits commensurate with costs. It is experimental. Adding these unusual risks to the company's normal risks would increase its cost of equity. A rider that eliminates these unusual risks, all else equal, would leave the company in its pre-smart grid investment position -- the pre-investment cost of equity, not a lower cost of equity.

2. Relation to pre-approval

A rider's risk-effect can vary with the nature of any associated pre-approval. Consider two of these variations: pre-approval with cost caps, and pre-approval with prudence review.

a. Pre-approval with cost caps

A pre-approval can take at least six forms, each having a different risk effect relative to the status quo:

- i. pre-approval of an action, with the appropriateness of costs determined later
- ii. pre-approval of a specific cost level, "hard-capped," where the utility must bear any overage but can keep the underage
- iii. pre-approval of a specific cost level, "hard-capped," where the utility must bear any overage but must provide any underage to the customers
- iv. variations of the preceding two options, where the utility and customers "share" in deviations according to pre-set percentages
- v. pre-approval of a specific cost level, "soft-capped," where the utility can request an increase in the cap but is not guaranteed. (A variation on the soft cap involves the Commission stating, in advance, that amounts above the soft cap will be recoverable only if the total does not exceed the cost of

the least cost prudent alternative. In this situation the company has performance risk.)

- vi. pre-approval of all prudent costs, unknown at the time of the approval, but whatever they may be

While a soft cap preserves the utility's right to seek more costs later, that right creates no more certainty than what the utility had without pre-approval. The effect of a soft cap is to guarantee recovery of the amounts up to the soft cap (which makes the term "soft cap" a complete misnomer; it's a hard floor, not a soft cap.) Provided the guaranteed amount is not different from what a prudent utility would have received at the back end, there is no shifting of risk and therefore no reduction in the cost of equity.

b. Pre-approval with prudence review

Does the rider make recovery automatic, or is recovery subject to a prudence or reasonableness review? If there is a prudence review, consider then the process and timing of that review. Does the review occur (a) before project commencement, (b) throughout the project, or only (c) after project completion? And is the "review" only an informal staff review and sign-off, reactive and unassisted by experts with experience comparable to the utility's experts; or is it a formal Commission review with expert testimony?

Assuming a front-end review that is no less rigorous than a back-end review, there is no reason to assume that business risk shifts from shareholders to ratepayers. The front-end review reduces investor uncertainty, but that investor gain does not come at the customer's expense. One exception is the extent to which the company was historically at risk for a "used and useful" disallowance; i.e., a situation in which an investment prudently chosen, planned and implemented turns out not to be needed. Statutes permitting, commissions have the legal authority to disallow such prudent costs. See *Duquesne Light Co. v. Barasch*, 488 U.S. 299 (1989). Commissions vary in their tendency to use this authority. Indeed one reason for pre-approval statutes is to encourage, authorize or require the Commission not to use such authority.

There is a legitimate debate over whether a front-end review is as rigorous as a back-end review. If there is a difference, with front-end review less rigorous, the result could be a shifting of risk (to customers) rather than a lessening of overall risk.

3. Balanced or unbalanced?

Reducing authorized ROE, relative to what it would be absent the rider, makes sense if the rider is more likely to ease a utility's cost recovery than to impede it. That depends on whether the rider is balanced or unbalanced. Consider two types of balance: balance relative to other accounts in the test year; and balance within the rider itself.

a. Balance within the pro forma test year

A utility with riders receives its revenue requirement from two sources: its riders, and its base rates. Some riders, such as fuel clauses, tend to be permanent. Other riders are temporary, expiring either because (a) their associated costs become fully recovered (plant construction is completed), or (b) the commission “rolls” the rider costs into base rates in the next general rate case. The question of balance discussed next applies to riders which remain in place, i.e., are not rolled into base rates, even as a general rate case sets new rates.

A rider's risk-effect depends on the extent to which it upsets the balance embedded in the test year revenue requirement. The purpose of a test year is to predict all costs and sales volumes for the rate year, account by account. Test year theory acknowledges that for any specific account, actual will vary from prediction; but for all accounts overall, overages will balance out underages. A rider removes an account from the test year, creating the possibility of imbalance.

Whether imbalance occurs, and its extent, depends on the nature of the associated account and the rider's design. A rider for recovery of new plant construction adds costs; it is unidirectional. Other cost riders, like fuel clauses, are bidirectional -- they can add or subtract from the revenue requirement, depending on how actual fuel costs compare to the base level embedded in the revenue requirement. Some riders pass through both costs and revenues credited to the cost of service, such as clauses that charge customers for the utility's power purchases but credit them for the utility's power sales. Still other clauses reduce the passed-through costs by an amount reflecting the commission's expectations for savings related to those costs. An example is a clause that recovers smart grid investments, net of operational savings expected from the investments. For these bidirectional riders, the question then is whether the probabilities for a positive or a negative effect are roughly equal; in that case the rider does not upset the test year's balance and does not shift risks from shareholder to the ratepayer.

Before one can generalize about whether a company's riders shift risk from shareholder to ratepayer, therefore, one must determine if the rider itself has a de-balancing effect on the test year.

b. Balance within the rider itself

Some riders accompany cost recovery with risk assignment to the utility. OGE's Smart Grid Rider Factor (SGRF) recovers smart grid investment, less an amount of predicted O&M savings from the investment. The company's full cost recovery thus depends on the investment's success. This type of rider acts as a performance-based rate formula with its own set of risks, rather than as an inherent risk-reducer.⁷

⁷ The SGRF has a true-up provision, but that provision relates only to the revenues collected to cover estimated costs; the guaranteed O&M reduction is a guarantee unaffected by

4. Method of cost recovery

Does the rider recover the costs based on customer consumption; that is, is it a per-kwh or per-mcf charge? If so, then absent a true-up feature, the rider will under- or over-recover costs as actual consumption varies from predictions, leaving both parties at risk. If, however, the rider has a true-up feature, then recovery is indifferent to consumption, lowering the risk of non-recovery. Alternatively, does the rider recover costs on a per-customer basis rather than on a per-consumption basis?

5. Timing issues

a. Existence and frequency of true-up: Is there a true-up, or is the utility bound by initial predictions? If there is a true-up, is it annual, monthly, or at completion of project? Is the true-up triggered only when deviations exceed some stated band?

b. Timing of recovery: Does the rider recover costs as they are incurred, e.g., monthly, or is there a lag, and if so, how much?

c. Growth over time: Is the amount of rider-protected costs fixed at the front end? Or can the recoverable costs grow over time, with inflation, with an index, and/or as the actual costs grow?

d. Time span: For how long will the mechanism be in place? That is, is it permanent, temporary, or subject to periodic review? Is it a one-time mechanism applicable only to a specific type of cost? Some riders expire with the next rate case, at which time the recovery of any remaining costs is no longer as certain as it was with the rider; instead, the cost goes into the general revenue requirement and is recoverable only to the extent that total costs are covered by revenues. Put another way, once the rider expires and the costs enter general rates, the costs are no longer insulated from the many risks that affect utility profitability. The shorter the time span, the lower the rider's risk-reducing effect.

e. Investment timeline: For a rider-protected investment, at what point in the investment timeline did it come into being? If the utility has almost completed the investment, then the rider's risk-reducing effect is less than if the spending was just beginning.

the revenue true-up. That is, at the end of the true-up period, actual costs will be compared to estimated costs; any over- or under-collection will be reflected in the fuel adjustment charge. The guaranteed O&M reduction calculation is separate; the company absorbs the O&M costs if it fails to meet the guaranteed level.

6. Extent of commission discretion

A legislative command to allow riders creates more certainty, and thus more risk reduction, than situations where the commission has discretion to approve or disapprove these measures. Legislative actions tend to be more permanent than commission actions, leading to more certainty about risk reduction.

7. Conclusion on the rider's specific features

A regulator needs to identify the specific risks associated with the rider-related cost, then determine how much the rider reduces those risks. Then we have to look at how this reduced risk compares to the utility's total risk. To use a simple example, if the riders and pre-approvals reduce Risk X by 10%, and Risk X represents 10% of the utility's total risk, on a weighted-average basis, then one would reduce the equity risk premium portion of the ROE by an amount equal to 1% [$.01 = (0.1)(0.1)$] times the equity risk premium. If the ROE before adjustment was 12%, consisting of a risk-free rate of 4% and an equity risk premium of 8%, the risk-adjusted ROE should be 11.92% [$0.1192 = 0.12 - (.08)(.01)$].

E. Are there factors external to the riders that affect the company's risk situation?

Viewing riders in isolation from other factors can distort a comparison between the rider and non-rider situations. Consider the roles played by a commission's rate practices and a utility's expenditure obligations.

1. Commission rate practices

Commission rate practices affect risk. Consider:

- a. A rider makes less of a difference to risk if general rate cases are filed more frequently, because the lag benefit is less.
- b. A rider makes less of a difference where the jurisdiction frequently uses deferrals to preserve the possibility of recovering past expenditures in prospective rate cases.
- c. A pre-approval in an environment where the commission applies intensive scrutiny to expenditure prudence makes more of a difference to risk than one in an environment where the commission is generally deferential to utility spending decisions.

Combining these factors in different ways creates different risk situations. Here are two poles:

- a. If the utility files frequent rate cases, and the commission allows deferrals and regularly approves cost recovery of utility expenditures, a rider has less risk-reducing effect because the risk is already relatively low.
- b. If the utility files infrequent rate cases, and the commission limits deferrals while subjecting expenditures to intensive review, a rider has more risk-reducing effect because the pre-rider risk is relatively high.

2. Utility's expenditure obligations

A company chooses utility status voluntarily, but once it does it is no longer a volunteer. It has an obligation to serve: an obligation to make all expenditures necessary to meet load, present and future. Investors' willingness to put their money in a particular utility is affected by that utility's future investment needs.

Thus a utility facing obligatory capital expenditures faces more risk than a utility with sufficient resources for the foreseeable future. And if those capital expenditures will become necessary before the next rate case, those expenditures are at risk of later disallowance. These risks associated with future expenditures are not mitigated by riders associated with current expenditures; yet the future risks affect the cost of equity. As Pierce and Gellhorn state, "the risks and rates of return relevant to determining the appropriate rate of return to allow a regulated firm [to earn] in the future are the *future* risks and rates of return on comparable investments." R. Pierce and E. Gellhorn, *Regulated Industries* 139 (1999) (emphasis in the original).

Future risks involve not only construction expenditures, but business strategy. Utilities face an uncertain future: What form will carbon pricing take? Will nuclear power solve its safety problems? Will there be a skilled utility workforce when today's veterans retire? Will smart grid address consumers' needs? Their obligation to serve requires utilities to respond to these uncertainties by taking actions with uncertain results. Failure to move in some new direction means exposing the company to future pollution regulation, shortages in skilled labor, and customer demands for more ways to control their consumption. Inaction poses no less risk than action.

Given the unavailability of uncertainty, it makes sense to find ways to manage that uncertainty. Accompanying new uncertainties with new means of risk reduction does not necessarily lower the total risk of the company below what it was before the risks arose; it may only offset the new risk the company takes on.

III. A utility's riders should lower its ROE position within the zone of reasonableness only if its riders reduce risk more than the proxy companies' riders do

Three methods for estimating a utility's cost of equity -- discounted cash flow, capital asset pricing model and comparable earnings -- use proxy groups. The search for proxies involves identifying companies with similar risk profiles. Each method produces a zone of reasonable ROEs. If an analyst is going to adjust a utility's position within that zone based on the utility's riders, she must examine the riders of the proxy group's members.

If the proxy group had riders similar to the utility at issue, the risk reduction effect would already have been captured in the zone of reasonableness produced by the proxy companies. There would be no logical basis for moving the utility downward. The problem is that what is "similar" itself involves multiple judgments. The dimensions of similarity include all the factors discussed in Part II above: type of cost, type of risk, relative size, balancing effect, method and timing of cost recovery, extent and timing of prudence review, and type of true-up mechanism. In particular, if a proxy group member had decoupling of revenues from profits, it would have reduced the risk of consumption risk to near zero. Alabama Power has a formula rate, meaning that its entire revenue requirement is trued up to ensure it receives the authorized ROE.

A careful comparison of utility riders to proxy group riders avoid ROE adjustments that are unsubstantiated. But that raises a knottier issue: Who has the burden to make the comparison? The utility, such that failure to show similarity means its authorized ROE is reduced? Or the intervenors, such that failure to show that the utility's riders reduce risk more than the proxy groups' means no downward adjustment?

Simply picking a side to bear the burden does not solve the problem, because the commission has its own burden: It must set a revenue requirement, and it must support its decision with substantial evidence regardless of who has what burden. Ratemaking is not like a criminal trial, where the burden of proof assigns the risk of nonpersuasion, thereby relieving the court of having to find the ultimate fact. The prosecution has the burden of proving guilt beyond a reasonable doubt. Failure to prove guilt beyond a reasonable doubt means a failure to persuade. Since the prosecution bears the risk of nonpersuasion, the prosecution loses, resulting in acquittal. The trier of fact does not have to find the ultimate fact, i.e., whether the accused committed the crime. It simply finds the burden unmet, and the accused goes free.

Ratemaking does not work that way. For the authorized ROE, the commission has to pick a number, based on substantial evidence. The commission cannot use burdens to avoid its obligation to find facts. The commission cannot make either of the following statements:

"The zone of reasonableness is 9.5% to 11.0%. Because the utility failed to show its riders were similar to those in the proxy group, we pick 9.5%."

"The zone of reasonableness is 9.5% to 11.0%. Because the intervenors failed to show that the utility's riders reduced risk more than those in the proxy group, we pick 11.0%."

Unable to avoid its own evidentiary obligation by assigning the risk of nonpersuasion, a commission should require all parties to address the question. This approach supports the goals of clarity and transparency. As with any evidentiary contest, the prize will go to the party who works hardest to prove its point. The party that systematically collects, analyzes and compares rider information for the utility and the proxy group will be more persuasive than the party who generalizes. This approach gives the commission a richer, more thoughtful record for its decision.

One might argue that as long as the authorized ROE is within the zone, a commission has full discretion to place it anywhere. That is incorrect. A commission does have discretion within the zone, but it cannot exercise that discretion arbitrarily or in disregard of other statutory principles. The Federal Power Commission learned this lesson the hard way, in *Conway Corporation v. F.P.C.*, 426 U.S. 271 (1976). Captive wholesale municipal customers protested their utility wholesale rate hike, citing "price squeeze." The wholesale customers were also the utility's competitors for retail load. They asserted that the utility's wholesale rate hike was an attempt to squeeze them out of competing for industrial retail load. They said the FPC should take into account this anti-competitive effect when determining where, within the zone of reasonableness, to set the utility return on equity. The FPC declined, asserting that retail rates fell outside its jurisdiction over wholesale rates.

The Supreme Court reversed. In exercising its discretion within the zone of reasonableness, the FPC was not allowed to ignore anticompetitive effects: "The Commission must arrive at a rate level deemed by it to be just and reasonable, but in doing so it must consider the tendered allegations that the proposed rates are discriminatory and anticompetitive in effect." 426 U.S. at 278. While the FPC had no authority to order a change in retail rates, it did have the authority to set the jurisdictional (wholesale) rate at a lower level within the zone of reasonableness, so as to remedy any discriminatory or anti-competitive effects of a higher rate on the retail market.

Conclusion

Estimating cost of equity requires multiple judgments. Rarely do expert witnesses agree on methods, data, assumptions, proxies and groups. With luck, their zones of reasonableness will overlap, allowing a commission to base its decision on the expert evidence while minimizing the risk of judicial review.

When statutes and rules vary from traditional test year treatment, by introducing riders, trackers, surcharges, pre-approvals and/or decoupling, the estimation difficulty grows. Proxy groups become difficult to use because comparability -- the lodestar in the search for cost of

equity – becomes elusive. The number of variations, including their possible combinations and interactions with each other and with external factors, nears infinity.

Facing these difficulties, it is tempting to "pick a number" large enough to be tangible and small enough to avoid appeal. This paper, while sympathetic to commission workload, recommends that witnesses and decisionmakers identify and weigh as many relevant factors as possible before choosing a number. Doing so will advance the goals of transparency, precision and credibility.

Appendix

Examples of Cases Addressing Rider Effects on Authorized Return on Equity

Southwest Gas Corporation, 277 P.U.R.4th 182, 2009 WL 3807620 (Nev. PSC 2009)

Southwest's rate hike request included a proposal for decoupling revenues from costs. The utility proposed a limited, 10 basis point reduction in ROE because the majority of utilities in the proxy group had weather or conservation mitigation measures. The utility also described a survey of 26 gas decoupling programs, arguing that the programs had sufficient variation in the resulting revenue stability to allow comparison. The study showed that "[o]f the 26 utilities, 17 utilities made no explicit acceptance or rejection of an ROE reduction." (Commission summary of Southwest's statements). The study further showed, according to the Commission's summary, that "ROE reductions that have accompanied decoupling range from 0 basis points to 25 basis points with a simple average reduction of 12.5 basis points." Southwest also cautioned that not every reduction in shareholder risk is an increase in customer risk.

The Commission Staff recommended a decoupling-based reduction of 20 basis points (from a base of 10.20 percent). Relying on other commission decisions is problematic, Staff argued, because they address multiple issues at once.

The Bureau of Consumer Protection recommended a 50 basis point reduction, because, in the Commission's paraphrasing, it "represents less than three percent of the revenue stream being guaranteed by customers." The BCP noted that Southwest would benefit from full decoupling, whereas some of the proxy companies had only weather adjustments; and that its 50 basis point proposal did not account fully for the difference between full and partial decoupling.

After finding a 10.40% ROE reasonable, the Commission reduced it 25 basis points to 10.15% to account for decoupling. The Commission criticized the utility's reliance on other states' practices because the "do not inform the Commission as to the meaning and interpretation of the statute in this jurisdiction. Southwest was unable to distinguish between Nevada's decoupling mechanism and that of other states." Other than stating that its 25 basis point reduction was within the range proposed by Staff and BCP, the Commission did not explain how it arrived at the number.

California-American Water Service Co., 2007 WL 1434942 (Cal.P.U.C. 2007)

California-American Water Company and the Division of Ratepayer Advocates (DRA) negotiated a proposed Water Revenue Adjustment Mechanism (WRAM) and Modified Cost Balancing Account (MCBA). The Commission stated that if it approved these two mechanisms, their risk reduction would require a 50 basis point reduction from 10.0% ROE to 9.5%. (DRA had recommended a reduction of 156 to 328 basis points while Cal-Am recommended no adjustment.) The Commission called the plan's risk reduction "substantial," citing the guaranteed

cost recovery authorized to protect the utility's fiscal health in light of state effects to increase water conservation and the historic variability of annual water usage in the utility's service area. The Commission arrived at the 50 basis point figure after comparing the WRAM and MCBA to previous cases and adjustments.

Potomac Electric Power Company, 258 P.U.R.4th 463 (Md.P.S.C. 2007)

PEPCO asked the Maryland Commission for a rate adjustment that included an 11% ROE and a Bill Stabilization Adjustment (BSA). The BSA would decouple revenues from sales, and smooth out weather-induced bill differences. PEPCO's witness had proposed an 11.0% ROE, reduced to 10.75% due to the BSA. People's Counsel's witness proposed 9.78%, reduced to 8.97% to reflect the BSA.

The Commission adopted the BSA, found a 10.5% ROE to be reasonable, and then lowered the ROE by 50 basis points due to the BSA. The Commission explained:

"[Decoupling] will provide insurance that Pepco will achieve its level of revenue approved in this case. Thus, Pepco is less risky with the BSA than without it. In response to this decline in risk, all parties recognize the appropriateness of reducing Pepco's return on equity by some amount. The Commission rejects both the minimal reduction of basis points proposed by the Company, and the much larger reductions proposed by People's Counsel. Given that approval of the BSA will result in improved cost recovery by Pepco, the Commission shall reduce Pepco's ROE by 50 points, to 10 percent."

Baltimore Gas & Elec. Co., 288 P.U.R.4th 25, 2011 WL 1405143 (Md. PSC 2011)

Baltimore Gas & Electric proposed a rate increase with an ROE of 11.65%. The proposal included a decoupling mechanism, called "Rider 25." The mechanism decouples income from changes in customer usage, including changes caused by energy efficiency and conservation programs. The utility proposed no ROE adjustment based on Rider 25, arguing that (a) decoupling mechanisms were already factored into the proxy group; and, alternatively (b) the volumetric risks on both sides of the approved mechanism offset each other. The Commission summarized the BGE expert's position as follows:

Dr. Avera claimed that there was no specific support for an ROE decoupling adjustment of 50 basis points. He argued that investors already have factored the impact of BGE's decoupling mechanism into their calculations, making a further adjustment unnecessary. In addition, Dr. Avera argued that it was inappropriate to adjust utility rates based on just one risk factor, such as revenue decoupling.

Another BGE witness, according to the Commission, “stated that ‘...decoupling eliminates the upside associated with volumetric risks as well as the downside.’ He also claimed that the effects of revenue decoupling were already incorporated into the authorized returns of Dr. Avera's proxy groups.”

The Commission described the Staff witness's approach as follows (footnotes omitted):

Mr. Schultz calculated that Rider 25 provided 3.8% of the Company's distribution revenues during the test year and, by Staff's calculation, bolstered the Company's overall rate of return during the test year by 85 basis points. He therefore considered a 50 basis point reduction to BGE's electric ROE for the effects of decoupling to be reasonable. As Mr. Schultz determined that his gas proxy group already incorporated the effects of decoupling, he did not apply a reduction to his gas ROE.

The People Counsel witness also testified that Rider 25 justified a 50% basis point reduction.

The Commission ordered an unadjusted ROE of 10.35%; then adjusted the rate downward by 50 basis points to 9.85% to account for Rider 25:

We conclude further that the electric ROE should be adjusted downward by 50 basis points to account for the risk-reducing effect of the Rider 25 bill stabilization adjustment. Return on equity is closely linked to risk. It is a truism that the higher the risk, the higher the potential return. BGE is a monopoly distribution-only utility with a risk-reducing mechanism in Rider 25. As such, it cannot have protection against revenue volatility without that protection being reflected in its return on equity. BGE's Rider 25 increases the predictability of BGE's revenues, thereby significantly reducing its financial risk. It would not be reasonable for the Commission to ignore this fact in establishing BGE's ROE. We view this adjustment as simply a way to more accurately gauge and represent BGE's genuine level of risk.

The Commission also rejected BGE's view that the proxy group's ROEs already reflected similar riders:

BGE witness Avera offered that his utility proxy group companies already reflect reduced ROEs for revenue decoupling mechanisms, and that BGE's ROE should not be further reduced. This assertion, however, is not supported by the record evidence in this case. Rather, Dr. Avera's own testimony shows that only 4 out of the 13 companies in his utility proxy group have a revenue decoupling mechanism (termed 'RDM' by Dr. Avera). Further, many of the companies in his proxy group receive a majority of revenue from generation; thus decoupling applied to their distribution business would have a smaller impact on overall ROE than in

BGE's case. There would be an even smaller and less material effect on the electric ROE if the RDM were applied only to their gas distribution business, where RDM is much more common.