

In essence, there is no difference between the capital charge and operating expenses, depreciation, and taxes. Each is a part of the current cost of supplying the service; and each should be met from current income. When the capital charges are for interest on the floating debt paid at the current rate, this is readily seen. But it is no less true of a legal obligation to pay interest on long-term bonds, entered into years before the rate hearing and to continue for years thereafter; and it is true also of the economic obligation to pay dividends on stock, preferred or common.⁶⁰

As used by Justice Brandeis and by most commissions in recent years, the term "cost of capital" may be defined as the annual percentage that a utility must receive to maintain its credit, to pay a return to the owners of the enterprise and to ensure the attraction of capital in amounts adequate to meet future needs. Mathematically, the cost of capital is the composite of the cost of the several classes of capital used by a utility — debt, preferred (and preference) stock and common stock (par value plus earned and capital surplus) — weighted on the basis of an appropriate capital structure. If short-term debt has become a permanent part of a utility's financing, it is included.⁶¹ Tax deferrals, resulting from the pre-1971 investment tax credit and/or accelerated depreciation, are included at a zero cost rate (unless they have been deducted from the rate base); the job development tax credit is either included in common equity or as a separate item (at the overall cost of capital).⁶² A typical capital structure is shown in Table 9-3, illustrating the determination of an overall cost of capital of 10.12 percent. It should be noted that unless a utility has significant investments in nonutility assets, its invested capital should approximate its original cost rate base, except for investment in CWIP.⁶³

In applying the cost of capital standard, commissions face numerous and difficult problems "which almost defy solution."⁶⁴ Two major and four related problems are analyzed below: (1) appropriate capital structure, (2) allowable cost of senior capital and common equity, (3) incentive to efficiency, (4) "earnings erosion" during periods of inflation, (5) "gradualism" during volatile markets, and (6) disallowances and regulatory risk.

Capital Structure

The initial step in estimating the overall cost of capital involves the appropriate capital structure. There are two important issues. First, the traditional theory of business finance holds that the average cost of capital to a firm varies with the capital structure upon which it is based.⁶⁵ The interest rate on debt is normally lower than the cost of equity capital.⁶⁶ Consequently, within limits determined by such factors as the risk of a business, the overall cost may be somewhat lower when the debt-equity ratio is high than when the debt-

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TABLE 9-3
Estimated Cost of Capital

	Percentage of Capital Structure	Annual Cost	Weighted Cost
Long-term debt	41.25%	9.87%	4.07%
Short-term debt	2.13	9.00	0.19
Preferred stock	7.22	8.92	0.64
Common stock	34.71	14.00	4.86
Unamortized investment tax credits:			
Pre-1971	1.14	0.0	—
Post-1971	3.51	10.12	—
Deferred federal income taxes ..	<u>10.04</u>	0.0	<u>0.36</u>
Overall cost of capital	100.00		10.12

equity ratio is low. Given this theory, some argue that the regulatory commissions should base their cost of capital estimates on what they consider an "ideal" or "typical" capital structure, without regard to the actual capitalization of a particular utility being considered. Others argue that cost estimates should be based upon either the actual capital structure or the structure that is expected in the near future.

Second, when the utility under consideration is a subsidiary of another company, whose capital structure should be used — that of the subsidiary or that of the consolidated system? The widespread existence of holding companies in the public utility sector, plus the trend toward diversification, makes this an important consideration in many cases.

Actual versus Hypothetical Capital Structure. Locklin has argued that most commissions "disregard actual capital structures and set up an ideal or normal structure for the purpose. To do otherwise would burden the public with the higher costs of obtaining capital that result from a capital structure that is something less than ideal, and may, in fact, be quite unsound."⁶⁷ And Rose argues: "When a commission in determining cost of capital disregards the actual capital structure or a capital structure proposed by management it is no more invading the domain of management than when it disregards unreasonable expenses for labor, fuel, or other productive factors in prescribing rates."⁶⁸

Others maintain that in normal circumstances the actual or planned capital structure should be used in computing the cost of capital. As discussed in Chapter 6,⁶⁹ a utility's existing capitalization may well have resulted from sound and economical decisions when made, although a different structure

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might attract capital at a lower cost at the time of a rate case. While hindsight is often superior to foresight, financial decisions must be made on the basis of judgment of present and future conditions.⁷⁰ Moreover, as Bonbright has argued, "the use of a hypothetical or 'typical' capitalization substitutes an estimate of what the capital cost *would be* under nonexisting conditions for what it *actually is* or *will soon be* under prevailing conditions."⁷¹ Unless the rate of return to equity capital is adjusted upward, and it seldom is, the utility is forced to adopt the hypothetical debt ratio to earn its allowed rate. But if the hypothetical debt ratio is significantly higher than the actual debt ratio, it may take several years of financing exclusively by means of debt to attain the higher ratio. During this period, the utility is unable to realize the rate on equity found to be required. Further, issuance of securities is under the control of the vast majority of the regulatory commissions, so that there is a check on unsound financing. "It seems, then, that it is economically sound to leave with management the decision as to proper debt ratio, at least within that area where the directors are not usurping or defaulting on their duties as directors."⁷²

During the 1950s and 1960s, many commissions sought an approximation of an ideal capital structure through the use of a hypothetical capitalization, particularly in telephone cases. As explained by the Alabama Supreme Court:

The ideal capital structure would allow a debt-equity ratio in amounts that the company would get its full benefit in the amount of debt capital, and yet not have the debt component so high as to discourage prudent investors. This ideal capital structure is not static. However, many commissions and courts for rate-making purposes have concluded that a debt-equity ratio of 45 percent debt 55 percent equity most nearly approximates a proper debt-equity ratio.⁷³

The Massachusetts commission thus rejected both the actual capitalization (62 percent debt) and one proposed by the company (35 percent debt), adopting a hypothetical capital structure of 45 to 50 percent debt. The commission pointed out that the company's actual capital structure had a debt ratio that was too high, while the proposed ratio represented an inefficient capital structure since it did not include an amount of debt that could be reasonably assumed by the company.⁷⁴ The Mississippi commission, in a 1956 decision, held:

Southern Bell's capital structure during the test period, with an average debt ratio of 21.7 percent, is imprudent and uneconomical, and imposes an unjust and unwarranted financial burden on the telephone subscribers. For the purpose of assessing the priority of the company's intrastate rates which prevail during the test period, we have reformed the capital structure on the basis of a debt ratio in the range of 45 percent to 50 percent, which we find is prudent, fair, and equitable.⁷⁵

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And the District of Columbia commission rejected a telephone company's actual capital structure of 15 percent debt and 85 percent equity as being unrealistic, adopting for rate-making purposes a hypothetical capital structure of 40 percent debt and 60 percent equity. "In our judgment," said the commission, "this capital structure, when applied to the cost of debt and equity, will amply afford sufficient earnings to pay a reasonable dividend and allow an increment for surplus."⁷⁶

During this same period, other commissions adopted the actual capitalization. The New York commission declared that to disregard the "actual historic structure" created with the commission's approval "would unsettle investors" and remove from management control over the capital structure. It added that "having approved a company's capital structure . . . the company and the public have the right to rely upon our using the capital structure which we have approved as the basis for determining its rate of return."⁷⁷ The commission later indicated, however, that it would disregard the actual capital structure when it was "wasteful."⁷⁸ The Colorado commission said that it "could adopt a hypothetical structure for rate making in the event that applicants' actual financial structure is not in the long run public interest. . . keeping in mind that responsibility for financial decisions rests with management."⁷⁹ The Arizona commission rejected the use of hypothetical capital structures on the grounds that they involve "pure speculation," while actual capitalizations are "more realistic."⁸⁰ The Florida commission held that capital structures "fall within the prerogatives of management" and that "invasion of the field of management in such a sensitive area is justified only when the public interest requires the exercise of extreme measures for its protection and benefit."⁸¹ Finally, the FCC rejected the adoption of a hypothetical capital structure for AT&T in a 1967 decision, but noted that in fixing the allowable rate of return it would take into account the "extraordinary amount of risk insurance respondents have given its stockholders by its low debt ratio policy."⁸²

Debt ratios began to rise during the late 1960s and early 1970s, and the financial condition of the public utility sector began to deteriorate. It became the common practice to use actual or expected capitalizations; actual where a historic test year is used, expected when a projected or future test year is used.⁸³ The objective, in short, shifted from minimization of the short-term cost of capital to protection of a utility's ability "to raise capital at all times. This objective requires that a public utility make every effort to keep indebtedness at a prudent and conservative level."⁸⁴ A hypothetical capital structure is used only where a utility's actual capitalization is clearly out of line with those of other utilities in its industry or where a utility is diversified.⁸⁵

Consolidated Capital Structure and Double Leverage. Where a utility is a wholly owned subsidiary that obtains its equity capital through its parent corporation, commissions commonly use the capital structure of the consolidated system.⁸⁶ When (1) no substantial minority interest exists and (2) risks

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reduced rapidly or gradually? In arguing for the latter, the Virginia commission said in a 1986 decision:

The commission has no control over a rapidly changing economy or volatile interest rates. We do, however, have the power to regulate authorized returns on equity. The commission feels that stability in the cost of equity is in the interest of utilities, ratepayers and the economic environment of the commonwealth. When interest rates soared and the prime rate exceeded 20%, we did not allow exorbitant authorized returns which would have exacerbated the situation. We allowed returns to gradually increase, recognizing the trends of the day but avoiding extreme reaction. Recently interest rates have plummeted. Our appropriate reaction should not be to cut authorized equity returns drastically, but to once again gradually move in the direction of the trend. Our goal is a fair and stable environment which will allow Virginia's utilities to better plan for the future and continue to provide economical, reliable service.¹⁸²

Given volatile markets, combined with a trend toward greater reliance upon market forces, the issue of gradualism cannot be ignored.

Disallowances and Regulatory Risk

The business and financial risks of public utilities have been discussed at length for many years. So, too, has regulatory risk been mentioned on several occasions, particularly as it relates to the impact of regulatory on the cost of capital.¹⁸³ But the huge prudence disallowances of more recent years, combined with the Supreme Court's *Duquesne* decision,¹⁸⁴ has resulted in a new debate over regulatory risk.

In late 1982, Pennsylvania enacted a statute (Act 335) that prohibited the inclusion of "the cost of construction or expansion" by an electric utility in rate base or rates "until such time as the facility is used and useful in service to the public."¹⁸⁵ A month later, the Pennsylvania commission issued an order permitting Duquesne Light to amortize a \$35 million expenditure for preliminary construction costs on four canceled nuclear plants.¹⁸⁶ On appeal, the Pennsylvania Supreme Court reversed and remanded the order to the commission. In *Duquesne*, the Supreme Court upheld the constitutionality of the Pennsylvania statute (the rate order was not at issue) and stated that it based its decision on the "teachings" of *Hope*.¹⁸⁷ For present purposes, the important part of the decision concerns the Court's recognition of regulatory risk: "The risks a utility faces are in large part defined by the rate methodology because utilities are virtually always public monopolies dealing in an essential service, and so relatively immune to the usual market risks."¹⁸⁸ The Court assumed, however, that such risk had been taken into account in setting the allowed rate of return.

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Further, the Court stated that "serious constitutional questions" would be raised if a state "arbitrarily" switched back and forth "between methodologies in a way which required investors to bear the risk of bad investments at some times while denying them the benefit of good investments at others."¹⁸⁹ The retroactive switch in regulatory methodology in the instant case did not present a question of "constitutional magnitude" because the "end result" of the switch was "slight" and "well within the bounds of *Hope*, even with total exclusion of the CAPCO costs."¹⁹⁰ Said the Court:

Duquesne was authorized to earn a 16.14% return on common equity and an 11.64% overall return on a rate base of nearly \$1.8 billion. Its \$35 million investment in the canceled plants comprises roughly 1.9% of its total [rate] base. The denial of plant amortization will reduce its annual allowance by .4%.¹⁹¹

In a careful analysis of the Court's *Duquesne* decision, Kolbe and Tye conclude:

The critical point is that the rate base, previously a largely known quantity not subject to significant risk, became a highly uncertain quantity, and the direction of movement in asset values was strictly downward. Under the new rules, investors might not be allowed to earn a return on all of the capital invested, because some of the investment might not be allowed in the rate base. Good outcomes, however, were still treated under the old rules: investors expect a return equal to the cost of capital. Thus, the new rules of rate regulation apparently approved by the *Duquesne* decision create asymmetric returns for utility investors analogous to those for junk bondholders.¹⁹²

"The key economic question posed by *Duquesne*," Kolbe and Tye state, "is how investors can be appropriately compensated for such risks. Four possible answers are:"

1. Increase the allowed return on investment to an amount greater than the cost of capital, by addition of a "regulatory risk premium" to restore a balanced payoff structure;
2. Eliminate asymmetric payoff distributions by changing regulatory practices;
3. Add a compensating cost of service item, akin to a fee or insurance premium for provision of a risky service, to the revenue requirement; or

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4. Adjust another cost recovery item by an amount sufficient to offset the asymmetry.¹⁹³

Opinions over the proper compensation mechanism may differ, but it is clear that the issue can no longer be ignored.

Rate of Return: "Between Scylla and Charybdis"

Justice Holmes once commented that the rate regulation involved a middle course, determined by judgment and fairness, "between Scylla and Charybdis." As he explained:

On the one side, if the franchise is taken to mean that the most profitable return that could be got, free from competition, is protected by the Fourteenth Amendment, then the power to regulate is null. On the other hand if the power to regulate withdraws the protection of the Amendment altogether, then the property is nought. This is not a matter of economic theory, but of fair interpretation of a bargain. Neither extreme can have been meant. A midway between them must be hit.¹⁹⁴

The search for this midway position involves consideration of many complex factors. Despite significant advances in finance theory, the method of determining a fair rate of return is far from settled. The frequently used cost of capital standard is a beginning and represents a significant improvement over the earlier commission practices of basing the allowable return on a customary or traditional figure. But such a return is a minimum. It "determines a floor, below which rate of return is so low as to become confiscatory. . . . If a utility cannot recover its capital cost, it cannot continue indefinitely to serve the public and, per se, present investors in the enterprise will suffer the loss of all or a part of their investment."¹⁹⁵

Yet, while there have been substantial advances in techniques for estimating the cost of capital, the fact remains that regulation

has been unable to respond promptly or adequately in recent years to changing economic conditions, particularly the impact of inflation and higher energy costs. Regulation of public utility earnings has not been efficient because the commissions, as well as utilities, are identified as responsible for rapid price increases. Regulatory agencies are understandably sensitive to the loss of public esteem which follows from even cost-justified rate increases. Perhaps only a broader public understanding and acceptance of relevant economic criteria will alleviate this problem.¹⁹⁶