

Society of Utility and
Regulatory Financial Analysts



THE COST OF CAPITAL – A PRACTITIONER’S GUIDE

BY

DAVID C. PARCELL

**PREPARED FOR THE SOCIETY OF UTILITY
AND REGULATORY FINANCIAL ANALYSTS
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Author’s Note: This manual has been prepared as an educational reference on cost of capital concepts. Its purpose is to describe a broad array of cost of capital models and techniques. No cost of equity model or other concept is recommended or emphasized, nor is any procedure for employing any model recommended. Furthermore, no opinions or preferences are expressed by either the author or the Society of Utility and Regulatory Financial Analysts.

individually exert a perceptible influence on price. Under such a competitive framework, a firm can neither secure the entire market nor utilize such a position to exploit consumers.

As the American business structure developed large, integrated enterprises, however, it became apparent that competition would not always restrict the size of business firms because the unit costs of production frequently declined as the size of the firm increased. Since there are few constraints on the size of a utility, a single company can serve an entire market in a cost-minimizing manner. Public utilities provide an example of an industry where competition is not deemed to be the most efficient model. Moreover, because of economies of scale, entry into a market by a competing utility is exceedingly difficult and costly and, if accomplished, would result in an unnecessary duplication of facilities that probably would result in an inefficient use of society's resources. On the other hand, public utilities have historically possessed an inherent monopolistic capability to exploit consumers, a capacity not present in the competitive situation.

In the absence of restrictions on size and the ensuing potential for the development of uncontrolled economic power and because of the essential nature of the services provided, it was recognized that the regulation of public utilities would be in the public interest (Schwartz, 1973, 9). So that society could reap some of the benefits of economies of scale while preventing the economic power of utilities from being used to the detriment of society, a consensus developed which urged government control of the rates and services provided by public utilities. In a sense, the "visible hand of public regulation was (created) to replace the invisible hand of Adam Smith in order to protect consumers against exorbitant charges, restriction of output, deterioration of service and unfair discrimination" (Adams, 1958, 527). It was this philosophy that provided the basis for the creation and development of the public utility regulatory process in the United States (Ileo and Parcell, 1973).

Principal Activities of Regulation

The regulation of utilities has traditionally comprised the following four activities (Phillips, 1993):

1. **Revenue Requirement Determination.** Regulatory agencies have the authority and responsibility to determine the fair revenue requirement which utilities are allowed the opportunity, but not a guarantee, to earn.
2. **Control of Entry Into Market Areas.** Utilities are franchised by government and have the right to eminent domain. As a result, they are free from direct competition to a substantial degree.
3. **Requirement to Provide Services.** Utilities are required to provide adequate service to the entire public on demand.
4. **Quality of Service.** Regulatory agencies establish standards of service related to the quality and conditions of service.

The function of the cost of capital concept, and of this manual, is to focus on the first activity - the determination of revenue requirement.

Objectives of Regulation

As indicated above, regulation of public utilities reflects a belief that the competitive mechanism alone cannot be relied upon to protect the public interest. Essentially, it is theorized that a truly competitive market involving utilities cannot survive and, thereby, will fail to promote the general economic welfare. But this does not mean that regulation should alter the norm of competitive behavior for utilities. On the contrary, the primary objective of regulation is to produce market results (i.e., price and quantity supplied) in the utility sectors of the economy closely approximating those conditions which would be obtained if utility rates and services were determined competitively. Although it is well recognized that no form of economic regulation can ever be a perfect substitute for competition in determining market prices for goods and services, there is nearly unanimous acceptance of the principle that regulation should act as a substitute for competition in utility markets. Thus, it is the results achieved in the competitive model which serve to set the objectives of regulation and the tests against which the effectiveness of regulation must be judged (Phillips, 1993, 173).

Under competitive conditions, as a result of the interaction of producers and consumers, prices tend to a level equivalent with long-run marginal and average cost, where cost is defined to