3. Cost of Capital

Q. Let's turn to the next part of your Cost of Capital testimony. How can the cost of equity be estimated?

A. There are at least two major approaches used to estimate the cost of equity capital which have historically been used in regulatory proceedings—the market approach and the comparable earnings approach. In the former approach the analyst attempts to calculate the rate of return that utility investors require on the equity funds they place at the utility's disposal using data from securities markets. In the latter approach, the analyst attempts to derive the utility's cost of capital from published data concerning the returns that firms earn on the equity funds that have been placed at their disposal.

Although each approach emphasizes a different aspect of economic theory, both methods attempt to measure the same concept: the cost of equity capital. In practical applications, however, these two approaches can produce somewhat different results, and they rely upon different data sources.

Q. Can you compare the Comparable Earnings Approach with the Market Approach?

A. Yes. As I use these terms, the comparable earnings approach is grounded in the economic theory of competition in the market for goods and services, rather than the market for securities. This theory suggests that the return earned by the average firm in a competitive industry will tend to be equal to the opportunity cost of equity capital---the return which could be earned by investing and operating in another industry while facing comparable risk. To the extent this is temporarily not true, equity capital will tend to flow away from the industries earning insufficient returns and into the ones earning excessive returns.

As a result of this adjustment process, the balance will gradually shift: competition will diminish in industries which lose firms and increase in industries which gain firms. As firms leave the industries with insufficient returns, the remaining firms will tend to earn higher returns. Conversely, increased competition in industries with excessive returns will drive down returns, until they no longer exceed the opportunity cost of equity capital. The same pattern of

competitive forces also occurs as firms earning high returns expand their capacity, and firms earning inadequate returns retrench. Over time, returns tend to equilibrate towards a normal level (although some individual firms may repeatedly earn more than their cost of capital, due to the presence of market power or other unique attributes).

Consequently, the theory of competition provides a basis for determining the opportunity cost of equity capital. By using the comparable earnings approach, one can estimate the long-run cost of equity as being equivalent to the level of returns being earned, on average, by firms throughout the economy. To the extent one is using this method to estimate equity costs for a firm that faces above or below average risk, it is necessary to adjust the economy-wide level of equity cost for the relevant differences in risk.

One of the major advantages of the comparable earnings approach is its simplicity. Basically, it is only necessary to determine the returns on book equity earned by firms throughout the economy over one or more business cycles and use the resulting observed average return as an estimate of the cost of equity. To the extent applicable, it may also be necessary to adjust this average cost of equity for any differences in risk that may apply to a particular context.

Q. The comparable earnings approach, properly used, appears fairly simple. Are there any pitfalls?

A. Yes, there are a few potential pitfalls. First, it is important to include a cross-section of companies in the study. This broader base prevents the possible selection of an unusual group of firms which earn returns significantly above or below the norm. Second, care must be taken to avoid the use of data from a group of firms which have a large amount of monopoly power. Otherwise, the returns included in the study may be biased upward to a significant degree by the presence of monopoly profits. Third, it is important to resolve any differences in risk. For instance, if the firms included in the study face a higher degree of risk than the firm in question, this difference must be recognized by adjusting downward the observed returns to reflect the cost of equity to a firm facing lower risk.

Q. Would you next discuss the market approach?

A. Yes. In contrast to the comparable earnings approach, the market approach tends to be more complex, and it rests upon a somewhat different theoretical foundation. Generally speaking, the market approach, when properly applied, is tied to the theory of competition in the market for investment securities, instead of goods and services. In a competitive market, the return earned on one security will tend to equal the returns earned on other securities of comparable risk. If the return earned on a particular security exceeds the level they require, investors will bid up the price of that security. By the same token, investors will bid down the market price of a security if its return is below the required level. In both cases, the price will be adjusted until the expected total return reaches the required level, which is the cost of equity capital.

The market and comparable earnings approaches are interrelated, because the theory of competition suggests that in equilibrium the cost of equity derived from the comparable earnings approach should exceed the cost of equity derived from the market approach by only a small fraction, in order to cover the transaction costs associated with common stock issuance. Only this small marginal deviation can logically persist, assuming there is sufficient competition in both the securities and goods and services markets.

To illustrate this principle, it is helpful to consider the following situation: What would happen if existing firms consistently earned returns considerably higher than the level demanded by investors in the securities market? In all probability, entrepreneurs would create new firms in an effort to share in the high returns enjoyed by existing firms. Existing firms would expand as well, in an effort to maintain their market share and take advantage of the opportunity for supra-normal profits. To fuel this growth, additional equity shares would be issued and/or profits retained.

In the absence of barriers to entry or other factors that preclude competitive forces from being completely effective, the industry would expand, and an increased supply of equity securities would persist until the actual returns earned by firms was brought into line with the returns required by equity investors. As I have said, considering the interaction between the securities market and the markets for goods and services and assuming competition in both sets of markets, earnings on book equity should in the long run exceed the return on equity

demanded by investors by only the small fraction needed to cover the transaction costs associated with securities issuances.