Chapter 13
Comparable Earnings

The Comparable Earnings standard has a long and rich history in regulatory proceedings, and finds its origins in the fair return doctrine enunciated by the U.S. Supreme Court in the landmark *Hope* case. The governing principle for setting a fair return decreed in *Hope* is that the allowable return on equity should be commensurate with returns on investments in other firms having comparable risks, and that the allowed return should be sufficient to assure confidence in the financial integrity of the firm, in order to maintain creditworthiness and ability to attract capital on reasonable terms. Two distinct standards emerge from this basic premise: a standard of Capital Attraction and a standard of Comparable Earnings. The Capital Attraction standard focuses on investors' return requirements, and is applied through market value methods described in prior chapters, such as DCF, CAPM, or Risk Premium. The Comparable Earnings standard uses the return earned on book equity investment by enterprises of comparable risks as the measure of fair return.

13.1 Rationale

The Comparable Earnings approach stems from a particular interpretation of the *Hope* language that states that returns are to be defined as book rates of return on equity (ROE) of other comparable firms. Book return on common equity is computed by dividing the earnings available to common shareholders by the average book common equity. ROE should be measured using "normalized" earnings, that is, earnings before extraordinary items and unusual charges. To implement the approach, a group of companies comparable in risk to a specified utility is defined, the book return on equity is computed for each company, and the allowed return is set equal to the average return on book value for the sample. The reference group of companies is usually made up of unregulated industrial companies of similar risk.

The rationale of the method is that regulation is a duplicate for competition. The profitability of unregulated firms is set by the free forces of competition. In the long run, the free entry of competitors would limit the profits earned by these unregulated companies, and, conversely, unprofitable ventures and product lines would be abandoned by the unregulated companies. In other words, the free entry and exit of competitors should ensure that the profits earned by non-regulated firms are normal in the economic sense of the term. Aggregating book rates of return over a large number of comparable risk unregulated companies would even out any abnormal short-run profit aberrations, while averaging over time would dampen any cyclical aberrations. Thus, by averaging the book profitability of a large number of unregulated companies

over time, an appropriate measure of the fair return on equity for a public utility is obtained.[1]

13.2 Implementation

To implement the Comparable Earnings standard, three steps are required. First, a sample of unregulated companies of reasonably comparable risk is developed. Second, an appropriate time period over which book rates of return on equity are measured is chosen. Third, the result is adjusted for any risk differential between the sample of unregulated companies and the utility, to the extent that such a differential exists. The three steps are discussed in more detail below. The apparent simplicity of the method is overshadowed by various practical difficulties encountered in executing the method, some of which are more illusory than real.

Risk Comparability

The measures of risk described in Chapters 2 and 3 and the methodologies and case examples described in Chapter 14 for identifying comparable risk companies provide a solid basis for identifying firms in a comparable risk class. A myriad of risk screening criteria can be used, such as bond ratings, betas, coverage ratios, earnings or ROE volatility, and stability of dividends. For example, a list of companies comparable in risk to a specified utility might be screened from a computer data base according to the following criteria: (1) they should have a standard deviation of market return and/or beta as close as possible to the subject utility; (2) they should be publicly traded companies to ensure data availability; (3) they should have a given Value Line rating indicating a degree of safety similar to the subject utility; (4) they should have a given Standard & Poor's quality rating, comparable to the subject utility; and (5) the companies should be non-regulated industrials so as to avoid circularity problems, as discussed below.

Some analysts impose additional qualitative criteria for constraining the sample of comparable firms to resemble utilities. For example, the universe of companies could be limited to consumer-oriented industries on the grounds that they, like utilities, exhibit more stability than other industries, such as cyclical, durable goods, construction, and natural resource industries. Others exclude financial institutions (banks, real estate companies, investment companies, etc.) because of their very high degree of financial leverage and capital turnover relative to utilities. Other analysts impose minimum size constraints, minimum

[1] For illustrative implementation of the Comparable Earnings approach, see McShane (2005), Morin (2004), and Parcell (2005).

volume of trading on public exchanges, and a ceiling on the amount of dividend cuts over a past period.

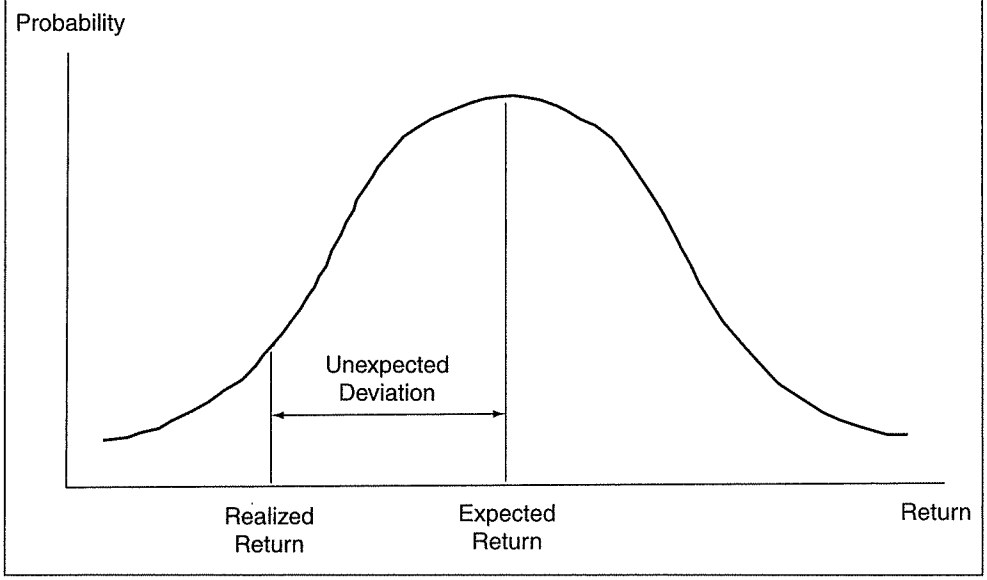
In defining a population of comparable-risk companies, care must be taken not to include other utilities in the sample, since the rate of return on other utilities depends on the allowed rate of return. The historical book return on equity for regulated firms is not determined by competitive forces but instead reflects the past actions of regulatory commissions. It would be circular to set a fair return based on the past actions of other regulators, much like observing a series of duplicate images in multiple mirrors. The rates of return earned by other regulated utilities may very well have been reasonable under historical conditions, but they are still subject to tests of reasonableness under current and prospective conditions.

Time Period

The cost of capital of a company refers to the expected long-run earnings level of other firms with similar risk. But a company's achieved earnings in any given year are likely to exceed or be less than their long-run average. Such deviations from expectations occur at the macroeconomic level as well. At the peak of the business cycle, firms generally earn more than their cost of capital, while at the trough the reverse is typical. Aggregating returns over a large number of comparable-risk unregulated firms averages the abnormally high and low rates of profitability in any given year. Furthermore, to dampen cyclical aberrations and remove the effects of cyclical peaks and troughs in profitability, an average over several time periods should be employed. The time period should include at least one full business cycle that is representative of prospective economic conditions for the next cycle. Such cyclical variations can be gauged by the official turning points in the U.S. business cycle, reported in *Business Conditions Digest.*

Averaging achieved returns over a full business cycle can serve as a reasonable compromise between the dual objectives of being representative of current economic conditions and of smoothing out cyclical fluctuations in earnings on unregulated firms. Some analysts confine their return study to the most recent time period. The most serious flaw of this approach is that historical returns on equity vary from year to year, responding to the cyclical forces of recession and expansion and to economic, industry-specific and company-specific trends. The most recent period is not likely to mirror expectations and be representative of prospective business conditions. Moreover, in the short run, reported book profitability frequently moves in the opposite direction to interest rates and to investors' required returns. For example, a period of disinflation and falling interest rates will increase company earnings and earned equity returns, while investors' return requirements are falling, and conversely.

FIGURE 13-1
PROBABILITY DISTRIBUTION OF RETURNS
EXPECTED VS. REALIZED OUTCOME



The fundamental issue is whether realized book returns are an adequate surrogate for expected returns. To visualize the problem, Figure 13-1 represents a probability distribution of returns envisaged by investors. The Comparable Earnings standard attempts to measure the expected book return, that is, the mean of the probability distribution. But the actual realized return in any given time period represents but a single outcome on the distribution, which may be far removed from original investor expectations. The problem is not unique to the Comparable Earnings method. Any method that relies on historical data is vulnerable to this deficiency. To maximize the possibility that historical results will match expectations, the sample of companies studied should be large enough so that deviations from the mean return will cancel out. But such deviations will only cancel out if there are no systematic economy-wide effects acting upon all companies at the same time, such as recession or expansion cycles. The remedy is to average actual book returns over at least a full business cycle.

One practical difficulty with Comparable Earnings is the lag in the availability of reported accounting data. Frequently, the most recent accounting data available are already one year old, notwithstanding the fact that rates will not become effective until an even later date. A remedy does exist, however. An estimate of the current year's ROE and of next year's expected ROE can be derived from analysts' earnings forecasts. The consensus earnings forecasts from IBES or Zacks for a given company can be divided by an estimate of the per share book value of common equity to obtain a forward-looking ROE.

The estimated per share book value of common equity is equal to the previous year's book value per share plus the projected addition to retained earnings. The latter is simply the projected earnings per share for the coming year less the projected dividends per share. Therefore, it is possible to devise projected Comparable Earnings results and circumvent the tardiness of accounting data.

Real Comparable Earnings

Under the "real comparable earnings" approach, the adequacy of unregulated companies' current book returns is examined in relation to varying inflationary environments. For example, suppose that a given utility has the same degree of risk as the average stock market investment. The Standard & Poor's 400 Industrials Index provides a ready-made comparable risk group of companies. If, from 1997–2006, the book equity returns of the S&P 400 averaged 13%, and the rate of inflation over the corresponding period was 4%, then annual real return must have averaged 9%. If the current or forecast inflation rate is 3%, an average prospective return on book equity for the S&P 400 index of 9% + 3% = 12% would be required to maintain a real return comparable to past experience.

Inflation accounting remains a controversial topic. The relationship between comparable earnings and inflation is tenuous. To assess real returns, that is, inflation-adjusted ROEs, one must work with formal inflation-adjusted financial statements where reported earnings and equity book values are adjusted for inventory profits, replacement cost depreciation, and the monetary gains of debt financing. Holland and Myers (1979) studied the real returns of U.S. corporations using the national income accounts. They found that the complexity and data requirements involved in deriving and applying inflation-adjusted returns are probably not worth the practical benefits. Inflation accounting or current cost accounting concepts are not yet officially recognized or used. More importantly, accounting rates of return possess conceptual blemishes that far outweigh any of the benefits of applying formal inflation adjustments.

In times of variable inflation, it is obvious that accounting rates of return are not accurate measures of true economic rates of return. What is less obvious is that accounting returns are generally not valid measures of economic returns even under non-inflationary conditions. Accounting or book return is, in many cases, a poor measure of true economic return. The relationship between the two rates is a complex function of the age structure of a firm's assets, the company's growth, depreciation policy, and inflation. To illustrate, the book

return of a utility with aged assets will exceed that of a company with relatively new assets, all else remaining constant.[2]

Several academic studies, notably by Solomon (1970), Solomon and Laya (1967), and Fisher and McGowan (1983), have confirmed that the strong disparity between accounting and true economic return and the biases inherent in book returns are systematic and do not cancel out in the averaging process. It was suggested earlier that the reference group of companies be made up of unregulated companies in order to avoid the circularity problem. But, given that rates are set on the basis of a book value rate base in most jurisdictions, the economic value of a utility is likely to be in closer concordance with its book value. Thus, the biases in book returns of unregulated firms are inherently more serious than the biases for regulated firms.

Risk Adjustment

The risk comparability of the two groups can be verified by comparing the summary risk statistics of the utility group and the industrials group. Typically, if the risk filter is constructed correctly, no adjustment to the comparable earnings result is necessary for any risk differential between utilities and the industrial group. If the risk filter is valid, the industrial group will be, by definition, virtually identical to the utility group.

If risk differences between the utility and the unregulated group do exist, perhaps because of the scarcity of low-risk industrial companies and/or because of liberal screening criteria, a risk adjustment may be in order. There are several ways to quantify the risk adjustment. One way is to compare the average beta of the two groups and use the CAPM to quantify the return differences implied by the differences in the betas between the two groups. For example, if the difference in beta between the utility group and the industrials group is 0.05, the return differential is given by 0.05 times the excess return on the market, ($R_M - R_F$). Using an estimate of 6% for ($R_M - R_F$), the return adjustment is 30 basis points. Assuming the industrial group has the higher average beta, the Comparable Earnings result is therefore adjusted downward by 30 basis points.

Another method is to estimate the DCF cost of equity implied by the relative price/earnings (P/E) ratios of the two groups. Because P/E ratio differences between the two groups are due to differences in growth and risk, and because growth differentials can be factored out, the difference in DCF cost of equity

[2] See Brealey, Myers, Allen (2006) Chapter 12 for an excellent discussion of economic vs accounting returns. See also Bodie (1982).

reflects the difference in risk. The following DCF formula using the dividend payout, D/E , reconciles the cost of common equity with the observed P/E ratio[3] and takes growth differentials into account:

$$K = \frac{D/E}{P/E} + g \qquad (13\text{-}1)$$

The DCF return for each group can be calculated using the above formula. The return differential between the two groups will determine the magnitude of the adjustment to the industrial returns.

A third method is based on market-to-book (M/B) ratios. If the average M/B ratio for the group of comparable-risk companies is reasonably close to 1.0, if there is no inflation, and if the standard DCF model is applicable to the companies in the group, then the sample companies are earning their cost of capital. This is because in an inflation-free, competitive environment, firm market values are driven to book values. If the average M/B ratio exceeds 1.0, the industrial group may be suspected of earning monopolistic returns in excess of the cost of capital, and the group's average book return is not an adequate measure of cost of capital. One way to circumvent this problem is to eliminate from the sample those industries that are characterized by high concentrations of market share.

This argument is valid only if actual realized book returns are, in fact, reflective of expected book returns and if inflation is absent. In the absence of inflation, if realized book returns averaged over a long time period for a large aggregate of comparable-risk companies are taken as valid surrogates for expected book returns, then it is appropriate to compute M/B ratios in order to gauge whether these companies are expected to earn an amount more, less, or equal to their cost of capital. To maximize the possibility that the average book returns of the reference companies are in fact reflective of their cost of capital, a specified M/B ratio constraint can be applied on the sample companies as an additional screening criterion.

---

[3] The following equation transforms the observed P/E ratio into the investor's required return on equity. From the formal DCF statement of the value of a share of common stock, from Chapter 8, Equation 8-7:

$$P = D_1/(K - g)$$

but $D_1 = E_1(1 - b)$. Substituting and dividing both sides by E:

$$P/E = (1 - b)/(K - g)$$

Dividing both sides of the equation by P/E and solving for K:

$$K = (1 - b)/P/E + g$$

But the payout ratio, $(1 - b)$, equals D/E. So, $K = D/E \,/\, P/E + g$

The picture changes when inflation is introduced. For unregulated firms, the natural forces of competition will ensure over the long run that the ratio of the market value of these firms' securities equals the replacement cost of their assets, and not their book value. As discussed in Chapter 12, this suggests that a fair and reasonable price for a public utility's common stock is one that produces equality between the market price of its common equity and the replacement cost of its physical assets. The latter circumstance will not necessarily occur when the M/B ratio is 1.0. Therefore, an M/B in excess of 1.0 is not necessarily indicative of monopoly returns.

The appropriate manner of testing for the existence of monopoly profits is therefore to determine the Q-ratio of the industrial firms. If the Q-ratio exceeds 1.0, excess returns are indicated, and vice versa. If the Q-ratio is reasonably close to 1.0, the firms in the comparable group are indeed competitive and earning fair returns equal to the cost of capital. McShane (2005) suggests an expedient technique for computing the Q-ratio. Because reliable replacement cost data are unavailable for industrial firms, the common equity is repriced by adding annual increments to book value to reflect cumulative inflation, using the Consumer Price Index of Gross Domestic Product Deflator. The market value of the equity is then compared to its restated book value to determine if the Q-ratio differs significantly from 1.0. In the absence of any evidence of monopolistic returns, no adjustment to the industrial returns is warranted due to high M/B ratios. If the Q-ratio departs significantly from 1.0, a return adjustment is required.

Some Comparable Earnings enthusiasts argue that the achieved ROEs can be used to determine the cost of capital, and to that end, they adjust the industrial ROEs to a value that would produce an M/B ratio of 1.0. In other words, these analysts take the position that because current M/B ratios are in excess of 1.0, this indicates that companies are expected by investors to be able to earn more than their cost of capital, and that the regulating authority should lower the authorized return on equity, so that the stock price will decline to book value. Chapter 12 offered several reasons why this view of the role of M/B ratios in regulation should be avoided. The fundamental goal of regulation should be to set the expected economic profit for a public utility equal to the level of profits expected to be earned by firms of comparable risk, in short, to emulate the competitive result.

Case Study 13-1

In this case study drawn from an actual rate case, a sample of comparable-risk industrials and public utilities was composed using four risk measures

as screening guides. Only those companies whose risk and variability characteristics were at the low end of the risk spectrum survived the stringent screening process. The first risk measure was the beta coefficient, a market-oriented measure. The second, third, and fourth risk measures, which are accounting-oriented, were the standard deviation of achieved book returns on equity (STDROE), the coefficient of variation of book equity returns (CVROE), and total interest coverage. The book equity returns in the last 10 years were averaged for each company. Both the STDROE and the CVROE were then computed for each company. The CVROE was obtained by dividing the STDROE by the mean.

The interest coverage ratio measures the ability of a firm's earnings to meet its fixed obligations, and is an important determinant of creditworthiness scrutinized by bond rating agencies and by the investment community. Total interest coverage figures were obtained from Standard & Poor's Research Insight database.[4]

The initial screening process to derive the sample of comparable-risk, publicly traded industrial and utility companies evolved as follows:

(1) Companies listed in The Value Line Investment Survey and for which information was available on Standard & Poor's Research Insight database yielded an initial sample of 1,475 companies.

(2) Companies that did not have current year interest coverage data and companies with negative interest coverage were omitted from the sample, reducing the sample size to 1,352.

(3) Companies that did not have ROE data for each of the last 10 years and companies with negative mean ROEs were omitted from the sample, reducing the sample size to 967.

(4) Companies with STDROE greater than 100 and CVROE greater than 10 were deleted from the sample, leaving a total of 953 companies ready to be screened.

(5) Finally, to simulate the coverage environment of the utility industry, companies with total interest coverage of less than 1.00 and greater than 4.00 were eliminated from the sample, leaving a total sample of 551 companies.

[4] The definition of total interest coverage is "income before extraordinary items" (the income of a company after all expenses, but before provisions for common and/or preferred dividends), plus "interest expense" (the periodic expense to the company of securing short- and long-term debt).

The companies were then further screened as follows. The average beta and total interest coverage of the sample of 551 companies were 0.97 and 2.20, respectively. The third and fourth risk measures yielded an average STDROE and CVROE for the sample of 6.45 and 0.7744, respectively. All companies with market risk and total interest coverage less than or equal to the average and whose STDROE and CVROE measures of risk were less than or equal to half the average were retained, that is, companies with a beta less than or equal to 0.97, total interest coverage less than or equal to 2.20, STDROE less than or equal to 3.22 and CVROE less than or equal to 0.3872.

Table 13-1 shows the list of companies and the summary statistics for the 46 companies that survived the screens. It is interesting to note that several utilities appear in the surviving sample, attesting to its comparability, reasonableness, and accuracy. Of the 46 surviving companies, 18 are industrials and 28 are utilities, 8 of which are gas distribution companies.

Table 13-2 shows the summary statistics for the 18 industrials that survived the stringent screening process. The group of 18 comparable-risk companies experienced a mean return on book equity of 13.13% over the last 10 years. As indicated at the bottom of the various columns, the average adjusted beta for this sample of low-risk industrials is 0.84. The average total interest coverage is 1.41, the average CVROE is 0.1588, and the average STDROE is 1.80. To place the results for the industrial group in perspective, the statistics for the entire screened database of 551 companies were the following: average beta = 0.97, average total interest coverage = 2.20, average CVROE = 0.7744, and average STDROE = 6.45.

Another way of constructing the screen is to rank the companies on each of the risk criteria, and then array the companies by their composite ordinal risk score, as illustrated in Chapter 14, Table 14-3.

13.3 Assessment

On the plus side of the ledger, the Comparable Earnings standard is easy to calculate relative to the market-based techniques (DCF, CAPM, etc), and the amount of subjective judgment required is minimal. The method avoids several of the subjective factors involved in other cost of capital methodologies. For example, the DCF approach requires the determination of the growth rate contemplated by investors, which is a subjective factor. The CAPM requires the specification of several expectational variables, such as market return and beta. In contrast, the Comparable Earnings approach makes use of simple, readily available accounting data. Return on book equity data are widely

TABLE 13-1
AVERAGE RETURN ON EQUITY AND RISK MEASURES

	Company	Status	10-Year Mean ROE	STDROE	CVROE	Beta	Interest Cover
1	Amer. Elec Pwr	R	12.71	1.21	0.0954	0.75	2.16
2	Amer. Water Wks	R	12.77	1.55	0.1211	0.65	1.70
3	Ameron, Inc.	U	8.12	2.14	0.2635	0.50	1.50
4	Amsouth Bancorp	U	14.03	1.49	0.1063	0.90	1.34
5	Atlanta Gas Lt	R	12.52	1.69	0.1352	0.65	2.12
6	BCE Inc.	R	12.55	1.56	0.1245	0.60	1.67
7	Boatmen's Bncsh	U	13.68	2.78	0.2033	0.95	1.30
8	Calif Water	R	13.55	1.68	0.1236	0.50	2.05
9	Canon Inc (ADR)	U	8.52	3.18	0.3728	0.75	1.68
10	Commerce Bancsh	U	12.68	1.15	0.0911	0.75	1.35
11	Conn. Energy	R	11.60	1.34	0.1156	0.55	1.89
12	Conn. Nat Gas	R	13.14	1.38	0.1052	0.60	2.11
13	Consumers Water	R	13.82	2.91	0.2107	0.50	1.70
14	Fifth Third Bnc	U	17.38	0.82	0.0470	0.95	1.55
15	First Alabama	U	14.43	0.82	0.0569	0.95	1.42
16	First of Amer.	U	15.45	1.16	0.0753	0.95	1.23
17	First Tenn Natl	U	13.79	2.79	0.2020	0.85	1.32
18	Hawaiian Elec.	R	12.24	1.77	0.1445	0.70	1.42
19	Hitachi, Ltd.	U	8.25	3.09	0.3740	0.75	1.68
20	Houston Inds.	R	12.96	2.27	0.1750	0.60	1.91
21	Huntington Banc	U	13.89	2.55	0.1838	0.90	1.34
22	Idaho Power	R	11.30	2.86	0.2533	0.60	2.08
23	IES Industries	R	12.36	2.89	0.2339	0.55	2.11
24	Interstate Pwr	R	10.87	2.32	0.2136	0.55	2.14
25	Liberty Nat'l	U	14.07	0.86	0.0612	0.85	1.30
26	Marshall&Ilsley	U	15.57	1.33	0.0856	0.95	1.52
27	Nat'l Fuel Gas	R	11.82	2.24	0.1896	0.60	2.00
28	Northeast Util	R	14.41	2.91	0.2020	0.65	2.06
29	NW Natural Gas	R	10.98	2.84	0.2589	0.60	1.59
30	Ohio Edison	R	12.50	2.78	0.2222	0.80	1.98
31	Old Kent Fin'l	U	15.98	1.25	0.0785	0.90	1.37
32	Oneok Inc.	R	8.78	2.70	0.3077	0.80	1.90
33	Phila. Suburban	R	10.88	0.75	0.0686	0.60	1.71
34	Public Svc (CO)	R	13.33	1.72	0.1291	0.65	2.09
35	Public Svc Ent.	R	12.77	1.36	0.1061	0.70	2.02
36	Sierra Pacific	R	11.13	1.68	0.1513	0.55	1.80
37	Sony Corp.(ADR)	U	8.49	3.12	0.3675	0.75	1.40
38	South Jersey IN	R	11.63	1.49	0.1278	0.50	1.95
39	Star Banc Corp.	U	13.41	0.62	0.0463	0.85	1.33
40	Synovus Fin'l	U	17.37	1.33	0.0767	0.65	1.32
41	Textron, Inc.	U	11.18	1.86	0.1663	0.95	1.44
42	United Water	R	11.97	1.88	0.1570	0.70	1.63
43	Utilicorp Untd.	R	13.35	3.05	0.2283	0.60	1.53
44	Washington Ener	R	9.56	3.07	0.3208	0.55	1.45
45	Westc'st Energy	R	9.95	1.52	0.1529	0.50	1.46
46	Wicor, Inc.	R	11.61	3.18	0.2736	0.60	2.14
	Average		**12.46**	**1.98**	**0.1697**	**0.70**	**1.69**

Source: S&P Research Insight and Value Line Investment Analyzer

TABLE 13-2
AVERAGE RETURN ON EQUITY AND RISK MEASURES

	Company	Status	10-Year Mean ROE	STDROE	CVROE	Beta	Interest Cover
1	Ameron, Inc.	U	8.12	2.14	0.2635	0.50	1.50
2	Amsouth Bancorp	U	14.03	1.49	0.1063	0.90	1.34
3	Boatmen's Bncsh	U	13.68	2.78	0.2033	0.95	1.30
4	Canon Inc (ADR)	U	8.52	3.18	0.3728	0.75	1.68
5	Commerce Bancsh	U	12.68	1.15	0.0911	0.75	1.35
6	Fifth Third Bnc	U	17.38	0.82	0.0470	0.95	1.55
7	First Alabama	U	14.43	0.82	0.0569	0.95	1.42
8	First of Amer.	U	15.45	1.16	0.0753	0.95	1.23
9	First Tenn Natl	U	13.79	2.79	0.2020	0.85	1.32
10	Hitachi, Ltd.	U	8.25	3.09	0.3740	0.75	1.68
11	Huntington Banc	U	13.89	2.55	0.1838	0.90	1.34
12	Liberty Nat'l	U	14.07	0.86	0.0612	0.85	1.30
13	Marshall&Ilsley	U	15.57	1.33	0.0856	0.95	1.52
14	Old Kent Fin'l	U	15.98	1.25	0.0785	0.90	1.37
15	Sony Corp.(ADR)	U	8.49	3.12	0.3675	0.75	1.40
16	Star Banc Corp.	U	13.41	0.62	0.0463	0.85	1.33
17	Synovus Fin'l	U	17.37	1.33	0.0767	0.65	1.32
18	Textron, Inc.	U	11.18	1.86	0.1663	0.95	1.44
	Average		**13.13**	**1.80**	**0.1588**	**0.84**	**1.41**

available on computerized data bases for most public companies and for a wide variety of market indices.

The method is easily understood, and is firmly anchored in regulatory tradition. The method is not influenced by the regulatory process to the same extent as market-based methods, such as DCF and CAPM. The return estimate from the Comparable Earnings standard is applied to the utility's book common equity, in contrast to the return estimate from the market-based techniques which is applied to the stock price. Stock price can be influenced by the actions of regulators and investor expectations of those actions. The utility's book common equity on the other hand is much less vulnerable to regulatory influences than stock price.

Although the analyst possesses a fair amount of latitude in selecting risk criteria to define the sample of comparable-risk companies, it is easier to generate a set of comparable-risk companies than it is to measure accurately the input quantities required in alternate cost of capital estimating techniques, such as DCF and CAPM. As a practical matter, although different risk measures may produce different groups of comparable companies, many of the same companies are selected over a wide range of risk measures.

Another positive attribute of the method is that it avoids the problem of overstating or understating investor return requirements when prices and book values are materially different from unity. Use of the comparable earnings method eliminates the problem of material differences in price and book value.

On the minus side of the ledger, the Comparable Earnings approach rests on a particular notion of opportunity cost, namely that a utility should be allowed to earn what it would have earned had its capital been invested in other firms of comparable risk. A goal of fairness is said to be achieved by this. This particular interpretation of returns stands in contrast to financial theory, which interprets returns as forward-looking, market-determined returns. Accounting rates of return are not opportunity costs in the economic sense, but reflect the average returns earned on past investments, and hence reflect past regulatory actions. The denominator of accounting return, book equity, is a historical cost-based concept, which is insensitive to changes in investor return requirements. Only stock market price is sensitive to a change in investor requirements. Investors can only purchase new shares of common stock at current market prices and not at book value.

More simply, the Comparable Earnings standard ignores capital markets. If interest rates go up 2% for example, investor requirements and the cost of equity should increase commensurably, but if regulation is based on accounting returns, no immediate change in equity cost results. Investors capitalize expected future cash flows and not current earnings, and what was earned on book value is not directly related to current market rates.

Another conceptual anomaly is that when the utility's current book rate of return is compared to that of firms of comparable risk, it is assumed that there is a fundamental theoretical relationship between accounting returns and risk. But no such relationship exists in financial theory. The risk-return tradeoff found in financial theory is expressed in terms of market values rather than in terms of accounting values. Only if long time periods are examined and broad aggregates are used can an empirical relationship between risk and accounting return be found.

Another blemish of the Comparable Earnings method is that comparisons of book rates of return among companies are computationally misleading because of differences among companies in their accounting procedures. Despite the umbrella of generally acceptable accounting principles, areas of difference include the treatment of inventory valuation, depreciation, investment tax credits, deferred taxes, and extraordinary items. The lack of accounting homogeneity is exacerbated by the necessity of studying nonregulated companies, which are likely to exhibit greater accounting differences. As a practical matter, such differences are relatively minor in comparison to the problems of risk estimation and time period discussed earlier, and may be attenuated

by employing reasonably diverse aggregates in the reference group and by excluding groups with vastly different asset and financing compositions from utilities, such as financial institutions and natural resource companies. If the companies in a particular reference group have clear identifiable differences in accounting treatment, the latter should be used as an additional screening criterion to eliminate such companies, or the accounting rates of return should be restated on a consistent comparable basis.

More fundamentally, the basic premise of the Comparable Earnings approach is that regulation should emulate the competitive result. It is not clear from this premise which is the proper level of competition being referenced. Is the norm the perfect competition model of economics where no monopolistic elements exist, or is it the degree of competition actually prevailing in the economy? A strong case for the latter can be made on grounds of fairness alone.

Although the Comparable Earnings test does not square well with economic theory, the approach is nevertheless meritorious. If the basic purpose of comparable earnings is to set a fair return rather than determine the true economic return, then the argument is academic. If regulators consider a fair return as one that equals the book rates of return earned by comparable-risk firms rather than one that is equal to the cost of capital of such firms, the Comparable Earnings test is relevant. This notion of fairness, rooted in the traditional legalistic interpretation of the *Hope* language, validates the Comparable Earnings test.

Moreover, if regulation is a substitute for competition, and if the cost of capital is to play the same role in the utility industry as in unregulated industries, then the allowed rate of return should be set in excess of the cost of capital. The reason has to do with the economic criterion employed by corporations in their investment decisions. This criterion is that the expected marginal return on new projects be greater than the cost of capital. Corporations rank investment projects in descending order of profitability, and successively adopt all investment projects to the point where the least attractive project has a return equal to the cost of capital. The average return on all new investment projects will then exceed the cost of capital. If the average, rather than the marginal, return is set equal to the cost of capital as is the case with Comparable Earnings, the implication is that a company also accepts investment projects that are less profitable than the cost of capital, so that the average return on all projects accepted is equal to the cost of capital. Corporate investment would largely cease under such a scheme. Moreover, if unregulated companies were to pursue such an investment policy, a serious misallocation of economic resources would ensue.

The Comparable Earnings approach is far more meaningful in the regulatory arena than in the sphere of competitive firms. Unlike industrial companies,

the earnings requirement of utilities is determined by applying a percentage rate of return to the book value of a utility's investment, and not on the market value of that investment. Therefore, it stands to reason that a different percentage rate of return than the market cost of capital be applied when the investment base is stated in book value terms rather than market value terms. In a competitive market, investment decisions are taken on the basis of market prices, market values, and market cost of capital. If regulation's role was to duplicate the competitive result perfectly, then the market cost of capital would be applied to the current market value of rate base assets employed by utilities to provide service. But because the investment base for ratemaking purposes is expressed in book value terms, a rate of return on book value, as is the case with Comparable Earnings, is highly meaningful.

References

Bodie, Z. "Compouund Interest Depreciation in Capital Investments." *Harvard Business Review*, 60, May–June 1982.

Brealey, R., Myers, S., and Allen, P. *Principles of Corporate Finance,* 8th ed. New York: McGraw-Hill, 2006.

Fisher, F.M. and McGowan, J.J. "On the Misuse of Accounting Rates of Return to Infer Monopoly Profits." *American Economic Review,* March 1983, 82–97.

Holland, D.M and Myers, S.C. "Trends in Corporate Profitability and Capital Costs." In *The Nation's Capital Needs: Three Studies,* Edited by R. Lindsay, Committee for Economic Development, 1979.

McShane, K.C. Prepared Testimony on Fair Return on Equity for Hydro-Quebec, Foster Associates, Inc., 2005.

Morin, R.A. Prepared Testimony on Fair Return on Equity for TransEnergie Hydro-Quebec, Utility Research International, 2004.

Parcell, D.C. "*The Cost of Capital—A Practitioner's Guide*," Prepared for the Society of Utility and Regulatory Financial Analysts, 1997.

Solomon, E. "Alternative Rate of Return Concepts and Their Implications for Utility Regulation." *Bell Journal of Economics and Management Science,* Spring 1970, 65–81.

Solomon, E. and Laya, J.E. "Measurement of Company Profitability: Some Systematic Errors in the Accounting Rate of Return." In *Financial Research and Management Decisions,* Edited by A.A. Robichek. New York: Wiley and Sons, 1967.