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that use the empirical relationship between return on equity and M/B ratios to infer the return necessary to produce a target M/B ratio are misleading because they assume a constant invariant relationship between M/B ratios and equity returns for all firms, irrespective of their risk, growth, and dividend yield. Empirically, the regression relationship can be falsified by outlying points that distort the regression line away from the trends set by most of the points. The technique can also be criticized for failing to include other risk measures in addition to the M/B ratio in its selection of comparable companies. A wide range of returns may correspond with a specified range of M/B ratio.

A more realistic and general explanatory equation would take the form:

$$M/B = a_0 + a_1F_1 + a_2F_2 + a_3F_3 + \dots + a_nF_n \quad (12-11)$$

This equation asserts that a company's M/B ratio is a linear function of several explanatory factors, $F_1, F_2, F_3 \dots F_n$, including the expected book return on equity. The magnitude and direction of the variables' effects on M/B ratios are measured by the factor coefficients, $a_1, a_2, \dots a_n$. Typical explanatory variables include expected return on book equity, expected dividend growth, dividend yield, standard deviation, proxies for earnings quality, regulatory climate, accounting convention, and various risk variables designed to capture financial, business, and regulatory risk. The risk variables include the equity ratio, beta, CWIP treatment, regulatory climate ranking, and the relative importance of construction expenditures. Multiple regression techniques are applied to Equation 12-11 over a sample of companies to produce estimates of the magnitude of these effects. Two actual case examples will illustrate the methodology.

EXAMPLE 12-5

Brigham, Shome, and Bankston (1979) specified the following M/B model for the electric utility industry:

$$\begin{aligned} M/B = & a_0 + a_1(\text{Book yield}) + a_2(\text{Growth}) + a_3(\text{Equity Ratio}) \quad (12-12) \\ & + a_4(\text{AFUDC}) + a_5(\text{Commission Ranking Dummy}) \\ & + a_6(\text{Flow-through Dummy}) \end{aligned}$$

Book yield is measured by multiplying the expected book return on equity, r , by the expected dividend payout rate, $1 - b$. Growth is measured by the retention ratio method as br . The equity ratio measures financial risk, and the percentage of net income made up of AFUDC measures earnings quality. A dummy variable to distinguish among utilities' regulatory climate, and a dummy variable to differentiate flow-through from normalized accounting companies were added. The model

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