1. Return to Fundamentals


3. By the end of 1989, the Nikkei 225 index of Japanese stocks stood at 38,957, 238 percent above its level five years before. Twelve years later in 2001, the Nikkei 225 fell below 10,000, for a loss of over 75 percent from the 1989 high. The “Nifty-Fifty” stocks refer to the so-called glamour stocks of the early 1970s: the likes of Coca-Cola, Johnson & Johnson, Burroughs, Digital Equipment, IBM, Polaroid, Eastman Kodak, and Xerox. The S&P 500 P/E ratio declined from 18.4 at the end of 1972 to 7.7 at the end of 1974, and was at 7.3 at the end of that decade.


5. The yearly trading volume on the world’s stock markets increased from $1.22 trillion in 1983 to $111.2 trillion in 2007 (as reported in Grout, Megginson, and Zalewska, “One Half-Billion Shareholders and Counting”).

6. The Warren Buffett quip is often quoted: he observes that beta implies that “a stock that has dropped very sharply compared to the market . . . becomes ‘riskier’ at the lower price than it was at the higher price.” As quoted in Lawrence A. Cunningham, *The Essays of Warren Buffett: Lessons for Corporate America* (New York: Cardozo Law Review, 1997), p. 14.

7. Another of Keynes’s oft-cited sayings warns that the market can stay irrational longer than you can stay solvent. Although the price of patience may be relatively low for individual investors, not so for investment fund managers who face redemptions when their short-term returns fall below market benchmarks. Many of these managers increased their investment in technology stocks as prices rose to high multiples in the 1990s. In the words of Chuck Prince, CEO of Citigroup to the *Financial Times* on July 9, 2007 (before the financial crisis), “as long as the music is playing, you’ve got to get up and dance.” He also had foresight in saying, “when the music stops, in terms of liquidity, things will be complicated” (as they indeed were for Citigroup). The problems the fundamental investor faces with irrational markets are posed as “limits to arbitrage” in Andrei Shleifer and Robert Vishny, “The Limits of Arbitrage,” *Journal of Finance* 52 (1997), 35–55. But note that confidence that fundamentals will be revealed in financial reports mitigates limitations on arbitrage (and belief that the accounting cannot be relied upon exacerbates).


10. This is the point in the so-called Grossman-Stiglitz paradox: if the market were informationally efficient, then no one would have the incentive to acquire the information on which prices are based. See Sanford J. Grossman and Joseph E. Stiglitz, “The Impossibility of Informationally Efficient Markets,” *American Economic Review* 70 (1980), 393–408.

11. Efficient market advocates do have some answers, however: the supposed bubble prices are due to a decrease in investors’ risk premiums.

12. The early empirical work on the statistical properties of stock returns, including Fama’s own work, largely supported the hypothesis. But when information other than stock prices was introduced, the picture became considerably murkier. Although “event studies” showed that market prices typically adjusted quickly to the arrival of new information, later studies increasingly reported that one could predict stock returns with information, most notably accounting information (at least in the data, if not in real time). The study of so-called “anomalies” was heralded by a special issue of the *Journal of Financial Economics* in 1978 with an introduction by Michael Jensen (editor), “Some Anomalous Evidence Regarding Market Efficiency,” pp. 95–111. Subsequent research has documented many “anomalies,” too many to list, that appear to be inconsistent with rational pricing of risk. Many of these involve trading strategies based on accounting information. For a recent overview, see Scott A. Richardson, İrem Tuna, and Peter Wysocki, “Accounting Anomalies and Fundamental Analysis: A Review of Recent Research Advances,” *Journal of Accounting and Economics* (2010), forthcoming.

13. The inability of experts to “beat the market” on average was documented even before the formal statement of the efficient market hypothesis. See Alfred Cowles 3rd, “Can Stock Market Forecasters Forecast?” *Econometrica* 1 (1933), 309–324. The paper by Michael Jensen, “The Performance of Mutual Funds in the Period 1945–1964,” *Journal of Finance* 23 (1968), 389–416, heralded a long line of investigations indicating that investment fund returns, on average, are little different from those on broad market indexes, after costs. The point was appreciated by Benjamin Graham. He saw that as professional investors emerged, employing his principles, they became the market, trading with one another (just as hedge funds today, trading with each other, make up a good slice of the market); the average player cannot beat the average for the market if he or she is the market. See Benjamin Graham, “The Future of Financial Analysis,” *Financial Analysts Journal* 16 (May-June 1963), 65–70. Graham’s statement in this paper is matched with his continued warning to separate “minimum true value” from speculative value, for that is where the
analyst is likely to get an edge. In “A Conversation with Benjamin Graham” in the Financial Analysts Journal (September-October 1976), 20–23, Graham also distinguishes “investment characteristics” from “speculative characteristics” of stocks, but also says (in recognition of the large amount of stock research going on) that “to that very limited extent, I’m on the side of the ‘efficient market’ school of thought now generally accepted by the professors.”


16. The model is attributed to John Burr Williams, The Theory of Investment Value (Cambridge, MA: Harvard University Press, 1938), though the idea of present value as a measure of wealth is due to Irving Fisher earlier. The model is essentially a statement of the no-arbitrage idea: present value must bear a no-arbitrage relationship to expected future cash flows, such that value must be the price at which one expects to earn the required return for the risk assumed; no more, no less.

17. The property is best seen with a bond: treat the liquidating price as the maturity payment of the bond and the dividends as the coupon payments. Given the discount rate, the value of a bond does not depend on the coupon.


19. As with all economic theory, the proposition comes with assumptions and thus serves as a benchmark to identify conditions where the general principle may not apply. The main one is the assumption of perfect capital markets. Dividends provide liquidity, and investors may demand liquidity as well as value. If there are liquid debt and equity markets, investors can sell some shares if they require more dividends than the firm pays (and leave themselves just as well off in value terms); if the firm pays dividends they do not want, they can just buy the stock with the dividend (and leave themselves just as well off in value terms). This is the idea of homemade dividends: irrespective of the firm’s payout policy, shareholders can create any payout they wish. As to the firm, it does not need to sell off profitable investments if its shareholders require cash dividends: with available debt markets, it can just borrow against the value in the business to pay dividends. These insights, of course, point to situations where dividends might matter: for a private firm for which there is no liquid market for its shares (or no bank is willing to lend to pay dividends), dividends might matter if shareholders—family owners—need cash. Accordingly, shares of private firms tend to be priced with a “liquidity discount,” but not so for firms with shares that are regularly traded on public exchanges. It is also understood that firms should pay out dividends if they do not have invest-
ments to make with their cash (but that does not affect shareholders’ cum-
dividend value). If management makes bad investments (in the corporate jet) instead of paying out dividends, value is lost, but that is a matter of investment policy, not dividend policy.


22. Warren Buffett counters the diversification idea by quoting Mark Twain’s advice from *Pudd’nhead Wilson*: “Put all your eggs in one basket—and watch the basket” (as quoted in Cunningham, *Essays of Warren Buffett*, p. 14).


25. Rubinstein, *History of the Theory of Investments*, p. 79 notes that Williams also stated the principle in 1938 in *Theory of Investment Value*, pp. 72–73. As with the M&K dividend irrelevance notion, some caveats apply. First, if the government subsidizes debt with a favorable tax treatment, issuing debt is a means to apply for this subsidy. (This point is controversial, for the firm may receive a tax deduction for interest on debt, but investors receiving the interest income must pay taxes. So the firm has to raise the interest payment to compensate the investor for the taxes. Miller makes the point in Merton H. Miller, “Debt and Taxes,” *Journal of Finance* 32 (1977), 261–275. Further, all else being equal, issuing debt to capture the subsidy means higher payout to shareholders, and shareholders may pay taxes on those payouts.) Second, in issuing debt, the firm increases the risk of bankruptcy, and thus may incur bankruptcy costs that would otherwise be avoided. Third, if financing (or financing constraints) affect investment in the business, the value of the business will also be affected. Fourth, if a firm can issue debt for more than it is worth or repurchase debt cheaply, it adds value for shareholders. That, of course, presumes inefficiency in the debt market.


29. This point of ex post bias in historical stock returns is made in Stephen Brown, William N. Goetzmann, and Stephen Ross, “Survival,” *Journal of...
In any case, if one compares the average historical return to the variance of return, one has to have quite a long history to show that the average return over the risk-free return is significantly different from zero. A more recent paper questions the whole notion of comparing historical average returns to historical volatility. Focusing on forward-looking volatility, one has to be concerned not only with volatility of returns but also the variance in average returns, making average return less predictable in the long run. Indeed, the paper estimates that uncertainty about returns increases with distance into the future: the annualized variance of 30-year returns is estimated to be 1.5 times that of the one-year return variance. See Lubos Pastor and Robert F. Stambaugh, “Are Stocks Really Less Volatile in the Long Run?” (2009) at http://ssrn.com/abstract=1136847.


With the yearly standard deviation of returns for the S&P 500 of about 20 percent and a risk premium of 6 percent (to be generous), one can, with reasonable probability, have periods of 25 years or more where stock returns are less than those for safe bonds.


Asset-pricing researchers are considering a “a conditional CAPM” to replace the CAPM and confront the Fama and French model. They are breaking up beta into “bad beta” (associated with the arrival of cash flow news) and “good beta” (associated with changes in the discount rate). They are attempting to model why book-to-price might pertain to risk and are introducing other conjectured risk factors to explain the data.
2. Anchoring on Fundamentals

1. Interest rates may change in the future, but will not affect the value of the savings account because earnings in a savings account also change with the interest rate such that changes in the discount rate are offset by changes in earnings (similar to a variable-rate bond).

2. One can apply the dividend discount model of the previous chapter in this case; the present value of a $5 dividend, continuing indefinitely, is $100. Stated using the perpetuity formula,

\[
Value_0 = \frac{5}{0.05} = 100,
\]

where the 5 percent for the capitalization factor is the required return for the savings account.

3. The accounting must also work for the second savings account where dividends are paid out:

Future book value = $100 + $25 − $25 = $100.

For an equity, the dividends are net dividends (or net payout), that is, Cash dividends + Share repurchases − Share issues.


5. In doing so, the student is taken through the gyrations of converting the “equity cost-of-capital” into the “weighted average cost-of-capital (WACC)” that pertains to firm risk rather than equity risk.

7. Wal-Mart, Home Depot, and GE are selected examples, but note that both the mean and median free cash flow for U.S. listed firms over the forty-five years up to 2009 were negative. The period was, of course, a time of considerable corporate investment growth.

8. Mark T. Bradshaw, “The Use of Target Prices to Justify Sell Side Analysts’ Stock Recommendations,” *Accounting Horizons* 16 (2002), 27–41 finds that 76 percent of equity analysts use P/E multiples and only 5 percent use cash-flow multiples.

9. Investment + added accruals is sometimes referred to as total accruals, for investment is also an accrual; recorded investments are part of accrual accounting that distinguishes it from cash accounting.

10. Those familiar with “economic value added,” “shareholder value added,” and “economic profit” metrics will recognize residual earnings by another name. But note that it is not necessarily economic profit; it is just an accounting measure and so depends on how the accounting is done. Note that ROCE for the future is expected earnings divided by expected book value, not expected earnings divided by book value (the two are different, by Jensen’s inequality).

11. The mathematical proof involves substituting Dividends = Earnings – Change in book value (from *Accounting Principle 1*) into the dividend discount model. Boundary conditions, like those for the dividend discount model, require that book value should not grow too fast in the long run. The valuation is also consistent with the DCF model for forecasts made over very long forecast horizons. See Wolfgang Lücke, “Investitionsrechnung auf der Grundlage von Ausgaben oder Kosten?” *Zeitschrift für Betriebswirtschaftliche Forschung* 7 (1955), 310–324.

The residual earnings model has had a long history. In the early part of the twentieth century, the idea that a firm’s value was based on “excess profits” was firmly established in the United Kingdom. The model is in the German literature of the 1920s and 1930s, particularly in the writings of Schmalenbach. In the United States, Gabriel Preinreich, an accounting and valuation theorist associated with Columbia University in the 1930s and 1940s, wrote extensively on the model, including “The Fair Value and Yield of Common Stock,” *The Accounting Review* (1936), 130–140 and “Annual Survey of Economic Theory: The Theory of Depreciation,” *Econometrica* 6 (1938), 219–241. In a 1941 paper,


13. For alternative statements of the residual earnings model and a demonstration of its equivalence to other models, including the dividend discount model, see Stephen H. Penman, “A Synthesis of Equity Valuation Techniques

14. Accordingly valuation can be seen at buying book value and earnings for future delivery, with the current price being the market price of the futures contract.


16. Indeed, if we are not willing to speculate at all, we can anchor on current book value and then forecast earnings based on the earnings we observe currently. We would then be literally anchoring on what we know from financial statements, subject to the quality of the accounting. But we would be excluding information beyond current earnings that we might be reasonably confident about and that indicates that near-term earnings will be different from current earnings.

17. The display is developed by ranking firms in a base year, year 0, on their residual earnings, forming 10 portfolios from the rankings, then tracking the median values for the portfolios over the subsequent five years. Residual earnings at all points are deflated by the book value of common equity in the base year. Residual earnings are calculated with a required return equal to the Treasury rate in the relevant year plus a 6 percent risk premium (for all firms). The ranking is done seven times, for years 1964, 1969, 1974, 1979, 1984, 1989, and 1994, that is, at five-year intervals. The figure presents the average of results from these seven replications. There is one caveat: Firms in the base year may not survive over the full five years.

18. Mathematically, we have just differenced the residual earnings model: earnings are the change in book value (dividends are irrelevant) so, rather than basing the valuation on book value and the level of expected residual earnings, this model bases it on the change in book value (earnings) and the change in expected residual earnings. See Patricia M. Fairfield, “P/E, P/B and the Present Value of Future Dividends,” *Financial Analysts Journal* 50(4) (1994), 23–31 and James R. English, *Applied Equity Analysis*, p. 350. The valuation can also be applied by anchoring on trailing earnings. Forward earnings is, of course, the earnings for the fiscal year in progress.


3. Challenging Market Prices with Fundamentals

1. More from Benjamin Graham and David L. Dodd, *Security Analysis* (New York: McGraw-Hill, 1934). p. 19: “An indefinite and approximate measure of the intrinsic value may be sufficient. To use a homely simile, it is quite possible to decide by inspection that a woman is old enough to vote without knowing her age, or that a man is heavier than he should be without knowing his exact weight.”

2. Sell-side analysts’ consensus forecasts are available under ticker symbols on finance websites such as Yahoo! Finance and Reuters. Thompson Financial Network compiles analysts’ consensus earnings estimates.


4. The recovery of the implied growth rate does not work satisfactorily when residual earnings (to which growth might be applied) are negative. Negative residual earnings imply a price-to-book less than 1, which is not typical. If the accounting renders negative residual earnings, the investor is of course warned: Do not pay more than book value (there probably is no growth involved)! Indeed, one might expect these firms to write down assets under impairment rules. If one anticipates that residual earnings will be positive three or four years ahead (say), the forecast horizon can be extended, but now one is really speculating about a longer-term future. Note that analysts often provide a “five-year growth rate” with their forecasts, but these are notoriously imprecise. In a similar vein to the apparatus here, one can reverse engineer the P/E model of the last chapter.


7. Consider reverse engineering GE’s FCF growth rate from the market price and FCFs in Chapter 2. It is quite difficult, given the negative FCFs.
More generally, a firm on a path of growing investments may have declining FCF, yet warrant a higher stock price.

8. The calculated growth rates are ex-dividend growth rates, not cum-dividend growth rates (though for Cisco, with no dividends, they are the same thing).

9. Accounting numbers are in nominal terms and so is the required return, so this implied growth rate is a nominal (not a “real”) growth rate. The benchmark growth rate will depend on the anticipated inflation at a particular point in time.


11. The conservative estimate recognizes that historical GDP growth in the United States has been exceptional (during “the American century”) and may not persist. As a nominal growth rate, the GDP growth rate reflects anticipated inflation, so should be adjusted at any point in time for the expected inflation rate. This can be identified from yields on government inflation-protected securities (TIPS). Note that, as the required return, \(r\) is also a nominal rate. Expected inflation cancels in the \(r-g\) denominator calculation in a valuation, effectively discounting for growth that comes from expected inflation.

12. Note that the Ohlson-Juettner abnormal earnings growth model of the last chapter builds in a declining growth rate for residual earnings. Expressing abnormal earnings growth as change (growth) in residual earnings,

\[
\text{Value of equity}_0 = \frac{\text{Earnings}_1}{r} + \frac{1}{r} \left[ \frac{\text{Change in RE}_2}{r - g} \right]
\]

for a two-year forecasting horizon. The growth rate now is applied to changes in residual earnings rather than the level of residual earnings, and a constant growth in changes implies a declining growth rate in the levels.

13. The valuation is not quite the same as that for the Fed model:

\[
\text{Value}_0 = B_0 + \frac{(\text{ROCE}_1 - r) \times B_0}{r_f} = \frac{\text{Earnings}_1}{r_f} - \left( \frac{r}{r_f} - 1 \right) B_0,
\]

in contrast to

\[
\text{Value}_0 = \frac{\text{Earnings}_1}{r_f}
\]

The valuation preserves the notion that forward earnings (without growth) are at risk and thus should be charged with a required return that reflects that risk.
14. The model is associated with Edward Yardeni, an economist at Deutsche Morgan Grenfell, who found it in the back pages of a July 1977 Federal Reserve Monetary Policy Report (or so folklore has it).

15. The idea of canceling growth and risk is in the Thomas paper, the source of Figure 3.6, and in James A. Ohlson, “Risk, Growth, and Permanent Earnings,” (New York: New York University, Stern School of Business, 2008). An elaboration of the Thomas paper is in Jacob Thomas and Frank Zhang, “Understanding Two Remarkable Findings About Stock Yields and Growth,” Journal of Portfolio Management 35 (2009), 158–165. The Thomas 2005 paper reports the same pattern as in Figure 3.6 for a number of countries (Japan being an exception).


4. Accounting for Growth from Leverage

1. The ROCE declines in subsequent years in this example because the leverage declines. Debt remains the same, whereas equity increases.

2. The residual earnings for equity is calculated with the required return for equity, 15 percent, that reflects the added risk to the equity holder for leverage. The required return for equity is given by the weighted average cost-of-capital formula in reverse form:

   \[
   \text{Equity cost-of-capital} = \text{Cost-of-capital for the business} + \left[ \frac{\text{Value leverage} \times (\text{Cost-of-capital for the business} - \text{After-tax cost-of-capital for debt})}{50} \right] 
   \]

   \[= 10\% + \left[ \frac{50}{50} \times (10\% - 5\%) \right] = 15\%.
   \]

3. See note 2 for the calculation of the effect of leverage on the required return for equity.

4. If a firm buys back its stock at less than fair value, it will add value (for the shareholders who do not participate in the stock repurchase), and similarly so if it issues debt for more than it is worth. But business firms typically are
not bond or stock traders, trading in their own securities; they take bond and stock prices as given. Other exceptions to financing irrelevance indicated in note 25 in Chapter 1 also apply, including possible tax effects. Note that interest expense referred to in the accounting here is after-tax (effective interest), as is operating income, so the “tax shield” is accommodated in the accounting.

5. As leverage changes over time, so does the required return in future years, so the calculation typically involves a changing required return and residual earnings for each year in the pro forma. The example has been set up here so that the value calculated with constant residual earnings equals that from the more cumbersome calculation.


7. Again, borrowing costs are after-tax (effective interest) borrowing costs.


9. As GAAP reports only one tax number, one must allocate taxes to the two components.

10. The unlevering implicitly discards the familiar return-on-assets, ROA (Operating income/Total assets) as a measure of business profitability. Total assets include financial assets (not used in the business) and exclude enterprise liabilities, and typically result in too-low rates of return. The distinction between financing liabilities and liabilities arising from the business introduces a second type of leverage from operating liabilities—operating liability leverage—which can be analyzed as a source of value from the business, particularly those (like insurance companies) that play a float. See Doron Nissim and Stephen Penman, “Financial Statement Analysis of Leverage and How it Informs About Profitability and Price-to-Book Ratios,” *Review of Accounting Studies* 8 (2003), 531–560.

11. The difference between ROCE and RNOA goes in the other direction if a firm is negatively leveraged, that is, with financial assets in excess of financial liabilities. In the last chapter, we saw an ROCE of 21.1 percent for Cisco
But Cisco has considerably more financial assets than financial debt, so its net debt is negative. Thus its RNOA of 57.1 percent is greater than the ROCE of 21.3 percent; the ROCE hides the real profitability of the business.

12. See Alon Brav, John Graham, Campbell Harvey, and Roni Michaely, “Payout Policies in the 21st Century,” *Journal of Financial Economics* 77 (2005), 483–527. In the same survey, 68 percent of respondents also said that reversing the dilution effects of stock options was another important consideration, a fallacy indeed. But 86 percent also said that they repurchase when they consider their stock to be cheap.

13. None of this necessarily conflicts with the standard business school dogma that the announcement of a stock repurchase increases price because it “signals” that management thinks the stock is underpriced (less than fair value). This “signaling” conjecture has nothing to do with the mechanical increase in EPS and its relation to value, however.

### 5. Accounting for Growth in the Business

1. The applicable accounting is the “lower-of-cost-or-market” rule whereby inventories must be written-down to (fair) market value if that value is below cost, but carried at cost if market value is above cost.

2. The accounting here is also illustrative of LIFO (last in, first out) accounting for inventory where carrying values for inventory are lower when inventory prices are rising.


4. This is not to dismiss the measures for the purpose for which they are designed; the accounting may provide a better incentive mechanism to reward management, for example. As there is an appropriate accounting for value (as a matter of design), so is there an appropriate accounting for incentives and performance measurement (as a matter of design). See Stefan Reichelstein and Sunil Dutta, “Accrual Accounting for Performance Evaluation,” *Review of Accounting Studies* 10 (2005), 527–552.

6. Accounting for Risk and Return

1. Surveys of academics, analysts, and companies put estimates of the market risk premium in a range between 3 and 10 percent, although some of that is due to variation over time. See, for example, a survey conducted by Pablo Fernandez of IESE Business School at http://ssrn.com/abstract=1473225 and http://ssrn.com/abstract=1609563. See also a survey by Ivo Welch of Brown University at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1084918. For a roundtable discussion on the issue, see http://papers.ssrn.com/sol3/papers.cfm?abstract_id=234713. As the cost-of-capital is determined by multiplying the estimated risk premium by an estimated beta, the variation in the cost-of-capital is magnified by beta (and by the estimation error in beta).


3. Behavioral research indicates that risk tolerance does not just vary from individual to individual (man vs. woman, for example), but depends on the context for a given individual. See, for example, Elke U. Weber, Ann-Renée Blais, and Nancy E. Betz, “A Domain-Specific Risk-Attitude Scale: Measuring Risk Perceptions and Risk Behaviors,” Journal of Behavioral Decision Making 15 (2002), 263–290. A DOSPERT scale that has been applied in many contexts is explained on the Center for Decision Sciences website at http://www4.gsb.columbia.edu/decisionsciences/research/tools/dospert.

4. The formula works only for \( RNOA_1 \) greater than \( g \), so is not a panacea. With \( g \) typically 4 percent or less, this covers most firms, but not loss firms. For loss firms, the accounting says that the firm is highly speculative; the firm could fail, so watch out. Firms often report trailing losses (temporarily); forward losses are less common. See Figure 4.1b in Chapter 4 for the typical pattern of RNOA for loss firms.

5. For a forecast horizon two years ahead (as with Cisco Systems in Chapter 3), the reverse-engineering model is

Market price of operations_0 = Net operating assets_0 + \frac{\text{Residual operating income}_1}{1 + r} + \frac{\text{Residual operating income}_2}{(1 + r)(r - g)}.

from which \( r \) can be inferred for any \( g \). The horizon year should not be a year where earnings are forecasted to be temporarily high or low, for then the no-growth valuation would not be a good anchoring point. This can be the case with the immediate forward year.

6. The forecast of 57.1 percent is obtained by unlevering the ROCE forecast of 21.3 percent in Chapter 2 based on analysts’ forward earnings forecasts. One is again cautioned about using analysts’ forecasts; the sustainable RNOA for the trailing year was only 40.1 percent.

7. Professional money managers have a problem defining the risk tolerance of their investors and thus the appropriate hurdle rate. This might be imputed from the style designation of the fund, with offering documents expressly detailing the risk profile adopted. The hurdle rate might also be the rate at which the manager’s incentive return kicks in, for that should be set at the point where the manager is achieving returns in excess of those that compensate for the risk he or she takes.

8. On a levered basis, the weighted-average return formula is

\[
    r = \left[ \frac{B}{P} \times \text{ROCE}_1 \right] + \left[ \left( 1 - \frac{B}{P} \right) \times g \right],
\]

where the expected return is now the expected return from buying the equity (including the debt of the firm) rather than the return from buying the business without the debt, \( B/P \) is the (levered) book-to-price for the equity, and \( g \) is growth in (levered) residual earnings. For Cisco, with a book-to-price of 0.278 and a forward ROCE of 21.25 percent, the no-growth levered expected return is 5.91 percent. This levered expected return reconciles with the unlevered return of 6.97 percent according to the weighted-average cost-of-capital formula (in accordance with the financing irrelevance principle of modern finance):

\[
    \text{Levered } r = \text{Unlevered } r + \left[ \text{Market leverage} \times (\text{Unlevered } r - \text{Return on net debt}) \right] \\
    = 6.97\% - [0.178 \times (6.97\% - 1.0\%)] \\
    = 5.91\%.
\]

(Cisco is negatively levered and thus has a levered return less that the unlevered return.)
9. For the techies, the problem arises because formulas with discount rates in the denominator are not quite correct. Valuation theory discounts expected payoffs in the numerator (to yield risk-neutral expected payoffs), and then discounts at the risk-free rate. See, for example, Mark Rubinstein, “The Valuation of Uncertain Income Streams and the Pricing of Options,” *Bell Journal of Economics and Management Science* 7 (1976), 407–425. How one makes the numerator discount in practice is not worked out, thus the textbook expediency of adding risk to the discount in the denominator. But there is no free lunch, thus the technical problem here (indeed, a fudge).


11. If one follows the annual Shareholder Scorecard published each February in *The Wall Street Journal*, one will routinely see returns of over 300 percent. The Scorecard gives the top and bottom 2.5 percent of returns for 1,000 larger firms, a significant cutoff because it is the point under the normal distribution where firms are supposed to have returns in excess of two standard deviations from the mean. With a mean of (say) 12 percent and a standard deviation of (say) 25 percent, relatively few firms should have annual returns less than −38 percent or greater than 62 percent. In 2007 (a poor year for stocks generally), 2.5 percent of firms had returns greater than 120 percent, with the best firm returning 795 percent. In 1998 (a good year for stocks), 2.5 percent of firms had returns less than −55 percent, with the worst firm returning −83.7 percent.


15. In valuation formulas, growth enters as an expected growth rate (that is, the average growth rate over a number of scenarios). However, rather than pricing average growth rates, appropriate valuation averages prices for alternative growth rates. Jensen’s inequality is the operational principle.

16. The outcomes (in retrospect) included second-order effects of trading partners losing faith in the firm as a whole, and the lowering of the credit rating so important to an insurer, with the resulting cascading third-order effects and effective collapse (save the taxpayers’ reluctant rescue).


7. Pricing Growth


2. The point that E/P, as a yield, could indicate risk (as with a bond yield) was made in Ray Ball, “Anomalies in Relationships Between Securities’ Yields and Yield-Surrogates,” *Journal of Financial Economics* 6 (1978), 103–126.


7. The reader is reminded that the required return for operations and the required return for equity in these expressions are tied together by the weighted average cost of capital formula. See note 8 in Chapter 6.

8. IFRS accounting expenses “research” but not “development” (of products of the research), presumably because the latter is less risky.


10. The returns for some portfolios in exhibit 7.2 may seem to be too large to be explained as reward for risk. But the last half of the twentieth century is a period where (presumably) growth paid off handsomely.

8. Fair Value Accounting and Accounting for Value


3. Fair value accounting measurement is prescribed in FASB Statement of Financial Accounting Standards No. 157, *Fair Value Measurements* (Norwalk, CT: FASB, 2006). At the time of this writing, the FASB and IASB were revisiting the issue of fair value measurement (as a result of the financial crisis), with a final rule expected by late 2010.

4. In accounting terms, the holdings were part of “available-for-sale” investments. At the time, GAAP did not book unrealized gains and losses on these investments to the income statement, but added them directly to shareholders’ equity (in an accounting operation called “dirty-surplus accounting”).


7. Interestingly, investment bankers (for a variety of reasons) favor fair value accounting.


11. The documentary film, *Enron: The Smartest Guys in the Room* (2005), confirms that the celebration was not fiction (though there may be a question about the champagne). The film is based on a book of a similar title by Bethany McLean and Peter Elkind (New York, Portfolio, 2004).


14. The claim is also suspect because, although bank loans (at the time of this writing) are not explicitly fair valued to exit value, they are quasi-fair valued with discounts for estimates of default. These estimates are similar to Level 3 fair values, though transactional information on incurred losses and nonperformance are incorporated in the estimate. (The issue is taken up in the next chapter.) At the time of this writing, the FASB was proposing to apply formal fair value accounting to all bank loans, applicable in 2013.

15. The point pertains to the issue (currently on the table) of whether equity investments should be fair valued or accounted for under the (historical cost) equity method or proportional consolidation.

16. The distinction points to fair value accounting being appropriate for a bank’s trading book but not its bank book. Although fair value accounting is appropriate for a pure trading operation, one must be sensitive to the scam of restructuring a production operation to look like a trading operation to get the “benefits” of fair value accounting (like Enron did).

17. The warning applies even to an active investment fund that bets on market prices. An active investment manager supposedly holds or shorts investments that are mispriced, so the market price of the portfolio holdings is not fair value. And the active manager must not only find investments that will appreciate in price, but also liquidate the positions at the right time. Active investing is not about holding investments, but about execution; any schmuck can hold a stock.

18. The discussion here refers to financing debt (that finances business operations). Debt as part of a business of running a matched book (in a financial institution) would be marked to market if the assets on the other side of the book are also marked to market under the one-for-one principle. In this case, unrealized gains and losses on debt net out against unrealized losses and gains on the assets.


20. These examples, as well as a wider discussion of intangible asset accounting, are in Stephen H. Penman, “Accounting for Intangible Assets:


22. Note, however, that the CFA Institute, the professional organization of security analysts, endorses fair value accounting enthusiastically (though some suggest that this position is in conflict with the rank-and-file analyst on the Street). See *A Comprehensive Business Reporting Model: Financial Reporting for Investors* (Charlottesville, VA: CFA Institute Centre for Financial Market Integrity, 2007).

23. See Ilia Dichev and Vicki Wei Tang, “Matching and the Changing Properties of Accounting Earnings Over the Last 40 Years” *Accounting Review* 83 (2008), 1425–1460. This study covers the 1,000 largest U.S. firms during the last forty years, and finds that earnings volatility has more than doubled during the period, whereas earnings persistence has fallen from 0.91 to 0.65, a substantial deterioration in the properties of accounting earnings. In contrast, the study finds little change in the properties of the underlying revenues, expenses, and cash flows over the same period, indicating that the bulk of the changes in the properties of earnings are due to changes in the accounting rather than changes in the real economy. Research has also shown that the relation between stock prices and reported earnings has declined over time. See, for example, Daniel W. Collins, Edward L. Maydew, and Ira S. Weiss, “Changes in the Value-Relevance of Earnings and Book Values over the Past Forty Years,” *Journal of Accounting and Economics* 24 (1997), 39–67.

9. Adding Value to Accounting


5. The 200 number is reported in Katherine A. Schipper, Catherine M. Schrand, Terry Shevlin, and Jeffrey T. Wilks, “Reconsidering Revenue Recognition,” *Accounting Horizons* 23 (2009), 55–68.

6. At the time of this writing, the IASB and FASB had just published an exposure draft for a new standard on revenue recognition. See Exposure Draft of the International Accounting Standards Board, *Revenue from Contracts with Customers* (London, IASB, June 2010) and a similar document from the FASB.

7. In addition to revenue recognition, the accounting boards are currently redoing the accounting for leases, pensions, fair value measurement, financial instruments, income taxes, allowance for credit losses, and off-balance sheet vehicles, and have recently written new standards on stock option accounting, put options, and impairment accounting in response to failures of existing accounting. The FASB has made a number of attempts to deal with the accounting for off-balance sheet vehicles, including FASB Statements 125 (in 1996) and 140 (in 2000), FIN 46 in the wake of Enron, and Statements 166 and 167 in the wake of the financial crisis in 2010.

8. The FASB and IASB have accepted a mandate for “general-purpose” financial reporting, an impossible task through one set of books and a reason for some haziness in GAAP. As an example, take the simple issue of treatment of interest. Interest is an expense from the point of view of the shareholder, and dividends are a distribution. But from the bondholder’s point of view, interest is not an expense but a distribution (and the bondholder is
concerned about dividends reducing the value left in the firm to cover the debt claim).


10. The FASB and IFRS went some of the way in correcting the situation for employee stock options with Statement 123R in the United States and IFRS 2 internationally. They apply “grant-date” accounting; the value of the options at grant date is an expense. But the grant-date expense is not the expense to the shareholder. That happens at exercise date when the shareholder surrenders value. Indeed, the GAAP and IFRS accounting means that firms will record a grant-date expense that is never incurred if the option fails to go into the money to be exercised. In short, there is no settling up against shareholder value. Such accounting invites grant-date scheming, like backdating and choosing to issue options when prices are down; the accounting plays to the management rather than the shareholder.


13. In their draft Conceptual Framework, the FASB and IASB have abandoned “conservatism” as a qualitative characteristic of accounting, choosing instead “neutrality” and “absence of bias.”

14. The observation that balance sheet costs become expenses for profit assessment in the income statement has implications for the balance sheet treatment of transactions. The accountant might not record an investment in R&D on the balance sheet because there is too much uncertainty as to whether the
R&D will pay off: It is not hard enough. But he or she also might not do so because an amortization schedule against revenue is so speculative, for speculative amortizations ruin earnings measurement. (Uncertainty about payoffs and the pattern of payoffs for amortization are presumably highly correlated). In this regard, note that U.S. GAAP does not permit capitalization of R&D costs on the balance sheet, whereas IFRS allows capitalized development (after the research stage when products are apparent and there is less uncertainty) but not basic research (where the outcome to the research is still uncertain).


17. FASB Statement No. 146, issued in 2002, restricts the ability to manipulate income with restructuring charges. Firms must now have an obligation to make specific payments under the restructuring rather than just a restructuring plan.