

Notes

I. Return to Fundamentals

1. There are at least 310 million of you in the world who own equity shares directly, 173 million in countries with developed stock markets, and 137 million in countries with emerging markets. In addition, at least 503 million of you own shares indirectly through pension fund holdings. As reported in Paul A. Grout, William L. Megginson, and Ania Zalewska, “One Half-Billion Shareholders and Counting—Determinants of Individual Share Ownership Around the World” (2009), at <http://ssrn.com/abstract=1457482>.

2. The S&P 500 index subsequently dropped from 1499 at the beginning of 2000 to 815 by mid-2002. By mid-2002, Cisco Systems traded at \$14, down from \$77 in early 2000. Dell Computer dropped from \$50 in 2000 to \$26 by mid-2002. For an analysis of the 1990s bubble, see Carl Haacke, *Frenzy: Bubbles, Busts, and How to Come Out Ahead* (New York: Palgrave Macmillan, 2004).

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.

4. See Benjamin Graham, *The Intelligent Investor*, rev. ed. (New York: Harper & Row, 1973). The first edition was published in 1949, and a reprint in 2005 with a preface by Warren E. Buffett. The other classic, with considerably more on technique, is Benjamin Graham, David L. Dodd, and Sidney Cottle, *Security Analysis: Principles and Technique*, 4th ed. (New York: McGraw-Hill, 1962). The first edition, authored by Graham and Dodd, was published in

1934. A later incarnation is Sidney Cottle, Roger F. Murray, and Frank E. Block, *Graham and Dodd's Security Analysis*, 5th ed. (New York, McGraw-Hill, 1988). A more recent book in the same vein (of what has become known as “value investing”) is Bruce C. N. Greenwald, Judd Kahn, Paul D. Sonkin, and Michael van Biema, *Value Investing: From Graham to Buffett and Beyond* (New York: Wiley, 2001).

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).

8. Reviews of modern finance are in Peter L. Bernstein, *Capital Ideas: The Improbable Origins of Modern Wall Street* (New York: Wiley, 1992), Peter L. Bernstein, *Capital Ideas Evolving* (New York: Wiley, 2007), and Mark Rubinstein, *A History of the Theory of Investments: My Annotated Bibliography* (Hoboken, NJ: Wiley, 2006).

9. The formal statement of the efficient market hypothesis is in Eugene Fama, “Efficient Capital Markets: A Review of Theory and Empirical Work,” *Journal of Finance* 25 (1970), 383–417, though the idea has its origins in earlier rational expectations theory and indeed in Hayek's insight on the informativeness of the price system. See also Paul Samuelson, “Proof That Properly Anticipated Prices Fluctuate Randomly,” *Industrial Management Review* 6 (1965), 41–49 and, for the practical implications, Burton Malkiel, *A Random Walk Down Wall Street* (New York: W. W. Norton, 1973), now in its ninth edition.

Fama provides an update on the hypothesis in “Efficient Capital Markets: II,” *Journal of Finance* 45 (1991), 1575–1617. For a history of the efficient markets debate, blow by blow, see Justin Fox, *The Myth of the Rational Market* (New York: HarperCollins, 2009).

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.”

14. Friedrich von Hayek, “The Use of Knowledge in Society,” *American Economic Review* 35 (1945), 519–530.

15. Robert E. Lucas Jr., “Expectations and the Neutrality of Money,” *Journal of Economic Theory* 4 (1972), 103–124.

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.

18. Merton H. Miller and Franco Modigliani, “Dividend Policy, Growth, and the Valuation of Shares,” *Journal of Business* 34 (1961), 411–433.

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.

20. Graham, Dodd, and Cottle, *Security Analysis*, 4th ed., pp. 515–518 put weight on dividends in their valuation methods.

21. Harry M. Markowitz, "Portfolio Selection," *Journal of Finance* 7 (1952), 77–91. The idea is also credited to Andrew D. Roy, "Safety First and the Holding of Assets," *Econometrica* 20 (1952), 431–449.

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).

23. As quoted in Bernstein, *Capital Ideas: Improbable Origins*.

24. Franco Modigliani and Merton H. Miller, "The Cost of Capital, Corporation Finance and the Theory of Investments," *American Economic Review* 48 (1958), 261–297.

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&M 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.

26. For a discussion on a product focus in both accounting and finance research, see Stephen Penman, "Eye of the Prize: Directions for Accounting Research," *China Accounting Review* 6 (2008), 465–476.

27. As reported in the *Financial Times* (U.S. edition), November 3, 2009, p. 1.

28. The historical analysis to support this investment advice is in Jeremy Siegel, *Stocks for the Long Run*, 2nd ed. (New York: McGraw-Hill, 1998).

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*

Finance 50 (1995), 853–873. 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>.

30. For a tabulation of historical returns from around the world, see Elroy Dimson, Paul Marsh, and Mike Staunton, *Triumph of the Optimists: 101 Years of Global Investment Returns* (Princeton, NJ: Princeton University Press, 2002).

31. 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.

32. The phenomenon is investigated in François Longin and Bruno Solnik, “Extreme Correlation of International Equity Markets,” *Journal of Finance* 56 (2001), 649–676, and Andrew Ang and Geert Bekaert, “International Asset Diversification with Regime Shifts,” *Review of Financial Studies* 15 (2002), 1137–1187. Fads and fashions or just common investment strategies (in hedge funds) cause investors to crowd into certain assets and induce correlation in returns among investors, leading to large swings in prices when they move together. See Amir Khandani and Andrew Lo, “What Happened to the Quants in August 2007?” Working paper, Sloan School, MIT (2007) for an account of cascading hedge fund losses as investors unwound positions. The same phenomenon was seen in the unwinding of the carry trade and the rush from mortgage-backed securities in 2007–2008.

33. Eugene Fama and Kenneth French, “The Cross-Section of Expected Returns,” *Journal of Finance* 47 (1992), 427–465; “Common Risk Factors in the Returns of Stocks and Bonds,” *Journal of Financial Economics* 33 (1993), 3–56; “Multi-Factor Explanations of Asset Pricing Anomalies,” *Journal of Finance* 51 (1996), 55–84.

34. 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.

35. For a critical review of financial engineering models, see Riccardo Rebonato, *Plight of the Fortune Tellers: Why We Need to Manage Financial Risk Differently* (Princeton, NJ: Princeton University Press, 2007).

36. For more reflections along these lines, see Hans J. Blommestein, “The Financial Crisis as a Symbol of the Failure of Academic Finance? (A Methodological Digression)” at <http://ssrn.com/abstract=1477399>.

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,

$$\text{Value}_0 = \frac{\$5}{0.05} = \$100,$$

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:

$$\text{Future book value} = \$100 + \$25 - \$25 = \$100.$$

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

4. See Peter D. Easton, Trevor S. Harris, and James A. Ohlson, “Aggregate Accounting Earnings Can Explain Most of Security Returns: The Case of Long Event Windows,” *Journal of Accounting and Economics* 15 (1992), 119–142, and James A. Ohlson and Stephen H. Penman, “Disaggregated Accounting Data as Explanatory Variables for Returns,” *Journal of Accounting, Auditing and Finance* (1992), 553–573.

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.

6. Graham’s warnings about growth survive in modern texts of fundamental investing. See Bruce C. N. Greenwald, Judd Kahn, Paul D. Sonkin, and Michael van Biema, *Value Investing: From Graham to Buffett and Beyond* (New

York: Wiley, 2001), p. x, pp. 31–35, and pp. 42–43. Note that Benjamin Graham, David L. Dodd, and Sidney Cottle, *Security Analysis: Principles and Technique* 4th ed. (New York: McGraw-Hill, 1962), proposes, in Chapter 39, some (rather ad hoc) methods for dealing with growth that place limits on growth multipliers, as does Sidney Cottle, Roger F. Murray, and Frank E. Block, *Graham and Dodd's Security Analysis*, 5th ed. (New York, McGraw-Hill, 1988), pp. 542–546.

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,

Preinreich recognizes the model in a prize essay by a student, J. H. Bourne in *Accountant*, London, September 22, 1888, pp. 605–606 (as referenced by Preinreich). Strangely, the model was ignored for many years. John Burr Williams's *The Theory of Investment Value* (Cambridge, MA: Harvard University Press, 1938) promoted dividends as the fundamental for equity valuation, and academics have followed that tradition. U.S. texts have modified the dividend discount model to focus on free cash flows within the firm rather than cash flows to shareholders (dividends), and discounted cash flow analysis was the premier valuation technique in investment houses for many years (less so in Europe). Some relatively recent expositions of the residual earnings model are in Edgar O. Edwards and Philip W. Bell, *The Theory and Measurement of Business Income* (Berkeley: University of California Press, 1961), 48–54 and 66–69, and Ken Peasnell, “Some Formal Connections Between Economic Values and Yields and Accounting Numbers,” *Journal of Business Finance and Accounting* (1982), 361–381. The residual earnings model features prominently in modern texts on financial statement analysis and valuation (less so in finance investment texts that stick to cash flow valuation). See, for example, Peter D. Easton, Mary Lea McAnally, Patricia M. Fairfield, Xiao-Jun Zhang, and Robert F. Halsey, *Financial Statement Analysis and Valuation*, 2nd ed. (Chicago: Cambridge Publishers, 2010); James M. Wahlen, Stephen P. Baginski, and Mark Bradshaw, *Financial Reporting, Financial Statement Analysis and Valuation: A Strategic Perspective* (Cincinnati: South-Western, 2010); and Stephen H. Penman, *Financial Statement Analysis and Security Valuation*, 4th ed. (New York: McGraw-Hill Irwin, 2010). For a focus on practitioners, see James English, *Applied Equity Analysis* (New York: McGraw-Hill, 2001).

12. James A. Ohlson, “Earnings, Book Values, and Dividends in Equity Valuation,” *Contemporary Accounting Research* 12 (1995), 661–687 shows how valuation based on earnings and dividends is dividend irrelevant, provided that dividends are not included in earnings but rather are paid out of book value. This paper provides a foundation for accounting-based valuation, for it reconciles accounting principles to the foundational (Miller and Modigliani) principle of modern finance. Intuitively, dividend payments reduce prices one-for-one under Miller and Modigliani propositions but also reduce book value one-for-one (under *Accounting Principle 1*). GAAP and IFRS accounting follow this treatment of dividends and indeed empirical analysis demonstrates how GAAP accounting exhibits the Miller and Modigliani properties. See Stephen H. Penman and Theodore Sougiannis, “The Dividend Displacement Property and the Substitution of Anticipated Earnings for Dividends in Equity Valuation,” *The Accounting Review* 72 (1997), 1–21.

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

and the Terminal Value Calculation for the Dividend Discount Model,” *Review of Accounting Studies* 2 (1997), 303–323.

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.

15. See Stephen H. Penman and Theodore Sougiannis, “A Comparison of Dividends, Cash Flow, and Earnings Approaches to Valuation,” *Contemporary Accounting Research* 15 (1998), 343–383, and Stephen H. Penman, “On Comparing Cash Flow and Accrual Accounting Models for Use in Equity Valuation,” *Contemporary Accounting Research* 18 (2001), 681–692.

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 is 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.

19. See James A. Ohlson and Beate E. Juettner-Nauroth, “Expected EPS and EPS Growth as Determinants of Value,” *Review of Accounting Studies* 10 (2005), 349–365. For elaboration, see James A. Ohlson and Zhan Gao, “Earnings, Earnings Growth and Value,” *Foundations and Trends in Accounting* 1 (2006), 1–70.

20. See again Peter D. Easton, Trevor S. Harris, and James A. Ohlson, “Accounting Earnings Can Explain Most Security Returns: The Case of Long-Event Windows,” *Journal of Accounting and Economics* 15 (1992), 119–142.

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.

3. Research indicates that forecasts developed from financial statement analysis successfully challenge analysts’ forecasts and stock recommendations. For a recent example, see James M. Wahlen and Matthew M. Wieland, “Can Financial Statement Analysis Beat Consensus Analysts’ Recommendations?” *Review of Accounting Studies* 16, no. 1 (2011).

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.

5. The scheme is laid out more fully in Stephen H. Penman, “Handling Valuation Models,” *Journal of Applied Corporate Finance* 18 (2006), 48–55.

6. John Burr Williams, *The Theory of Investment Value* (Burlington, VT: Fraser Publishing, 1997), p. 188 (an exact copy of the 1938 Harvard University Press edition) and Alfred Rappaport and Michael J. Mauboussin, *Expectations Investing* (Cambridge, MA: Harvard Business Press, 2001).

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.

10. The correlation between the growth rates and subsequent returns in excess of the ten-year U.S. government bond yield is -0.14 . (Excess returns adjust for changing interest rates.) For an analysis of value-to-price ratios for the Dow stocks, with changing discount rates and residual earnings valuation, see Charles M. C. Lee, James Meyers, and Bhaskaran Swaminathan, “What Is the Intrinsic Value of the Dow?” *Journal of Finance* 54 (1999), 1693–1741.

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).

16. As reported in Stephen H. Penman and Francesco Reggiani, “Returns to Buying Earnings and Book Value: Accounting for Growth and Risk,” unpublished paper, Columbia University and Bocconi University (2008), at <http://ssrn.com/abstract=1536618>.

17. See Robert D. Arnott, Feifer Li, and Katrina F. Sherrerd, “Clairvoyant Value and the Value Effect,” *Journal of Portfolio Management* 35 (2009), 12–26, and Robert Arnott, Feifei Li, and Katrina F. Sherrerd, “Clairvoyant Value II : The Growth/Value Cycle,” *Journal of Portfolio Management* 35 (2009), 142–157.

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:

$$\begin{aligned} \text{Equity cost-of-capital} &= \text{Cost-of-capital for the business} + [\text{Value leverage} \\ &\quad \times (\text{Cost-of-capital for the business} \\ &\quad - \text{After-tax cost-of-capital for debt})] \end{aligned}$$

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

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.

6. The introduction to the following paper surveys the empirical research and actually documents negative returns to leverage after controlling for other risk factors in standard asset pricing models; see Stephen Penman, Scott Richardson, and İrem Tuna, “The Book-to-Price Effect in Stock Returns: Accounting for Leverage,” *Journal of Accounting Research* 45 (2007), 427–467.

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

8. The FASB and IASB are currently engaged in a project to redesign financial statement presentation to separate business activities from financing activities (among other things). For a comprehensive design, see Stephen Penman, *The Design of Financial Statements*, White Paper No. 3, Center for Excellence in Accounting and Security Analysis, Columbia Business School (2010). The mechanics of reformulating financial statements are in Stephen H. Penman, *Financial Statement Analysis and Security Valuation*, 4th ed. (New York, McGraw-Hill Irwin, 2010), chap. 9.

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

Systems. 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.

3. For an account of momentum accounting during the 1990s, see Stephen H. Penman, “The Quality of Financial Statements: Perspectives from the Recent Stock Market Bubble,” *Accounting Horizons* (Suppl. 2003), 77–96.

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.

5. The effects of conservative accounting are modeled in James A. Ohlson and Gerald A. Feltham, “Valuation and Clean Surplus Accounting for Operating and Financing Activities,” *Contemporary Accounting Research* 11 (1995), 689–731; Xiao-Jun Zhang, “Conservative Accounting and Equity Valuation,” *Journal of Accounting and Economics* 29 (2000), 125–149; and William H. Beaver and Stephen G. Ryan, “Conditional and Unconditional Conservatism: Concepts and Modeling,” *Review of Accounting Studies* 10 (2005), 269–309. For

empirical documentation of the effects, see Stephen H. Penman and Xiao-Jun Zhang, “Accounting Conservatism, Quality of Earnings, and Stock Returns,” *The Accounting Review* 77 (2002), 237–264; and Steven J. Monahan, “Conservatism, Growth, and the Role of Accounting Numbers in the Fundamental Analysis Process,” *Review of Accounting Studies* 10 (2005), 227–260.

6. Note that the dividends are reduced from those without growth: Investment requires retention and retention means lower dividends. Also note that, despite the lower payout, the value is the same; dividend irrelevance in action.

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).

2. The point was made at the time of the crisis by John Cochrane, “Is Now the Time to Buy Stocks? Here Is What the Evidence Suggests,” *Wall Street Journal*, November 12, 2008, p. A19.

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/decisionciences/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

$$\begin{aligned} \text{Market price of operations}_0 &= \text{Net operating assets}_0 \\ &+ \frac{\text{Residual operating income}_1}{1+r} \\ &+ \frac{\text{Residual operating income}_2}{(1+r) \times (r-g)}. \end{aligned}$$

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):

$$\begin{aligned} \text{Levered } r &= \text{Unlevered } r + [\text{Market leverage} \\ &\quad \times (\text{Unlevered } r - \text{Return on net debt})] \\ &= 6.97\% - [0.178 \times (6.97\% - 1.0\%)] \\ &= 5.91\%. \end{aligned}$$

(Cisco is negatively levered and thus has a levered return less than 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).

10. Fama’s early work, fifty years ago, documents fat-tailed empirical distributions. See Eugene Fama, “The Behavior of Stock Market Prices,” *Journal of Business* 38 (1965), 34–105. Attempts to formalize the observation in asset pricing—replacing normal distributions with (fat-tailed) stable Paretian distributions or a mixture of normal distributions, for example—have not proved successful. For a recent rendition of the “fat-tail” phenomenon, see Nassim Nicholas Taleb, *The Black Swan: The Impact of the Highly Improbable* (New York: Random House, 2007).

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.

12. Frank Knight, *Risk, Uncertainty, and Profit* (Boston: Houghton Mifflin, 1921).

13. Recent research in finance has experimented with “cash-flow betas” (misnamed, for they are actually based on earnings and book rates-of-return) and find that the measures explain puzzles arising from using stock return betas. See, for example, Alexander Nekrasov and Pervin Shroff, “Fundamentals-Based Risk Measurement in Valuation,” *The Accounting Review* 84 (2009), 1983–2011, and Randolph B. Cohen, Christopher Polk, and Tuomo Vuolteenaho, “The Price is (Almost) Right,” *Journal of Finance* 64 (2009), 2739–2782. Years ago, Barr Rosenberg set about estimating “fundamental betas” that become the initial product of the BARRA firm. See Barr Rosenberg and Walt McKibben, “The Prediction of Systematic and Specific Risk in Common Stocks,” *Journal of Financial and Quantitative Analysis* 8 (1973), 317–333.

14. Refer to Stephen H. Penman, *Financial Statement Analysis and Security Valuation*, 4th ed. (New York, McGraw-Hill Irwin, 2010), chapter 18 for elaboration.

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).

17. See, for example, Dirk Bezemer, "Why Some Economists Could See It Coming," *Financial Times*, September 8, 2009.

18. Two recent books are good reading here. See Riccardo Rebonato, *Plight of the Fortune Tellers: Why We Need to Manage Financial Risk Differently* (Princeton, NJ: Princeton University Press, 2007), and Kenneth A. Posner, *Stalking the Black Swan: Research and Decision Making in a World of Extreme Volatility* (New York, Columbia University Press, 2010).

19. On accounting and forecasting, see Stephen H. Penman, "Financial Forecasting, Risk, and Valuation: Accounting for the Future," *Abacus* 46 (2010), 211–228.

7. Pricing Growth

1. Standard significance tests show the return differences between high and low portfolios are statistically significant. The returns in the exhibit are from a period when investors said the strategy worked so are not an independent (out-of-sample) validation of their strategies. The returns to E/P were brought to prominence (in academic journals) in Sanjoy Basu, "Investment Performance of Common Stocks in Relation to Their Price-Earnings Ratios: A Test of the Efficient Market Hypothesis," *Journal of Finance* 32 (1977), 663–682 and Sanjoy Basu, "The Relationship Between Earnings Yield, Market Value, and Return for NYSE Common Stocks: Further Evidence," *Journal of Financial Economics* 12 (1983), 129–156. The returns to B/P were brought to the fore in Eugene Fama and Kenneth French, "The Cross-Section of Expected Stock Returns," *Journal of Finance* 47 (1992), 427–465. Benjamin Graham and cohorts had the idea firmly in mind before these academic renderings.

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.

3. The most comprehensive documentation is in Eugene Fama and Kenneth French, “The Cross-Section of Expected Stock Returns,” *Journal of Finance* 47 (1992), 427–465.

4. See Eugene Fama and Kenneth French, “Common Risk Factors in the Returns on Stocks and Bonds,” *Journal of Financial Economics* 33 (1993), 3–56, and Eugene Fama and Kenneth French, “Multifactor Explanations of Asset Pricing Anomalies,” *Journal of Finance* 51 (1996), 55–84. Others have added additional factors to the model; a momentum factor and a liquidity factor, for example.

5. See Stephen H. Penman, Scott A. Richardson, and İrem Tuna, “The Book-to-Price Effect in Stock Returns: Accounting for Leverage,” *Journal of Accounting Research* 45 (2007), 427–467.

6. Much of what follows is based on Stephen H. Penman and Francesco Reggiani, “Returns to Buying Earnings and Book Value: Accounting for Growth and Risk,” unpublished paper, Columbia University and Bocconi University (2008), at <http://ssrn.com/abstract=1536618>.

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.

9. In principle, one could conceive of an accounting where the growth rate corresponds to risk, one-to-one, as in James Ohlson, “Risk, Growth, and Permanent Earnings,” unpublished paper, New York University Stern School of Business (2008).

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

1. Some initial proposals for the new Conceptual Framework are in an FASB Exposure Draft, “Conceptual Framework for Financial Reporting: The Objective of Financial Reporting and Qualitative Characteristics and Constraints of Decision-Useful Financial Reporting,” Financial Accounting Series 1570-100 (2008), available at www.fasb.org. A similar document has been published by the IASB at www.iasb.org.

2. This chapter is based loosely on a CEASA White Paper on fair value accounting. See Doron Nissim and Stephen H. Penman, *Principles for the Application of Fair Value Accounting*, White Paper No. 2, Center for Excellence in Accounting and Security Analysis, Columbia Business School, 2008. See also, Stephen H. Penman, “Financial Reporting Quality: Is Fair Value a Plus or a

Minus?” *Accounting and Business Research* (International Accounting Policy Forum Special Issue) 37 (2007), 33–44.

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”).

5. For scenarios where “momentum accounting” promotes momentum pricing, see Stephen H. Penman, “The Quality of Financial Statements: Perspectives from the Recent Stock Market Bubble,” *Accounting Horizons* (Suppl, 2003), 77–96.

6. For descriptions of how fair value accounting can induce feedback effects that amplify price movements, see Guillaume Plantin, Haresh Sapra, and Hyun Song Shin, “Marking to Market: Panacea or Pandora’s Box?” *Journal of Accounting Research* 46 (2008), 435–460; and Tobias Adrian and Hyun Song Shin, “Liquidity and Leverage,” Working Paper, Federal Reserve Bank of New York and Princeton University (2007). See also, Haresh Sapra, “The Economic Trade-Offs in The Fair Value Debate,” Working Paper No. 09-35, The University of Chicago Booth School of Business at <http://papers.ssrn.com/abstract=1481777>, and European Central Bank, “Fair Value Accounting and Financial Stability,” *Occasional Paper Series, No. 13* (April, 2004).

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

8. As reported in the *Wall Street Journal*, February 26, 2009, p. A13.

9. For further exploration of the interplay between a bank’s actions and the market prices of loans, see Alexander Bleck and Pingyang Gao, “Where Does the Information in Mark-to-Market Come From?” The University of Chicago Booth School of Business (2009) at <http://ssrn.com/abstract=1507342>.

10. For the interplay between mark-to-market accounting and liquidity pricing, see Franklin Allen and Elena Carletti, “Mark-to-Market Accounting and Liquidity Pricing,” *Journal of Accounting and Economics* 45 (2008), 358–378.

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).

12. International Monetary Fund, *Global Financial Stability Report: Financial Stress and Deleveraging, Macrofinancial Implications and Policy* (Washington, DC, IMF, 2008), chap. 3.

13. See, for example, Christian Laux and Christian Leuz, “Did Fair-Value Accounting Contribute to the Financial Crisis?” *Journal of Economic Perspectives* 24 (2010), 93–118, and Mary Barth and Wayne Landsman, “How Did Financial Reporting Contribute to the Financial Crisis?” *European Accounting Review* 19 (2010), 399–423. For another critique of fair value accounting in the crisis, see Vincent Bignon, Yuri Biondi, and Xavier Ragot, “An Economic Analysis of Fair Value: Accounting as a Vector of Crisis,” at <http://ssrn.com/abstract=1474228>.

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.

19. The relation first appears in Peter D. Easton, Trevor S. Harris, and James A. Ohlson, “Accounting Earnings Can Explain Most Security Returns: The Case of Long-Event Windows,” *Journal of Accounting and Economics* 15 (1992), 119–142, but accounting textbooks of old used to discuss the canceling error property.

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

There Is Also an Income Statement,” *Abacus* 45 (2009), 359–371 and in a CEASA Occasional Paper at http://www4.gsb.columbia.edu/ceasa/research/papers/occasional_papers. See also Douglas J. Skinner, “Accounting for Intangibles—A Critical Review of Policy Recommendations” *Accounting and Business Research* 38 (2008), 191–204.

21. For a critique of the balance sheet focus, see Ilia Dichev, “On the Balance Sheet-Based Model of Financial Reporting,” CEASA Occasional Paper (2007); and (with a focus on banking), Andreas Bezold, “The Subject Matter of Financial Reporting: The Conflict Between Cash Conversion Cycles and Fair Value in the Measurement of Income,” CEASA Occasional Paper (2009). Both papers are available at http://www4.gsb.columbia.edu/ceasa/research/papers/occasional_papers.

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

1. For an analysis of GAAP accounting quality for valuation, see Stephen H. Penman, *Financial Statement Analysis and Valuation*, 4th ed. (New York, McGraw-Hill, 2010) chap. 17. See also Nahum D. Melumad and Doron Nissim, “Line-Item Analysis of Earnings Quality,” *Foundations and Trends in Accounting* 3 (2009), 87–221; and Patricia M. Dechow and Catherine M. Schrand, *Earnings Quality* (The Research Foundation of CFA Institute, 2004).

2. For a review of many of these studies, 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.

3. A long line of papers document that analysts overreact to past earnings changes and underreact to other information, but on average tend to be overly optimistic in their forecasts. For a recent paper, see James A. Wahlen and Matthew A. Wieland, “Can Financial Statement Analysis Beat Consensus Analysts’ Recommendations?” *Review of Accounting Studies* 16 (2011), Issue No. 1, forthcoming. On analysts failing to see the differential persistence of accruals and cash flows, see Mark T. Bradshaw, Scott A. Richardson, and Richard G. Sloan, “Do Analysts and Auditors Use Information in Accruals?” *Journal of Accounting Research* 39 (2001), 45–74.

4. The Conceptual Framework is still evolving, but some initial proposals are in an FASB Exposure Draft, “Conceptual Framework for Financial Reporting: The Objective of Financial Reporting and Qualitative Characteristics and Constraints of Decision-Useful Financial Reporting,” Financial Accounting Series 1570-100 (2008), available at www.fasb.org. A similar document has been published by the IASB at www.iasb.org.

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).

9. These principles are similar to those in a committee report of the American Accounting Association, “A Framework for Financial Accounting Standards: Issues and a Suggested Model,” Financial Accounting Standards Committee of the American Accounting Association, *Accounting Horizons* 24 (2010), 471–485, for which (to be transparent) your author, along with James Ohlson, is a principal author.

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.

11. For a layout of the appropriate accounting for shareholders, see James A. Ohlson and Stephen H. Penman, “Debt vs. Equity: Accounting for Claims Contingent on Firms’ Common Stock Performance,” White Paper No. 1, Center for Excellence in Accounting and Security Analysis, Columbia Business School (2005). See also Stephen H. Penman and James A. Ohlson, “Accounting for Employee Stock Options and Other Contingent Equity Claims: Taking a Shareholders’ View,” *Journal of Applied Corporate Finance* 19 (2007), 24–29.

12. See International Accounting Standards Board, Discussion Paper, *Preliminary Views on Financial Statement Presentation* (London: IASB, October 2008) and a paper from the FASB with the same title and date. For an alternative design that aligns closer with accounting for value, see Stephen H. Penman, *The Design of Financial Statements*, White Paper No. 4, Center for Excellence in Accounting and Security Analysis, Columbia Business School, 2010. Templates for reformulating balance sheets for equity valuation are in that document, and also in Stephen H. Penman, *Financial Statement Analysis and Security Valuation*, 4th ed. (New York: McGraw-Hill, 2010), chap. 9.

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).

15. The suggestion, from James Ohlson, is in an American Accounting Association paper on revenue recognition. See “Accounting for Revenues: A Framework for Standard Setting,” Financial Accounting Standards Committee of the American Accounting Association (2010).

16. For a transactions approach to revenue and profit recognition, see a committee report, “Accounting for Revenues: A Framework for Standard Setting,” Financial Accounting Standards Committee of the American Accounting Association (2010).

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.

18. The recommendation is made in American Accounting Association, Financial Accounting Standards Committee, “A Framework for Financial Accounting Standards,” *Accounting Horizons* 24 (2010), 471–485.