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The Valuation Handbook

VALUATION TECHNIQUES FROM TODAY'S TOP PRACTITIONERS

Rawley Thomas | Benton E. Gup

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Valuation Techniques from Today's Top Practitioners

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To Jean, Andy, Lincoln, Jeremy, and Carol

—Benton E. Gup

To Carol Ann, John, Alexis, Kim, and Robert

—Rawley Thomas

Preface

VALUATIONS ARE IMPORTANT

Valuations are important simply because they form the basis for making decisions involving significant amounts of money or wealth transferred from one party to another.

Why do people perform valuations? What are they used for? The following is a short list, which is by no means complete. Valuations are normally done to:

- Buy or sell a stock of a publicly held firm.
- Buy or sell a privately held business.
- Determine how much estate tax is owed the government.
- Settle a divorce.
- Resolve a dispute with a minority shareholder who wants out.
- Give an accounting auditor value basis for reporting.
- Determine the amount of compensation for executives, division or business unit managers, and employee-owners.
- Determine whether to proceed with strategic initiatives and/or major investment opportunities.
- Offer fairness opinions in the purchase or sale of companies.

VALUATION CHALLENGES: WHICH TECHNIQUES TO APPLY

Broadly, valuation techniques may divide into two categories:

1. Those relying on quoted market prices of the specific security.
2. Those applying advanced professional knowledge to a set of data.

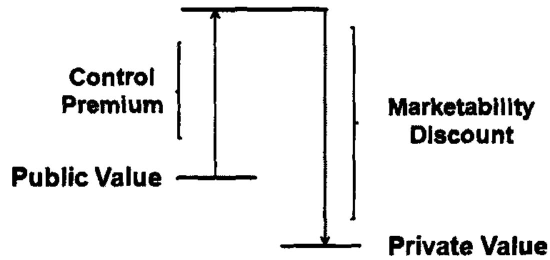

EXHIBIT P1.1 What is the Purpose of Valuation?

The second category may further divide into three subcategories:

1. Applying a set of comparable company valuations to the subject firm.
2. Labor-intensive, expert techniques, such as discounted cash flow.
3. Use of multiple regressions or expert systems.

As the chapters in this book suggest, the lines of demarcation between these categories and subcategories blur in actual application. As illustrated in Exhibit P1.1, several possible values exist. They reflect the purpose of the valuation:

- Minority interests in a nonpublic company incorporate discounts for lack of marketability.
- A sale of a business in its entirety to a strategic buyer includes a premium for control that captures a portion of the synergies or restructuring opportunities that the buyer expects.
- The usual case for minority interests in public firms incorporates neither discount nor premium.

Valuation providers are jugglers. They use all available methods—discounted cash flow, multiples, and other methods. Ultimately, they employ their experience on the proper factors to pick a valuation number or a range.

"Valuations Still Part Art" is the title of a recent article in the *Wall Street Journal*. The article began by asking, "If you invested $100 million in GMAC LLC in 2006, what would it be worth today? (A) $90 million; (B) $80 million; (C) $75 million; (D) all of the above." The correct answer is all of the above. One reason for three different values is that book value accounting was used in 2006, and fair value accounting was adopted in 2008. Another reason is that three private equity firms using fair value accounting valued the assets of GMAC differently.

Why did they derive three different values? Part of the answer is that they made different assumptions about the financial data, time horizons, and other factors. Suppose that one of the private equity firms needs five inputs to estimate an intrinsic value, and it has only five inputs from which to choose. There is only one possible answer. However, suppose the firm still needs to choose five inputs, but now has 10 possible choices. Then there are 252 possible answers. Thus, even if the three firms used the same valuation model, they might make different assumptions, so the odds are small that they would come up with the same valuation. The problem is complicated when different valuation models are used.

So how do professional experts and consulting firms value companies? In theory, valuation is a relatively simple process of discounting a firm's expected cash flows by investors' required rates of return. In practice, valuation is highly complex because there are numerous valuation models and techniques. Structures of valuation models often include many assumptions and parameters. Each valuation model and technique has its own strengths and weaknesses. Thus, they are not perfect substitutes for each other. Stated otherwise, you must choose the valuation models and techniques that are best suited for your needs.

The Valuation Handbook differs significantly from other sources of information because the contributors are practitioners representing consulting and investment firms plus academics—all of whom explain how they value companies and other assets. This book provides unique perspectives on how today's leading practitioners and academics value both publicly traded and privately held companies. Most practitioners agree that, in theory, the value of a firm is based on the present value of its expected cash flows. However, their applications of the theory vary widely. To some extent, it depends on the end use of the valuation. Valuing a large number of companies for purposes of trading stocks presents different challenges than valuing future growth opportunities within a firm, or valuing a dental practice that is for sale. Thus, the emphasis in this book is on *how* to value firms rather than the theories underlying the valuation process.

This book includes many of the best practitioners in the world on the core subject of valuation. For the first time, to our knowledge, these top practitioners have collected their thoughts in one place for you, the reader, to study. In these times of enormous economic stress, the profession needs to rethink many of its assumptions and processes involving the core topic of valuation. This *Valuation Handbook* may help that process of reevaluation.

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CHAPTER SUMMARIES

Obviously, this book is about valuation—valuation of public companies, private companies, illiquid companies, start-ups, and business units. It covers specific techniques, research processes, and organizational challenges. These insights apply to investment firms where security analysts pick stocks and managers combine those stocks into diversified portfolios. They also apply to corporations where managements try to create shareholder wealth in a highly competitive economy.

The book naturally divides into four groups:

1. Valuation, valued-based management, governance, and drivers.
2. Residual income.
3. Cash return and net cash flow valuation methods.
4. Specialized valuations, liquidity, and other topics.

Benton Gup's Chapter 1 covers "Two Frameworks for Understanding Valuation Models." On the one hand for a small number of firms, the top-down approach examines the major factors influencing the demand for a firm's products and services. Those factors include the business environment, economic activity, and industry factors, including the life cycle. These are factors over which the firm has no control, but they can make or break the firm. On the other hand, the bottom-up approach takes advantage of large databases and quantitative techniques to estimate intrinsic values.

In Chapter 2, "The Value Edge: Reap the Advantage of Disciplined Techniques," Bill Hass and Shep Pryor describe value management from both a historical and a strategic point of view. They suggest avoiding simplistic solutions and allude to many of the techniques covered in other chapters.

Bart Madden describes five critical choices that guided the development of the CFROI life-cycle valuation model in Chapter 3, "Applying a Systems Mind-Set to Stock Valuation." This approach emphasizes accuracy in the measurement of firms' track records and the assignment of a discount rate that is dependent on the procedures used to forecast firms' future cash flows.

The reader may wish to peruse together both Tom Copeland's Chapter 4 on "Comparing Valuation Models" and Bob Atra and Rawley Thomas's Chapter 5 on "Developing an Automated Discounted Cash Flow Model." Copeland focuses on the important question of how to evaluate valuation models—suggesting that the convergence of the market price to the model price is best for portfolio management, and goodness of fit is best when the objective is for the model price to be as close as possible to the market fair price. Copeland provides empirical results for a large sample of valuations using an expert system. It is similar to Atra/Thomas's automated DCF.

Given the plethora of valuation models, it is a good idea to have a consistent methodology to measure their accuracy, effectiveness, and predictive capability. The computer power available today can be applied against large fundamental databases.

Related to Chapters 4 and 5, Randall Schostag in Chapter 15, "Portfolio Valuation: Challenges and Opportunities Using Automation," covers the history of legal precedent in valuing privately held firms. Randall suggests that the new possibility of automated approaches can provide cost-effective ways to mark to model in addition to marking to market. In fact, the traditional labor-intensive method of valuation becomes simply impractical to perform over the large number of securities in portfolios to comply with FAS 157 at anything close to reasonable cost. Various discussions have proposed disclosure of both mark to market and mark to model as most relevant to investor decision making. Regulatory forbearance of equity requirements under mark to market may offer a better solution to give banks breathing room than fudging core disclosure for investor decisions.

Roy Johnson's Chapter 6, "The Essence of Value-Based Finance," covers the practical realities of employing the value drivers of the models to focus and simplify management effort. An adjustment should be greater than 5 to 10 percent in order to merit inclusion in the effort. Growth adds shareholder value only if returns exceed the cost of capital. In contrast to the traditional capital budgeting process, Roy also concludes that: "The major program (for example, an important operational or strategic initiative) is the absolute lowest level for which value-based analysis should be performed." "For what matters in any system is the performance of the whole." Forget IRR and DCF analyses on those machines. Concentrate your effort on strategic initiatives and overlays.

The second group of chapters (Chapters 7 to 9) offers three complementary perspectives on residual income. Benton Gup and Gary Taylor in Chapter 7, "Residual Income and Stock Valuation Techniques: Does It Matter Which One You Use?" conclude that all the methods are mathematically equivalent. Thus, the choice of the model is a matter of individual preference.

David Trainer in Chapter 8, "Modern Tools for Valuation," describes in detail the methodologies used at New Constructs to separate most attractive from most dangerous stocks. The methodologies employ comprehensive financial data sets to assess true economic earnings, as opposed to relying on reported accounting earnings. In addition, dynamic DCF modeling enables quantification of expectations for future cash flows that are embedded in stock prices. Full transparency and extensive use of footnotes characterize the framework.

Jim Grant's Chapter 9, "The Economic Profit Approach to Securities Valuation," provides a highly readable, detailed explanation of economic profit valuation. The chapter covers both constant and variable growth EVA® valuation models and provides several numerical examples for students and professionals to learn equity valuation concepts and calculations. Jim shows the equivalence of economic profit and free cash flow (FCF) approaches to equity analysis. Importantly, he notes that intrinsic valuations are highly sensitive to the input assumptions, such as the cost of capital and the length of the economic profit period, and he provides real-world insight on the application of economic profit valuation in practice.

Chapters 10 to 12 form the third group, cash flow return and net cash flow valuation models.

Despite widespread lip service to the concept of shareholder value, formal value management programs have all too often been rejected, ignored, or abandoned by results-oriented management teams. Dennis Aust's Chapter 10, "Valuation for Managers: Closing the Gap between Theory and Practice," attributes this to excessive focus on theoretical purity rather than practical benefits. He suggests an excellent solution to this conundrum, describing a simplified valuation model that directs management attention to a limited number of key business value drivers: cash profit, depreciating (fixed) assets, and nondepreciating assets. Combining these three drivers implicitly incorporates the balance sheet to ensure that the firm achieves returns above the cost of capital. Dennis's solution keeps any complexity of the valuation model under the hood, while retaining the accuracy necessary to drive wealth-creating behavior within the firm's culture.

The Thomas/Atra Chapter 11 describes "The LifeCycle Returns Valuation System." An appendix compares traditional CAPM costs of capital with investor market derived real discount rates.

Pat Dorsey's Chapter 12, "Morningstar's Approach to Equity Analysis and Security Valuation," covers the practical details of valuation employed at one of the premier firms in the profession. The concept of a moat deserves deep study by students of this book, because it places valuation within the strategic context of competitive industry dynamics. "Moat" compares closely to the "T" horizon concept in Stern Stewart EVA® and the "fade" rates employed by the Callard, Madden offshoots in cash returns.

Specialized valuation, liquidity, and other topics create the basis for the fourth and final group within *The Valuation Handbook*.

Chapter 13, "Valuing Real Options: Insights from Competitive Strategy," by Andrew Sutherland and Jeffrey Williams, offers a look at an increasingly important corporate finance application. This chapter outlines a number of valuation approaches designed to bring about heightened understanding of strategic capabilities and limitations of the firm in relation to its real option opportunities. By incorporating insights from competitive strategy into the valuation exercise and using a variety of approaches to triangulate on investment values, the real options management process will be better informed.

Max Zavanelli's Chapter 14, "GRAPES: A Theory of Stock Prices," describes in detail the results and methodology of a highly successful approach to stock selection and portfolio construction. GRAPES stands for Growth Rate Arbitrage Price Equilibrium System. Those interested in quantitative approaches to the market should definitely read this chapter. His new theory of stock prices, the first in 40 years, also applies to asset pricing in general and the value of private corporations and acquisitions.

Bob Cimasi and Todd Zigrang's Chapter 16, "The Valuation of Health Care Professional Practices," and Stan Pollock's Chapter 17, "Valuing Dental Practices," cover in astonishingly extensive, professional detail the valuation of privately held health care professional service firms. The contrast between these labor-intensive, law-compliance-driven, privately held valuations and publicly held firms is stark. Bridging these two schools of thought and real-world, practical applications should become a long-range goal of the profession.

Ashok Abbott's Chapter 18, "Measures of Discount for Lack of Marketability and Liquidity," relaxes the traditional academic assumption of efficient markets by measuring blockage trading discounts. With the meltdown and freeze-up of markets currently occurring worldwide, a deeper economic understanding of markets has become paramount to practitioners, regulators, and politicians.

Everyone knows the importance in today's information economy of people and intellectual property. However, recognizing its importance is far different than actually measuring the effects. Mark Ubelhart's Chapter 19, "An Economic View of the Impact of Human Capital on Firm Performance and Valuation," employs Hewitt Associates' unique proprietary database of 20 million employees in the United States. Hewitt's research confirms that increases in shareholder wealth result from the migration of pivotal employees from one firm to another. Retention of top performers, who create the intellectual property, therefore becomes a high strategic priority. Lacking the equivalent of GAAP in human capital reporting, this chapter demonstrates how firms may employ standardized metrics to address this priority for investors, management, and the board of directors as well as professional researchers who seek to advance the state of the art of valuation.

Arjan Brouwer and Benton Gup's Chapter 20, "EBITDA: Down but Not Out," examines the use of EBITDA by companies from Europe's largest capital markets, and discusses the benefits and shortcomings of this measure. This information is relevant for U.S. analysts who must be prepared for the increased reporting of alternative performance measures like EBITDA, as the International Financial Reporting Standards (IFRS) are gaining more ground in the United States.

Bill Mahoney's Chapter 21, "Optimizing the Value of Investor Relations," ties many of the chapters together into implications for the communications from firms to their investors. Most important, Bill recommends that investor relations professionals transform their role from a simple service public relation function to being the resident investment market expert. By deeply understanding investor behavior, the market, multifactor quant, and DCF intrinsic value frameworks, investor relations develops the core skills necessary to bridge between the firm's shareholder wealth-creating objectives and the investors who provide the capital.

The Thomas/Yang/Atra chapter, Chapter 22, "Lower Risk and Higher Returns: Linking Stable Paretian Distributions and Discounted Cash Flow," combines Benoit Mandelbrot's research on fat-tailed distributions with LifeCycle's DCF. Replacing standard deviation with the stable Paretian "alpha peakedness parameter" as the primary risk measure turns the traditional conclusions upside down. Lower risk and higher returns result from purchasing undervalued stocks and short-selling overvalued stocks. Purchasing fairly valued stock actually increases risk. Consequently, combining Chapter 22's results on new risk measures with Chapter 11's discussion of market derived real discount rates creates a possible replacement for traditional CAPM cost of capital theory.

Now, as you read *The Valuation Handbook*, consider applying the authors' various insights to your own personal decisions about:

- *Your portfolio.* Do you employ a passive or an active approach? If active, do you only analyze price patterns, or do you employ discounted cash flow to measure the intrinsic valuation of each stock you own?
- *Your business.* What is it worth, if you sell? How can you make your business worth more?

June 2009

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