DELAWARE LAW, FINANCIAL THEORY AND INVESTMENT BANKING VALUATION PRACTICE

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I.

INTRODUCTION

Investment bankers and their counsel typically are ill informed as to Delaware courts' attitudes toward the valuation analyses underlying fairness opinions and valuation materials. Counsel usually defer to investment banking professionals on technical valuation matters. Most investment bankers are unaware that certain "industry practices" have been criticized by Delaware courts.

Delaware courts have developed a surprisingly large body of law regarding the proper analytics for valuing businesses. Most of this law has been developed in the context of adjudicating appraisal rights of dissenting shareholders in corporate M & A or going-private transactions. It is also, however, a relevant guide to Delaware courts' beliefs as to proper financial analyses in corporate change-of-control transactions.[1]

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1. For purposes of this article, the primary differences between appraisal rights cases and other merger related litigation, such as breach of director fiduciary duty claims, relates to the burden of proof. In appraisal claims, each party to the appraisal proceedings has the burden of proof to support its valuation claim. *See In re* Emerging Commc'ns., Inc. S'holders Litig., No. 16417, 2004 Del. Ch. LEXIS 70, at *52 (Del. Ch. May 3, 2004). If neither side meets that burden, which is usually the case, then the court reaches its own conclusions as to value, based on the evidence introduced into the record by the litigants. This often results in the court, in effect, creating its own financial analysis by picking and choosing the "best of" each valuation expert's analysis and then applying specific weightings to each selected valuation technique.

In other merger related litigation, the court usually is focused on the reasonableness of the assumptions underlying the financial analysis. *See In re* Topps Co. S'holder Litig. 926 A.2d 58, 74-77 (Del. Ch. 2007). This arguably provides greater latitude for the investment bank rendering a fairness opinion than for an investment banker testifying in an appraisal rights case. For ex-

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This article provides an overview of current Delaware law on the nuts and bolts of business valuations using a discounted cash flow analysis and, to a lesser extent, business valuations more generally. It discusses Delaware courts' views on the proper methods for calculating a weighted average cost of capital and a cost of equity, and the use of the Capital Asset Pricing Model and the Fama-French Model. The article also discusses Delaware courts' views toward methods of calculating terminal multiples in the context of discounted cash flow analyses. This article assumes a basic familiarity with investment banking valuation methodologies.

II.

BACKGROUND

For more than twenty years Delaware courts have stated that proper valuation techniques include those "techniques or methods, which are generally considered acceptable in the financial community."[2] Thus, Delaware courts accept basic valuation methodologies such as discounted cash flow ("DCF") analyses[3] as well as the capital asset pricing model ("CAPM")[4] in selecting appropriate discount rates for use in DCFs.

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ample, it is unlikely that a court would scrutinize an investment banker board book presentation to the same extent as the valuation analysis of a financial expert in an appraisal case, except in litigation in which the court applies the "entire fairness" test. For a discussion of the "entire fairness" test, *See* Weinberger v. UOP, Inc., 457 A.2d 701 (Del. 1983); Kahn v. Tremont Corp., 694 A.2d 422 (Del. 1997). For an investment bank seeking to establish guidelines based on "best practices" however, it is necessary to identify those techniques and assumptions that the Delaware courts have determined to be unreasonable (or reasonable, as the case may be) and the context in which those determinations are made. A technique deemed to be unreasonable in an appraisal context, for example, is unlikely to be deemed reasonable in breach of fiduciary duty case involving the "entire fairness" test. As a practical matter, the investment bank cannot adopt two separate valuation analyses standards, one for "entire fairness" transactions and another for other transactions.

2. *See Weinberger*, 457 A.2d at 713; Cede & Co. v. Technicolor, Inc., 542 A.2d 1182, 1186-87 (Del. 1988).

3. A discounted cash flow analysis values a business or asset by estimating its future cash flow stream and discounting such cash flow stream using a selected discount rate, which rate is selected based on a judgment as to the level of risk associated with the cash flow stream. Formulaically, it is written as:

During this time, Delaware courts have become increasingly sophisticated in their understanding of business valuation techniques. As a result, they have become more aggressive in scrutinizing valuation techniques and their underlying assumptions. For example, in *In re The Topps Company Shareholders Litigation,* Vice Chancellor Strine ridiculed Lehman Brothers for analytic changes made to its fairness opinion analysis between board meetings roughly one month apart.[5] Accordingly, investment bankers and other corporate valuation professionals whose work product may be subject to scrutiny under Delaware law should be aware of the matters on which Delaware courts have expressed their views in corporate valua-

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$$V_i = \frac{P_1}{1+r} + \frac{P_2}{(1+r)^2} + \frac{P_3}{(1+r)^3} + \cdots \frac{P_x}{(1+r)^x} = \sum_{t=1,n} \frac{P_t}{(1+r)^t}$$

where V_i = value of asset i
      P = the cash flow in period t
      r = the selected discount rate (and is assumed not to vary during
          periods 1 to n).

4. CAPM is a theoretical model that describes the relationship between risk and return in an efficient capital asset market. *See* William F. Sharpe, Investments, 143-45 (2d ed. 1981). Under the assumptions of CAPM, the expected (i.e., future) return on a security has a linear relationship to the expected return on the "market" as a whole. According to CAPM, the expected return on a security (i), R(i), above that of the risk free rate of interest, r(f), also known as "excess return", is equal to the product of security (i)'s market beta, $Beta_{(m)}(i)$, and the expected return of the market as a whole above that of the risk free rate of interest $(R(m) - r(f))$, plus alpha(i), which is the expected return on security (i), above the market as a whole if the excess return of the market as a whole were zero, and the expected deviation of alpha(i), r(i), which on a forward looking basis is assumed to be zero. Formulaically,

$R(i) - r(f) = Beta_{(m)}(i)(R(m) - r(f)) + alpha(i) + r(i).$

Thus, a security's market beta represents the sensitivity of the security's excess return to the excess return of market as a whole. The technical expression for $Beta_{(m)}(i)$ is:

$Beta_{(m)}(i) = Cov (R(i), R(m)) / Var (R(m))$

where Cov (R(i), R(m)) is the covariance between the return on security (i) and the return on the market as a whole, and Var(R(m)) is the variance of the return on the market as a whole. William F. Sharpe, Gordon J. Alexander & Jeffery V. Bailey, Investments 183-84 (6th ed. 1999).

5. *In re* Topps Co. S'holders Litig. 926 A.2d 58, 76 (Del. Ch. 2007) ("Subjective judgments . . . are . . . not scientific, but highly paid valuation advisors should be able to rationally explain them.").

tions. This article discusses certain approaches in conducting a DCF analysis that are more likely to be accepted (or rejected) by Delaware courts.

III.
CALCULATING WEIGHTED AVERAGE COST OF CAPITAL[6]

A. *CAPM vs. Fama-French Model*

Delaware courts recently have recognized that much of the academic financial community has drifted away from CAPM, which is a one-factor equity return model, toward multi-factor models.[7] One multi-factor model receiving attention in academic circles is the Fama-French model.[8] The Fama-French model has been used by Delaware courts in addition to, or instead of, CAPM.[9] It is a variant of CAPM, but adds two additional factors for purposes of calculating expected equity returns.[10] First is size; it increases the expected equity return, and thus, the expected risk, for small cap companies.[11]

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6. A company's weighted average cost of capital, "WACC," is the cost of a company's overall capital, weighted in proportion to its capital structure. SHANNON P. PRATT, ROBERT F. REILLY & ROBERT P. SCHWEIHS, VALUING A BUSINESS, 184-85 (4th ed. 2005). Formulaically, it is represented as:

$$WACC = (K_e \times W_e) + (K_d[1 - t] \times W_d)$$
where
K_e = Cost of company's common equity
K_d = Cost of company's debt
W_e = Percentage of common equity in company's capital structure
W_d = Percentage of debt in company's capital structure
t = Company's effective tax rate.

This formula assumes there is no preferred equity in the capital structure.

7. *See* Union Ill. 1995 Inv. Ltd. P'ship v. Union Fin. Group, Ltd. 847 A.2d 340, 363 (Del. Ch. 2004).

8. *Id.*

9. *See In re* PNB Holding Co. S'holders Litig., No. 28-N 2006 Del. Ch. LEXIS 158 at *114 (Del. Ch. Aug. 18, 2006); *Union Ill.*, 847 A.2d at 362-63. Ibbotson, a beta service provider, currently provides both CAPM and Fama-French model data for beta calculations.

10. Eugene F. Fama & Kenneth R. French, *The Capital Asset Pricing Model: Theory and Evidence*, J. ECON. PERSPECTIVES, Summer 2004.

11. *Id.* at 38 (explaining that the model adjusts based on the difference between the returns on diversified portfolios of "small" and "big" stocks). Formulaically, the Fama-French three-factor model is represented as:

$$R(i) - r(f) = Beta_{(m)}(i)(R(m) - r(f)) + Beta_{(s)}(i)R(SMB(i)) + Beta_{(H)}R(HML(i)) + alpha(i) + r(i)$$

Second, is book-value-to-market-value ratios; it increases the expected equity return, and thus, the expected risk, for stocks with high book-value-to-market-value ratios relative to stocks with low book-value-to-market-value ratios.[12]

B. *Beta Calculations*

1. *Five Year vs. Two Year Betas*

Delaware courts have stated that neither a five year nor two year historical beta is presumptively valid,[13] but have noted the pros and cons of each approach,[14] although one decision

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where

R(SMB(i)) = the difference between the returns on diversified portfolios of small and big stocks

$Beta_{(s)}(i)$ = the size beta of security (i)

R(HML(i)) = the difference between the returns on diversified portfolios of high and low book-value-to-market-value stocks

$Beta_{(H)}(i)$ = the book-value-to-market-value beta of security (i).

Id.

The Fama-French model, as a multi factor-model, is a descendent of the arbitrage pricing theory, which holds that in an efficient market, arbitrage will lead to a situation in which the expected return of a security or portfolio will be a linear function of its sensitivities to all important common sources of risk. WILLIAM F. SHARPE, INVESTMENTS 184 (2d ed. 1981). Symbolically, it is written as:

$$E(i) = a + bBeta(i)1 + cBeta(i)2 + . . .$$

where

E(i)   = the expected return on a security or portfolio

Beta(i)1 = the sensitivity of the return of a security (i) or portfolio (i) to common factor 1

Beta(i)2 = the sensitivity of the return of a security (i) or portfolio (i) to common factor 2

and a, b, c, etc. are constants.

Id.

12. Fama & French, *supra* note 10, at 38 (explaining that the model adjusts based on the difference between the returns on diversified portfolios of "high" and "low" book-value-to-market-value stocks).

13. A five-year historical beta is based on a monthly measurement of the movement of the applicable security's price as against the "market," whereas a two-year beta typically is based on a weekly measurement. In both cases, for U.S. stocks, the S&P 500 Index is often used as a proxy for the "market."

14. Cede & Co. v. JRC Acquisition Corp., No. 18648-NC 2004 Del. Ch. LEXIS 12, at *40, n.94 (Del. Ch. Feb. 10, 2004); Andaloro v. PFPC Worldwide, Inc., No. 20336 2005 Del. Ch. LEXIS 125, at *59, n.61 (Del. Ch. Aug. 19, 2005) ("The longer five-year period might be thought to provide an estimate that includes price movements in both bull and bear markets and that smoothes out any short-term anomalies. The two-year period might be

has stated that a longer time period is generally preferred.[15] These cases, together with the fact that most beta service providers[16] calculate betas on a five-year historical basis, suggests that a five-year historical beta is preferable, except in situations in which changes to the subject company, or its industry, during the past five years would cast doubt on its applicability for estimating a future, or forward looking, beta.

2. *Historical observed beta ("raw" beta) vs. historical adjusted beta ("as-adjusted" beta) vs. a comparable company derived beta*

The term "as-adjusted beta" used herein refers to the adjustment by beta service providers[17] of a company's "raw" historical beta in order to estimate its future beta. CAPM is based on a company's future beta.[18] One frequent adjustment reflects the observation that over time betas revert toward the "average".[19] In the case of Bloomberg, the "average" toward which a raw beta is adjusted is 1.0.[20] In the case of Ibbotson, the "average" is adjusted toward the average beta of an industry or peer group selected by Ibbotson.[21]

Although one Delaware court has stated that as-adjusted betas are preferable to raw betas (based on academic studies),[22] another court chose raw betas over as-adjusted betas in a case in which neither counsel nor the valuation expert could explain the reasons for using an as-adjusted beta.[23] These

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thought to provide information that is more current and that provides a better insight into the current beta, especially where some seismic market or industry shift is thought to have occurred.").

15. *JRC Acquisition Corp.*, 2004 Del. Ch. LEXIS 12, at *40, n.94.

16. Beta service providers frequently used by investment banks include: Bloomberg, Morningstar (Ibbotson) and Barra. Other beta service providers include: Value Line, Wilshire Associates and S&P Compustat. Of these beta service providers, only Bloomberg provides a two-year beta measurement period.

17. SHARPE, *supra* note 11, at 341.

18. SHARPE, *supra* note 11, at 338.

19. ASWATH DAMODARAN, INVESTMENT VALUATION 186 (2d ed. 2002).

20. *Id.*

21. STOCKS, BONDS, BILLS, AND INFLATION 2007 VALUATION EDITION YEARBOOK 117 (Morningstar 2007).

22. *JRC Acquisition Corp.*, 2004 Del. Ch. LEXIS 12, at *39, n.96.

23. Gilbert v. M.P.M. Enterp., Inc., No. 14416-NC, 1998 Del. Ch. LEXIS 60, at *7-9 (Del. Ch. Apr. 24, 1998).

cases suggest that as Delaware courts become more educated with respect to proper business valuation techniques, it will be more difficult to justify using a "raw" beta.

Similarly, one Delaware court refused to rule it per se improper to ignore a company's actual beta (i.e. a beta of a public company based on historical data) and instead use a beta based on comparable companies.[24] Another Delaware court, however, has stated that it is standard to use a company's actual beta when valuing a public company.[25] Thus, using a comparable company based beta for a publicly traded company requires sufficient explanation as to why the subject company's actual beta is inappropriate.

Although Vice Chancellor Strine did not did not explicitly address this issue in *In re Topps*, one of his criticisms of Lehman Brothers' fairness opinion analysis related to Lehman's revision of a cost of capital range from a range in which the company's actual cost of capital was roughly at the mid-point of the selected range to a new range in which the actual cost of capital was at the bottom end of the range.[26] Implicit in this criticism was a view that Lehman did not use the company's actual beta, which was an underlying component in calculating the actual cost of capital, or at least that Lehman did not provide any explanation for not using the company's actual beta.

3. *Barra Betas*

Another beta service provider is Barra. Barra publishes two betas: an historical beta and a predicted beta.[27] Barra's predicted beta is a forecast of the applicable stock's future looking beta.[28] Barra's forecasting model for U.S. equity securities is a 13 factor model, as opposed to a one factor model (CAPM) or a three factor model (Fama French).[29] Many in-

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24. Gotham Partners, L.P. v. Hallwood Realty Partners, L.P., 855 A.2d 1059, 1077 (Del. Ch. 2003).

25. Cede & Co. v. Technicolor, Inc., 542 A.2d 1182 (Del. 1988).

26. *In re* Topps Co. S'holders Litig., 926 A.2d 58, 75 (Del. Ch. 2007).

27. Barra Beta Book, *information available at*, http://www.mscibarra.com/ (last visited Apr. 7, 2008).

28. Barra Predicted Beta, *information available at*, http://www.barra.com/ research/fundamental_detail.aspx (last visited Apr. 7, 2008).

29. United States Equity Risk Model Handbook 18, 54, 74-76 (Barra Version 3 (E3) 1998).

vestment banks now use predicted Barra betas in their fairness opinion analyses.[30] Some use it as "the" beta input into the WACC calculation, others use it as one data point in choosing an appropriate beta.

Delaware courts have yet to consider DCF analyses based on Barra predicted betas. There is no reason to believe that Delaware courts would not accept the use of Barra predicted betas in a valuation analysis. One should be careful, however, in using additional adjustments in estimating aggregate risk premiums when using a Barra predicted beta. In light of Barra using a 13 factor model,[31] investment bankers must be cognizant of the nature of these factors so as not to apply further adjustments that result in a "double counting" of certain risk adjustments.[32] For example, Barra uses size (market capitalization) as one input into its predicted beta. It is unclear whether it is appropriate to use an Ibbotson derived size pre-

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30. *See, e.g.*, Tribune Co., Morgan Stanley presentation dated March 30, 2007 to the Committee of Independent Directors of the Board of Directors (Form SC TO-I, Exhibit 99(c)(8)) (Apr. 25, 2007); Laureate Education, Inc., Morgan Stanley presentation dated January 28, 2007 to the Special Committee of the Board of Directors (Form SC 13E3, Exhibit 99(c)(3)) (Mar. 16, 2007); Catalina Marketing, Corp., Lazard presentation dated February 28, 2007 to the Special Committee of the Board of Directors (Form SC 13E3, Exhibit 99(c)(8)) (June 18, 2007); Penn National Gaming, Inc., Lazard presentation dated June 15, 2007 to the Board of Directors (Form SC 13E3, Exhibit 99(c)(2)) (Oct. 29, 2007); iPayment, Inc., Lazard presentation dated Feb. 6, 2006 to the Special Committee of the Board of Directors (Form SC 13E3, Exhibit 99(c)(2)); PRA International, Credit Suisse presentation dated July 24, 2007 to the Special Committee (Form SC 13E3, Exhibit 99(c)(4)) (Aug. 28, 2007); Cumulus Media, Inc., Credit Suisse presentation dated July 23, 2007 to the Special Committee (Form SC 13E3, Exhibit 99(c)(2)) (Sept. 10, 2007); HCA Inc., Credit Suisse and Morgan Stanley presentation dated July 17, 2006 to the Special Committee (Form SC 13E3, Exhibit 99(c)(3)) (Aug. 9, 2006); Oplink Communications Inc., Bear Stearns presentation to the Special Committee dated June 19, 2007, (Form SC 13E3, Exhibit 99(c)(2)) (Aug. 27, 2007).

31. These 13 factors include: volatility, historical alpha, market capitalization, trading activity, growth, earnings yield, book value to price ratio, earnings variability, leverage, currency sensitivity, dividend yield and certain other factors. UNITED STATES EQUITY RISK MODEL HANDBOOK 18, 54, 74-76 (Barra Version 3 (E3) 1998).

32. *See also* Gotham Partners, L.P. v. Hallwood Realty Partners, L.P., 855 A.2d 1059 (Del. Ch. 2003) (Strine refusing to accept both a beta adjusted from the actual company's beta and the addition of additional small company and specific company adjustments to the cost of equity calculation).

mium[33] to apply to a WACC calculation based on a Barra predicted beta that takes into account, at least in part, the subject company's size.

C.   *Size of Equity Risk Premium*

Traditionally, industry practice has used an historical equity risk premium as measured from the early 20th century to-date. Ibottson's estimate based on historical arithmetic mean returns from 1926 to-date has been the primary data source.[34]

In recent years, however, academic studies have questioned the appropriateness of using such a long historical measurement period in light of evidence that the size of the equity risk premium has declined over time.[35] This issue has come to the attention of the Delaware courts,[36] and at least on one occasion they have accepted the use of a lower equity risk premium based on such academic studies.[37]

D.   *Additional Risk Premiums*

1.   *Small Cap and Microcap Premiums*

One adjustment to a beta-derived weighted average cost of capital ("WACC") calculation that has received acceptance under Delaware law is the small cap risk premium, at least with respect to U.S. traded stocks.[38]

One Delaware court has rejected the application of a "microcap" risk premium because such application lacked any additional evidence of the propriety of such a premium other than its use by Ibbotson.[39] In that case, however, the court denied the applicability of a microcap premium because it

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33. *See* discussion *supra* pp. 582-83.

34. *See* PRATT ET. AL., *supra* note 6, at 177.

35. *See* Fama & French, *supra* note 10; *In re* PNB Holding Co. S'holders Litig., 2006 Del. Ch. LEXIS 158, at *111 n.145 (citing Roger G. Ibbotson & Peng Chen, *Long-Run Stock Returns: Participating in the Real Economy*, 59 FIN. ANALYSTS J. 88, 96-97 (2003)).

36. *Id.*

37. Cede & Co. v. MedPointe Healthcare, Inc., No. 19354, 2004 Del. Ch. LEXIS 124, at *70-73 (Del. Ch. Aug. 16, 2004).

38. *See* Onti v. Integra Bank, 751 A.2d 904 (Del. Ch. 1999); *In re* Emerging Commc'ns, Inc. S'holders Litig., 2004 Del. Ch. LEXIS 70 at *74; *Gilbert,* 1998 Del. Ch. LEXIS 60 at *10-11.

39. *In re* Emerging Communc'ns Inc. S'holders Litig., 2004 Del. Ch. LEXIS 70, at *74-76.

concluded that the equity value of the subject company was too large. The court found the fair value of the subject company to be in excess of $400 million, thus outside the range of an Ibbotson microcap premium, even though the public float of the subject company was less than $60 million and its total market cap was less than $120 million. This decision, however, does not represent a consensus view of Delaware courts and is unlikely to become the norm. In fact, such reasoning has been expressly rejected by another Delaware decision.[40]

Although the use of additional "international" risk premiums for non-U.S. common equity is widely accepted, only one Delaware case has considered the application of U.S. small cap premiums in the international context, either for developed or developing nations.[41]

2. *Company Specific Risk Premiums*

Historically, some investment bankers have added an additional "company-specific" risk premium in certain circumstances, such as where the company's projections seem overly "optimistic". Vice Chancellor Strine has noted this,[42] and has avoided commenting directly on its use. Although no Delaware court has struck down the use of such additional risk pre-

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40. Cede & Co. v. JRC Acquisition Corp., No. 18648-NC 2004 Del. Ch. LEXIS 12, at *38-39 (Del. Ch. Feb. 10, 2004).

41. Gesoff v. IIC Indust., 902 A.2d 1130, 1161 (Del. Ch. 2006). This case arose in the context of valuing a foreign controlled, U.S. traded, intermediate holding company that only held interests in a variety of overseas assets. In this instance, Vice Chancellor Lamb ended up "splitting the baby" by disallowing a small cap risk premium in the case of a company that conducted business in a variety of African nations, allowing such a premium in the case of an Israeli company and several Hungarian companies, and only partially allowing such a premium for a company the stock of which formed part of the index for the Budapest Stock Exchange. The decision applied country-specific risk premiums to the stocks of the company doing business in Africa, in lieu of applying any small cap risk premium, but it never described its exact analysis relating to country-risk premiums (or the manner of their selection), let alone discuss the interplay between country specific risk premiums and small cap risk premiums. Although the decision referenced numerous scholarly articles on the topic, and clearly examined the issues, its failure to detail the exact risk premiums selected leaves open a number of issues relating to the use of U.S. small cap premiums in calculating the WACC of securities of non-U.S. companies.

42. *See* Union Ill. 1995 Inv. P'ship v. Union Fin. Group, 847 A.2d 340, 355 n.28 (Del. Ch. 2004).

miums as a matter of law, at least four Delaware judges have refused to apply a company-specific risk premium.[43] On at least three occasions, however, a Delaware court accepted a "company specific" risk premium. These occasions have not involved "typical" companies. In one case a Delaware court accepted an additional premium of 10% relating to "additional risk not captured by the equity of small stock premiums".[44] This, however, was in the context of valuing a firm with an aggregate value of less than $2 million by using a venture capital-like required return approach. Likewise, another Delaware court accepted an additional premium of no more than 6% in the context of a company that was in default on its existing bank debt and had been unable to secure additional debt financing.[45] Lastly, one Delaware court accepted a company specific risk premium as appropriate in the case of a private company, but questioned its appropriateness in the case of a public company that has an historical beta.[46]

3.   *Non-Standard Risk Premiums*

One method of adjusting a WACC (or a beta) that Delaware courts would likely refuse to accept is the arbitrary "judgment call", whereby a financial expert calculates a WACC (or beta), and then adjusts it because it doesn't "feel right", or "seemed too low".[47] Similarly, Delaware has rejected non-traditional WACC adjustments such as "weather risk-premiums", "health care industry risk premiums" and other such methodologies.[48] This does not mean that Delaware courts would likely refuse a WACC or beta selection that applied judgment. Rather, it means that the judgment must be ap-

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43. *Union Ill.*, 847 A.2d at 355 n.28; *Gesoff*, 902 A.2d at 1159; Hintmann v. Fred Weber, Inc., No. 12839, 1998 Del. Ch. LEXIS 26 at *20 (Del. Ch. Feb. 17, 1998); Gotham Partners L.P. v. Hallwood Realty Partners, L.P., 855 A.2d 1059, 1077 (Del. Ch. 2003).

44. Lane v. Cancer Treatment Ctrs. of Am., No. 12207-NC, 2004 Del. Ch. LEXIS 108, at *114 (Del. Ch. July 30, 2004).

45. Henke v. Trilithic Inc., No. 13155, 2005 Del. Ch. LEXIS 170, at *40-41 (Del. Ch. Oct. 28, 2005).

46. Onti v. Integra Bank, 751 A.2d 904, 919-20 (Del. Ch. 1999).

47. *Gesoff*, 902 A.2d at 1159 ("Application of [the] SCRP [specific company risk premium] was based almost entirely on . . . subjective beliefs as to the correct discount rate . . .").

48. *In re* Emerging Commc'ns, Inc. S'holders Litig., 2004 Del. Ch. LEXIS 70, at *77-79; *Lane*, 2004 Del. Ch. LEXIS 108, at *113-15.

plied at the "building block" level of the WACC or beta calculation, with sufficient reasoning based on valuation literature. Without a basis grounded "firmly in the valuation literature",[49] such an adjustment will not survive judicial scrutiny.

E. *Existing vs. Target Capital Structure*

Delaware courts have not ruled definitively on using a target capital structure as opposed to a company's existing capital structure for re-levering a capital structure as part of a DCF analysis. The target capital structure approach is the more academically "pure" method for a change of control transaction.[50] Delaware courts, however, have opted for each method on different occasions.[51] A well-reasoned argument for using either method would likely persuade a Delaware court. Selection of a target capital structure, however, should be backed up by contemporaneous evidence such as the actual stated goals of management to seek a different capitalization structure over time, or evidence that a current debt level cannot be maintained over the long run, etc.[52] Likewise, selection of an existing capital structure should include evidence as to why management wishes to maintain the existing capital structure and the appropriateness of such a wish (if different from industry norms).

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49. *In re* PNB Holding Co. S'holders Litig., 2006 Del. Ch. LEXIS 158 at *113.

50. *See* PRATT ET AL., *supra* note 6, at 185-86.

51. For examples of court acceptance of target capitalization structures, *see In re* PNB Holding Co. S'holders Litig., 2006 Del. Ch. LEXIS 158, at *101-02; Andaloro v. PFPC Worldwide, Inc., No. 20289, 2005 Del. Ch. LEXIS 125, at *55 (Del. Ch. Aug. 19, 2005); *JRC Acquisition Corp.*, 2004 Del. Ch. LEXIS 12, at *28-31. For examples of court acceptance of existing capitalization structures, *see* Cede & Co. v. Technicolor, Inc., 2003 Del. Ch. LEXIS 146, at *171-72; *In re* Radiology Assoc., Inc., 611 A.2d 485, 493; Hintmann v. Fred Weber, Inc., 1998 Del. Ch. LEXIS 26, at *18; *MedPointe Healthcare Inc.*, 2004 Del. Ch. LEXIS 124, at *67.

52. *See Henke*, No. 13155, 2005 Del. Ch. LEXIS 170, at *40 (permitting assumed capital structure of 100% equity in light of company's inability to obtain alternative debt financing and existing covenant breach with respect to outstanding debt).

IV.
WACC Calculation Conclusions

In light of Delaware's reluctance to allow for financial experts' "judgment calls" in WACC calculations, one may wonder what leeway exists to apply the "art" of valuation. There still exists substantial room for investment bankers to exercise judgment in selecting an appropriate WACC. It simply needs to be done in a more sophisticated manner, commensurate with the growing sophistication of the Delaware courts.

First, the growing acceptance of the Fama-French model allows factors in addition to market betas to be used in WACC calculations. Because current investment banking practice already incorporates a size premium adjustment into the WACC, the biggest difference between traditional investment banking community practice and the Fama-French model involves adjusting the WACC of stocks with high and low book-value-to-market-value ratios.

Investment banks should educate their bankers as to the existence of, and potential appropriate uses for, the Fama-French model and other multi-factor models (such as Barra). This requires an understanding of the circumstances under which such multi-factor models will produce results different from the traditional CAPM-plus-size-premium WACC calculation. In addition, bankers should understand the extent to which the Fama-French or Barra predicted betas models contain assumptions, such as size premiums, that are different from, or conflict with, the other components of their WACC models that may be separately available from other beta service providers.[53]

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53. Symbolically, the issue relates to the relationship of the inputs of any multi factor model. For explanatory purposes, note the Fama-French model: $R(i) - r(f) = Beta_{(m)}(i)(R(m) - r(f)) + Beta_{(s)}(i)R(SMB(i)) + Beta_{(H)}R(HML(i)) + alpha(i) + r(i)$. *See supra* note 11.

As mentioned previously, Ibbotson published both Fama-French betas and CAPM betas. Thus, for any security (i), there is a $Beta_{(m)}(i)$ (Fama-French) and a $Beta_{(m)}(i)$ (CAPM). To use a $Beta_{(m)}(i)$ (CAPM) when otherwise using the Fama-French model would be an error. Similarly, to use a $Beta_{(m)}(i)$ (Fama-French) when otherwise applying a traditional Ibbotson published size premium also would appear to be an error. Stocks, Bonds, Bills, and Inflation, *supra* note 21, at 165-73 (discussing the cost of equity calculations using CAPM with size premium and Fama-French). This use should be preventable in the case of the Fama-French model, for which Ib-

Second, investment bankers need to exercise judgment in choosing an appropriate time horizon for a beta calculation. Ideally this applies not just to the target company, but also to each comparable company used in the WACC analysis.

Third, Delaware courts recognize the problems in relying on historical betas. Although the courts are suspicious of arbitrary beta and discount rate adjustments, there is no reason to believe that Delaware courts would dismiss a principled, well-articulated reason for adjusting an historical beta, based on underlying changes to the company's business (such as acquisitions, dispositions, change in business model, etc.) during the relevant measurement period, and consistent with the betas of the comparable company universe. This method, if properly documented, could establish a good faith attempt to use proper analytics, consistent with academic financial theory. Such documentation requires more work than a mere sniff of the air and a wave of the hand to adjust a discount rate, but it can also provide evidence against the "reverse engineering" of financial experts to which Delaware courts have become sensitive over the past two decades.

V.
SELECTING TERMINAL MULTIPLES

Whereas use of CAPM in selecting appropriate discount rates for use in a DCF has become widespread in the financial community, there has been less conformity in the techniques used to select an appropriate terminal value for a DCF valuation.

A.   *Three Methods*

In general, valuation experts use one of three methods to select a terminal multiple to apply to the unlevered cash flow for the year following the end of a multi-year projection (or to the "final" year's earnings before interest, taxes, depreciation

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botson publishes not only $\text{Beta}_{(m)}(i)$ (Fama-French), but also $\text{Beta}_{(m)}(i)R(SMB(i))$. Use of a Barra predicted beta, however, would appear to be more complicated in light of its 13-factor model. It may not be possible to mix-and-match premium "components," such as size and country premiums, with the use of a Barra predicted beta. To the extent that Barra does the adjusting in-house, the use of a Barra predicted beta may effectively create a "one-factor" model for the investment banker.

and amortization, or "EBITDA"): a multiple based on (i) current public company comparables,[54] (ii) comparable M&A transactions,[55] or (iii) an implied growth rate in perpetuity.[56]

Historically, investment banks used the comparable company multiple as the primary basis for selecting the terminal multiple. Over the past few years, however, the implied growth rate in perpetuity method has gained popularity. For some investment banks, the implied growth rate method has become the sole or primary input to choosing a terminal multiple. For others, it is used as a "reality check" to make sure that the use of a current public company comp multiple does not lead to a terminal multiple that implies a growth rate that would be inconsistent with, and otherwise unsupportable based on, the company's projections and other relevant information. Investment bankers have occasionally used comparable M&A transaction multiples as a basis for selecting an appropriate terminal value, but such usage has generally been limited to instances in which an industry was in the midst of a consolidation, such that there was evidence to suggest that a sale transaction was an expected outcome at the end of the projection period, or during the "dot.com" boom, when use of comparable M&A transaction multiples often resulted in more conservative valuations than use of public company comp multiples.

B.   *Delaware Preference for Perpetual Growth Rate*

Out of these three methods, Delaware courts have consistently chosen to rely on the implied growth rate in perpetuity

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54. *See* Prescott Group Small Cap, L.P. v. Coleman Co., No. 17802, 2004 Del. Ch. LEXIS 131 (Del. Ch. Sept. 8, 2004); Gray v. Cytokine Pharmasciences, Inc., No. 17451, 2002 Del. Ch. LEXIS 48, at *26 n.18; Gilbert v. MPM Enter., Inc., No. 14416-NC, 1998 Del. Ch. LEXIS 60, at *10-11 (Del. Ch. Apr. 24, 1998); *JRC Acquisition Corp.*, 2004 Del. Ch. LEXIS 12, at *15-16.

55. *See* Kleinwort Benson Ltd. v. Silgan Corp., No. 11107, 1995 Del. Ch. LEXIS 75, at *23 (Del. Ch. June 15, 1995) (Vice Chancellor Chandler acknowledging the potential advantage for using such an approach over a growth in perpetuity approach but refused to give it any weight in the matter at hand).

56. *Prescott Group*, 2004 Del. Ch. LEXIS 131; Crescent/Mach I P'ship, L.P. v. Turner, No. 17455-VCN, 2007 Del. Ch. LEXIS 63, at *54-55 (Del. Ch. May 2, 2007); *MedPointe Healthcare, Inc.*, 2004 Del. Ch. LEXIS 124, at *64-66; *JRC Acquisition Corp.*, 2004 Del. Ch. LEXIS 12, at *15-16.

method in selecting an appropriate terminal value, when reliable data is available.[57]

There are several reasons for this. First, it is usually cited as the most favored method by the academic financial community, assuming there are reliable projections.[58] Second, most Delaware valuation cases occur in the appraisal rights context. In this context, Delaware law provides that a dissenting stockholder exercising appraisal rights is only entitled to the value of his or her holdings as of the time of the merger or acquisition; not the value in the hands of a potential acquirer.[59] Accordingly, in appraisal cases Delaware law typically refuses to recognize valuation data, based purely on comparable M&A transactions or premiums paid analyses because such techniques are viewed as incorporating post-merger value.[60] Any attempt to use comparable M&A transaction multiples or premiums paid analyses would have to "back-out" any implied value attributable to merger synergies.[61] In theory, such a methodology would have the approval of the Delaware courts,[62] but in practice it would be difficult to do so in light of the lack of available public data regarding acquiring companies' beliefs as to the allocation of purchase price between targets' "intrinsic value" and the synergies that the acquirers bring to the transactions.

The final reason relates to the courts' view as to the reliability of management projections as opposed to comparable company selections (and, thus, their suspicion as to other valuation metrics based in part on comparable company analyses).

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57. *Kleinwort Benson Ltd.*, 1995 Del. Ch. LEXIS 75, at *23; *In re* PNB Holding Co. S'holders Litig., 2006 Del. Ch. LEXIS 158, at *115-16; Cavalier Oil Corp. v. Harnett, 564 A.2d 1137 (Del. 1989); Onti v. Integra Bank, 751 A.2d 904, 919-20 (Del. Ch. 1999); *Andaloro*, 2005 Del. Ch. LEXIS 125, at *37.

58. *See* PRATT ET AL., *supra* note 6, at 215-16; DAMODARAN, *supra* note 19, at 304-05.

59. Onti v. Integra Bank, 751 A.2d 904, 909-10 (Del. Ch. 1999).

60. *Kleinwort Benson Ltd.*, 1995 Del. Ch. LEXIS 75, at *4.

61. Highfields Capital v. AXA Fin., Inc., 939 A.2d 34, 42 (Del. Ch. 2007); Montgomery Cellular Holding Co. v. Dobbler, 880 A.2d 206, 220-21 (Del. 2005); *Andaloro*, 2005 Del. Ch. LEXIS 125, at *53; Gentile v. Single Point Fin. Inc., 2003 Del. Ch. WL 1240504, at *6 n.44.

62. *Highfields Capital*, 939 A.2d at 61 n.90; *Montgomery Cellular*, 880 A.2d at 221; Prescott Group Small Cap, L.P. v. Coleman Co., No. 17802, 2004 Del. Ch. LEXIS 131 (Del. Ch. Sept. 8, 2004).

Delaware courts have been suspicious of projections and valuation techniques that appear to have been created or used solely to justify a particular value.[63] Projections produced or adjusted for the purpose of valuation driven litigation, such as appraisal proceedings, are the most suspect.[64] Projections produced or adjusted in anticipation of a merger transaction are also suspect[65] but tend to be accepted by Delaware courts[66] if they otherwise appear reasonable. Similarly, courts in appraisal rights cases are generally dubious of the comparable company universes selected; they are very aware that the selections are made by advisors or consultants who have been hired by one of the parties to the litigation.[67] Such selections often fail to meet the burden of proof on the respective parties as to the reasonableness underlying their experts' testimony in appraisal actions.[68] "Comparable" companies that are in different industries from the subject company are viewed with particular suspicion by the courts.[69]

The courts have been slightly more receptive to valuation analyses developed by investment banks, and have even adopted investment banks' valuation methodologies in appraisal rights matters on occasion. In those cases, which include a situation in which an investment bank provided a valuation for both sides of a particular transaction[70] and another which involved a special committee assignment,[71] such banks were viewed, rightly or wrongly, as more objective than the valuation-expert-hired-for-the-litigation. In light of Vice Chancel-

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63. Cede & Co. v. Technicolor, Inc., No. 7129, 2003 Del. Ch. LEXIS 146, at *171-72 (Del. Ch. Dec. 31, 2003); Cede & Co. v. MedPointe Healthcare, Inc., No. 19354, 2004 Del. Ch. LEXIS 124 at *62 (Del. Ch. Aug. 16, 2004).

64. *Id.* at *62.

65. *Id.* at 61.

66. *Id.* at 62.

67. *See, e.g.*, *Prescott Group*, 2004 Del. Ch. LEXIS 131, at *79-84; Gray v. Cytokine Pharmasciences, No. 17451, 2002 Del. Ch. LEXIS 48, at *21 n.13 (Del. Ch. Apr. 25, 2002); *In re* Radiology Assoc., 611 A.2d 485, 489-90 (Del. Ch. 1991); *In re* PNB Holding Co. S'holders Litig., 2006 Del. Ch. LEXIS 158, at *95-96; Onti v. Integra Bank, 751 A.2d 904, 916 (Del. Ch. 1999).

68. *See Onti*, 751 A.2d at 916; Gilbert v. MPM Enterp., 709 A.2d 663, 671-72 (Del. Ch. 1997).

69. *Prescott Group*, 2004 Del. Ch. LEXIS 131, at *80-83; *Gilbert*, 709 A.2d at 671-72.

70. *Gray*, 2002 Del. Ch. LEXIS 48, at *14, *29-30.

71. Doft & Co. v. Travelocity.com Inc., No. 19734, 2004 Del. Ch. LEXIS 75, at *12-13, *37 n.55 (Del. Ch. May 21, 2004).

lor Strine's ridicule of Lehman Brothers in the *In re Topps*, however, bankers should assume their analyses will also be viewed with suspicion by Delaware courts.

Conversely, Delaware courts have typically accepted management projections in situations in which the management projections were deemed to have been produced in the normal course of business, as part of the on-going business planning process.[72] When such projections exist, Delaware courts will uniformly view DCF valuations based on such projections as more reliable than any other valuation technique, other than a merger market price check in certain circumstances.[73] This is consistent with a general bias of courts for the perceived veracity of contemporaneously produced evidence.[74] Two exceptions to this rule are where management (i) has a poor track record in producing accurate projections,[75] or (ii) disavows the credibility of such projections.[76]

Consequently, in situations in which: (1) ordinary course projections have been produced by (2) a management that has an accurate track record of forecasting, (3) the management has not disavowed such projections, and (4) such projections forecast a "mature" company growth rate,[77] Delaware courts would likely not recognize any method for calculating a terminal multiple except for an implied perpetuity growth rate.

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72. *Doft*, 2004 Del. Ch. LEXIS 75, at *22-23; *Prescott Group*, 2004 Del. Ch. LEXIS 131, at *76; Cede & Co. v. JRC Acquisition Corp., No. 18648-NC 2004 Del. Ch. LEXIS 12, at *18-19 (Del. Ch. Feb. 10, 2004); *In re* Emerging Commc'ns, Inc., 2004 Del. Ch. LEXIS 70, at * 45-46; Crescent/Mach I P'ship v. Turner, No. 17455-VCN 2007 Del. Ch. LEXIS 63, at *16-17 (Del. Ch. May 2, 2007).

73. Highfields Capital, Ltd. v. AXA Fin., Inc., 939 A.2d 34, 52-53 (Del. Ch. 2007). *See also* Union Ill. 1995 Inv. Ltd. P'ship v. Union Fin. Group, Ltd., 847 A.2d 340, 359 (Del. Ch. 2003) ("In view of the market's opportunity to price UFG directly as an entity, the use of alternative valuation techniques like a DCF analysis is necessarily a second-best method to derive value."); M.P.M. Enterp. v. Gilbert, 731 A.2d 790, 797 (Del. 1999) ("A merger price resulting from arms-length negotiating where there are no claims of collusion is a very strong indication of fair value.").

74. *Prescott Group*, 2004 Del. Ch. LEXIS 131, at *75-76; *JRC Acquisition Corp.*, 2004 Del. Ch. LEXIS 12, at *6-7.

75. Lane v. Cancer Treatment Ctrs. of Am., No. 12207-NC 2004 Del. Ch. LEXIS 108, at *100 n.134 (Del. Ch. July 30, 2004).

76. Doft & Co. v. Travelocity.com Inc., No. 19734, 2004 Del. Ch. LEXIS 75, at *20-23 (Del. Ch. May 21, 2004).

77. *See supra* pp. 592-93.

Delaware courts, however, have acknowledged the limitations of an implied growth rate in perpetuity. Such a method relies on the subject company having achieved a fairly mature level of growth at the end of the projection period, such that its cash flows are relatively stable.[78] As a result, this method is not always applied by the courts. For instance, a Delaware court did not even address the issue of using an implied growth rate in perpetuity in a case involving pharmaceutical companies in the midst of developing drug delivery products.[79]

C. *Terminal Multiples and the Judicial Process*

In appraisal rights cases Delaware courts tend to have little confidence in comparable company universes submitted to them,[80] and have shown a reluctance to allow the multiple ranges imputed from them to "infect" the DCF valuation. This is borne out by Delaware's refusal to accept DCF valuations in which over 70% of the total value is attributable to a terminal value based on a comparable company derived multiple.[81] In such cases, the courts view such DCF valuations as comparable company analyses packaged in a different form.[82] Arguably, this is a result of the nature of the creation of a judicial record. The context of a lawsuit does not allow for the court to conduct its own research so as to select a comparable company universe (although the courts can, and do, select certain submitted public comps as legitimate for analysis and ignore others).[83]

This problem does not arise when a court uses an implied perpetuity growth rate. In the DCF context, a court can use a

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78. Cavalier Oil Corp. v. Harnett, 564 A.2d 1137, 1145 (Del. 1989).

79. *Gray*, 2002 Del. Ch. LEXIS 48, at *31-35.

80. *See, e.g.*, *Prescott Group*, 2004 Del. Ch. LEXIS 131, at *79-83; Gilbert v. MPM Enterp., 709 A.2d 663, 671-72 (Del. Ch. 1997); *MedPointe Healthcare, Inc.*, 2004 Del. Ch. LEXIS 124, at *77.

81. *Prescott Group*, 2004 Del. Ch. LEXIS 131, at *89-90; *Gray*, 2002 Del. Ch. LEXIS 48, at *26-27; Union Ill. 1995 Inv. Ltd. P'ship v. Union Fin. Group, Ltd., 847 A.2d 340, 361 (Del. Ch. 2003); Highfields Capital v. AXA Fin., Inc., 939 A.2d 34, 53-54 (Del. Ch. 2007).

82. *Prescott Group*, 2004 Del. Ch. LEXIS 131, at *89; *Gray*, 2002 Del. Ch. LEXIS 48 at *27.

83. *See, e.g.*, *In re* PNB Holding Co. S'holders Litig., 2006 Del. Ch. LEXIS 158, at *98.

set of projections, which it believes were created in the normal course of business. Because of the formulaic nature of a DCF valuation based on a WACC analysis, a court has greater freedom take such projections and apply to them its own views as to appropriate betas, WACCs and implied growth rates in perpetuity, largely unencumbered by reliance on evidence submitted into the record for which it has a limited ability to evaluate. The court has the freedom to adjust any of the projections, betas, WACCs or implied growth rates in perpetuity to the extent it sees fit. This includes adjusting any of them outside of any parameters submitted by the "experts" in the litigation.

A good example of this is a case in which Vice Chancellor Strine constructed his own DCF by using management's projections from 2002-2007 (which contained double digit growth).[84] He then applied a second stage of growth of 8% during the years 2008 through 2010, and thereafter applied an implied growth rate in perpetuity of 5%.[85] Although this method was similar to the method proposed by one of the litigant's experts, Vice Chancellor Strine used his own judgment as to the second stage growth rate, length of the second stage of growth period and the growth rate in perpetuity.

If a terminal multiple were selected based on a universe of comparable companies, a court arguably would have a tougher time justifying a terminal multiple selection outside of the range implied by the comparable companies. The largest variable in selecting a comparable company multiple is in the selection of the comparable company universe. Although the courts can, and have, exercised judgment in which submitted "comparable" companies are truly comparable, they are not free to select additional companies for the universe that were not otherwise submitted by the litigants as part of the litigation record.

D. *Issues with Using Perpetual Growth Rates*

One problem investment banks have grappled with in using perpetuity growth rates in selecting terminal multiples is the choice of whether to use a "two stage" or "three stage"

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84. *Andaloro,* 2005 Del. Ch. LEXIS 125, at *45-50.

85. *Id.* at *50.

growth assumption. That is, whether to use a company's base projections (assume it is a five year model) and then immediately apply a perpetuity growth rate to the year five metric selected as appropriate (a "two stage" process), or to adopt the "three stage" approach use by Vice Chancellor Strine described above, in which an additional intermediate level of growth is assumed. In light of Vice Chancellor Strine's use of a three-stage process, one might assume that investment banks would also feel comfortable with this approach.

The problem arises because investment banks normally do not want to assume responsibility for creating projections.[86] This desire is understandable. Although one may argue that there is a difference between creating projections and merely "extending" them, the reality is that to extend the length of projections without management's approval results in either a conclusion different from that which management itself would forecast, or a conclusion that management may believe could not be reliably forecasted. Either approach subjects the investment bank to the allegation that it claims to be able to forecast a company's future better than its own management (which is not credible)[87] or to the allegation that it is simply "reverse engineering" the numbers to achieve a particular result, or both.[88]

In addition, using a two stage analysis in the context of management projections that involve double-digit growth will likely not pass judicial scrutiny.[89] There are two reasons for this. First, Delaware courts tend to select implied growth rates that are approximately 1 - 2% above the anticipated inflation

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86. *In re* Topps Co. S'holders Litig., 926 A.2d 58, 75 (Del. Ch. 2007).

87. *In re* Emerging Commc'ns S'holders Litig., 2004 Del. Ch. LEXIS 70, at *55-58.

88. In light of Vice Chancellor Strine's criticism of Lehman Brothers in *In re* Topps, it may not be possible for investment banks to avoid this problem. Lehman reduced the length of projections used from five years to three years because, according to Topps' counsel, "Lehman will not base a fairness opinion on projections that have not been prepared entirely by management." *In re* Topps, 924 A.2d 95. Strine noted that this approach "puts even more weight on the terminal value calculation" and thus "does not rationally achieve that objective." *Id.*

89. *Prescott Group Small Cap, L.P.*, No. 18702, 2004 Del. Ch. LEXIS 131, at *110.

rate.[90] This makes sense because a negative growth rate or zero growth rate suggests the business is shrinking in real terms.[91] Such businesses tend not to stay in business.[92] Alternatively, a growth rate in perpetuity in excess of 3-4% above the inflation rate may suggest a business that is growing significantly faster than the economy as a whole. This cannot be sustained in perpetuity. (Note, however, that Delaware courts have specifically rejected use of a growth rate that is simply a mirror of the long-term growth rate for gross national product, or the economy, as a whole.[93]) Thus, Delaware law seems to balance the need for some growth in excess of the inflation rate, presumably to reflect real growth assumed during the years immediately subsequent to the projection period, but not so much growth that the subject company would end up accounting for 50% of the country's GNP in 20 years.[94]

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90. Henke v. Trilithic Inc., No. 13155, 2005 Del. Ch. LEXIS 170, at *44 (Del. Ch. Oct. 28, 2005). Court selected a 5% growth rate with the intent of implying a real growth rate of 2-3%, consistent with forecasts for the cable television industry.

91. *See* Lane v. Cancer Treatment Ctrs. of Am., Inc., No. 12207-NC, 2004 Del. Ch. LEXIS 108, at *100, *117 (Del. Ch. July 30, 2004).

92. In fact, one court refused to allow a zero growth rate assumption, arguing that the perpetual growth rate assumption must be at least equal to the rate of inflation. *See id.* at *117.

93. Montgomery Cellular Holding Co. v. Dobbler, 880 A.2d 206 (Del. 2005); *Technicolor Inc.*, No. 7129, 2003 Del. Ch. LEXIS 146, at *68-69.

94. *See* Steven M. Davidoff, *Fairness Opinions*, 55 AM. U. L. REV. 1557 (2006). Professor Davidoff states, as part of a critique of Vice Chancellor Strine's opinion in *Andaloro*, that selecting a growth rate in excess of the growth rate of the U.S. economy is "an impossibility" and should never be selected in a DCF model. Professor Davidofff's statement suffers two problems. *Davidoff*, at 1583-84. First, he assumes the 5% implied growth rate in perpetuity selected by Strine is a real, not nominal, number. *Id.* at 1582-83. There is nothing in *Andaloro* to suggest that such is the case. In fact, it would be shocking if true. Management projections and investment bankers' analyses are almost always based on nominal figures. Any attempt to use a real figure for an implied perpetuity growth rate would mean examining the underlying projections, the assumed risk-free interest rate and the like for their implicit inflation assumptions and then backing such assumptions out of the analysis. *Andaloro* contained no such analysis or references. As *Andaloro* was decided in August 2005, it would be reasonable to assume the 5% perpetuity growth rate contained an inflation assumption of 2%-3%, thus resulting in a real growth rate of 2%-3%. This would be consistent with Professor Davidoff's cite of a real U.S. GDP growth rate of 3.4% from 1929 to 2002. *Id.* at 1583 n.124.

Technically, the relationship between real and nominal rates is expressed as

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Second, at least one Delaware court has been suspicious that in the "real world" the growth of a business would suddenly drop off.[95] In light of this precedent, another court would likely require additional evidence that such drop offs are frequent events. The nature of assembling fairness opinion presentations, however, and the often tight time requirements they require, generally do not lend themselves to conducting such economic research in connection with such assembly. Therefore, it is unclear that the investment bank could collect the data in the course of preparing its analysis that would satisfy a Delaware court if it were to select a two stage process in such a situation.

E. *Issue with Using Comparable Companies Multiple*

One quirk in Delaware law that has recently come to the attention of the academic community is that Delaware courts have consistently ruled that comparable company analyses contain an implicit minority discount.[96] As a result, whenever they have relied on such a methodology in an appraisal case,

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$$\overline{\text{real}} = \frac{[1 + \text{nominal}]}{[1 + \text{inflation}]} - 1$$

STOCKS, BONDS, BILLS, AND INFLATION 2006 YEARBOOK (VALUATION EDITION) 32 (Roger Ibbotson ed., publisher ed. 2006).
Second, Professor Davidoff uses an historical annual growth rate measured from 1929 to 2002 of 3.4% to argue that a 5% forward-looking growth rate is impossibly high. *Davidoff*, at 1582-83. He cites no studies as to what forecasters were predicting for future U.S. growth. He assumed that the future would look like the past. Elsewhere in his article he criticizes Strine for selecting an equity risk premium that is too high. Strine had selected an equity risk premium of 7% (presumably based on Ibbotson data). *Id.* at 1584. Professor Davidoff cited a study that over previous 101 years, the annualized (geometric mean) US equity risk premium was 5.8%. *Id.* at 1583 n.124. Of course, if Professor Davidoff had cited Ibbotson, which bases its equity risk premium of U.S. equity returns since 1926 (much closer to his 1929 to 2002 GDP growth figure), he would have found an equity risk premium of approximately 7.0%. *See supra* p. 587 for more current estimations of equity risk premiums.

95. Prescott Group Small Cap v. The Coleman Co., 2004 Del. Ch. LEXIS 131, at *109.

96. Lawrence A. Hamermesh & Michael L. Wachter, *The Short and Puzzling Life of the "Implicit Minority Discount" in Delaware Appraisal Law* 18 (Univ. of Pennsylvania Inst. for Law and Econ., Research Paper No. 07-01, 2007). This article provides an excellent discussion of the origin of the implicit minority discount in Delaware law, its basis on a misunderstanding of a Pratt valuation book and Pratt's subsequent clarification in later editions.

they have applied a "gross-up" to the value resulting from the comp company analysis to reach a fair, or intrinsic, value. The most frequently used gross-up percentage has been 30%,[97] but 20% has also been approved.[98]

Delaware courts, however, have not applied this implicit minority discount theory to terminal multiples based on a comparable company analysis.[99] Thus, there is a disconnect between the terminal multiples for DCF valuations and the separate comparable company analysis valuation methodology. Whether Delaware courts have taken this position as a result of misinterpretation of financial theory, clever plaintiffs' lawyers or for undisclosed policy reasons, the impact will be higher valuations than would otherwise be justified. At least one Delaware court has acknowledged this issue[100] and has implied that the issue has not been settled.[101]

Given that a Delaware court is most likely to scrutinize an investment banker's valuation analysis in the context of applying the "entire fairness" test to a going-private transaction, any policy reasons underlying the current misapplication of implicit minority discounts in the comparable company analyses could be used to expand this faulty financial analysis to justify even higher valuations owed to minority shareholders in a going-private transaction. Although one would hope that any fi-

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97. *Lane*, 2004 Del. Ch. LEXIS 108, at *129-30; *Andaloro*, 2005 Del. Ch. LEXIS 125, at *70 n.74; *Prescott Group*, 2004 Del. Ch. LEXIS 131, at *84 (citing *Lane*, citing Doft & Co. v. Travelocity.com, Inc., 2004 Del. Ch. 75); *Doft & Co.*, 2004 Del. Ch. LEXIS 75, at *48 (citing three additional cases).

98. *Lane*, 2004 Del. Ch. LEXIS 108, at *130.

99. Lawrence A. Hamermesh & Michael L. Wachter, *The Short and Puzzling Life of the "Implicit Minority Discount" in Delaware Appraisal Law* 18 (Univ. of Pennsylvania Inst. for Law and Econ., Research Paper No. 07-01, 2007).

100. *Highfields Capital*, 2007 Del. Ch. LEXIS 126, at *67-68 n.72.

101. To appreciate the faulty reasoning underlying the implicit minority discount approach, consider the analysis that would be necessary to price the sale of a controlling stake in a publicly traded company, which under Delaware law is entitled to control premium. One would need to adjust for the "minority discount" embedded in the public stock price and then add an additional control premium on top of the initial adjustment. This "double dipping" is especially dubious in light of the size of control premiums paid in M&A transactions for entire companies, often with expected synergies built into the purchase prices. For additional arguments as to why the prices of publicly traded securities do not include a minority discount, *see* STOCKS, BONDS, BILLS, AND INFLATION 2006 YEARBOOK (VALUATION EDITION) 87 (Roger Ibbotson ed., publisher ed. 2006).

nal resolution of this issue under Delaware law would be decided on the intellectual merits, the adage of "bad facts make bad law" could result in an expansion of this principle, at least in the short-term.

VI.
SELECTING TERMINAL MULTIPLES CONCLUSIONS

The most important factor in choosing a proper terminal value methodology involves an honest estimation of the management's ability to project future financial results. This involves investigating management's past projection accuracy, understanding the context in which the subject projections were produced, and understanding the bases for the assumptions underlying the projections, especially if the projections reflect deviations from historical trends. As previously stated, if management has a solid track record of accurate projections, produces projections as part of a normal course business plan that is more than a "wish list" and is in an industry that is mature or is approaching maturity, then it is likely that using a perpetuity growth rate multiple is the proper methodology. In fact, in such a situation it is very likely that a Delaware court would take a dim view of any other methodology.

In other contexts, however, blindly using a perpetuity growth rate simply because Delaware law has expressed a preference for such method may be a mistake. First, if management has a poor track record of projecting results accurately, the DCF analysis itself will be suspect. In such event, a multiple based on public comps may be preferable, even if it only produces another comparable company analysis in a different form, depending upon the bankers' confidence in the public comp universe. This is in part a function of whether the most relevant public comp metrics are in a fairly tight band, or whether they are seemingly "all over the place". (This issue is distinct from the issue of whether the "comparable" companies are truly comparable to begin with.)

Second, even if management has a decent track record in producing accurate projections, if the current projections involve double-digit growth, it may be wise to avoid using an implied perpetuity growth rate, other than for providing a "reality check." As discussed above, projections with double-digit growth rates will usually require a three stage process. If management is unwilling to adopt an intermediate growth rate as

"its own," the investment bank is in a difficult situation. (Management teams will often refuse to do so, on the understandable theory that if they thought they could forecast out that far they would have extended the projections farther in the normal course.)

In the appraisal context, the Delaware courts have yet to explain the basis on which they conclude that it is reasonable to assume that a particular company is likely to achieve such a mature status at the end of the projection period, or, as in the situation of Vice Chancellor Strine in *Andaloro* referred to above, the basis on which an intermediate growth period is assumed for a particular period of time. The answer may be based, in part, on the court's view of the credibility of the various financial experts' valuation materials that are introduced into the record. It is also, however, a function of the court trying to choose a set of inputs or a result that "feels" right, even though it sometimes seems doubtful that the court would accept such reasoning from a financial expert attempting to justify a selected discount rate or terminal multiple. Delaware courts generally accept this reasoning only if based on the contemporaneous judgment of a management group that the courts otherwise think is competent.

As noted above, however, in light of *In re Topps*, the investment bank may need to address this issue directly. In situations in which credible management projections end with double growth growth, the investment bank will be confronted with "creating" projections either by extending the projection period to a point at which the growth tapers to a more mature, single digit nature, or by applying a terminal multiple that will most likely carry with it a larger overall proportion of the aggregate value embedded in the DCF model. Confronting this issue head on in a thoughtful and analytically rigorous manner should be the best defense for a valuation analysis subject to Delaware court scrutiny. Above all else, the role of the investment bank's fairness opinion committee and valuation analysis review process should be to ensure that its "highly paid valuation advisors" can "rationally explain" their subjective judgments underlying their analyses. If an investment banking deal team cannot thoughtfully defend its analyses to its internal fairness committee, one should assume it will not pass through a Delaware legal proceeding unscathed (or at least free from ridicule).