RESPONSE

UNIQUE RISK AND BANKRUPTCY VALUATION

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Professors Ayotte & Morrison argue in their recent article that "the use of 'company-specific' or 'unsystematic' premiums when calculating the discount rate for future cash flows" has "no reliable basis in finance theory or evidence."[1] "These are nothing more than arbitrary add-ons that drive the company's reported value downward."[2] They would therefore have judges "rul[e] out problematic assumptions, such as company-specific risk premia" in discount rates[3] and "consistently apply the [Capital Asset Pricing Model (CAPM)]."[4] Indeed, they argue that "methods that allow for 'company-specific' premia . . . . fail the *Daubert* standard of reliability."[5]

Ayotte & Morrison would be on firm ground if they restricted their claim to the valuation of the equity of the handful of publicly traded firms that file for bankruptcy. However, they do not,[6] and both finance theory and evidence support the use of company-specific risk premia in other markets. Failing to include these premia will drive the company's reported value upward, and in bankruptcy overvaluation may be more harmful than undervaluation because those disappointed with a low judicial valuation can sometimes turn to the market for a second opinion.

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[1] Kenneth Ayotte & Edward R. Morrison, *Valuation Disputes in Corporate Bankruptcy,* 166 U. PA. L. REV. 1819, 1822 (2018).

[2] *Id.*

[3] *Id.* at 1846.

[4] *Id.*

[5] *Id.* at 1841.

[6] *Id.* at 1834-36. Ayotte & Morrison do acknowledge that adjustments for company-specific risk "might be justified on grounds that shareholders cannot diversify (as in a small owner-managed company)." *Id.* at 1834-35.

According to the finance literature, investors who are not well-diversified should demand very large company-specific risk premia.[7] For example, one paper suggests that entrepreneurs should apply a discount rate that is "two to four times as high as for well-diversified investors" because that is the opportunity cost of capital predicted by Ayotte & Morrison's preferred model, the CAPM.[8]

Just because an investor should demand a company-specific risk premium does not mean that the market will reward her with one. One should expect well-diversified investors to determine the prices and thus the expected returns of publicly traded stocks, and investors are unlikely to earn company-specific risk premia in this market. However, well-diversified investors may not set prices in other markets. For example, entrepreneurs may be unable to sell their stock without reducing their incentive to work hard and maximize the firm's cash flow. Even private equity investors such as venture capitalists and buy-out funds may earn company-specific risk premia. Although the passive investors in these markets are likely well-diversified, the managers who take positions in these funds are not, and one should therefore expect these managers to consider company-specific risk when pricing deals.[9]

The empirical evidence is consistent with the above theory. There is a strong consensus that company-specific risk premia do not exist in public equity markets,[10] but publicly traded firms account for a very small share of bankruptcy filings.[11] Ayotte & Morrison cite a 2002 paper that finds that entrepreneurs failed to diversify and still did not earn a measurably higher return than that available from publicly traded stocks.[12] However, a 2014

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[7] *See infra* Part I.

[8] *See* Frank Kerins, Janet Kiholm Smith & Richard Smith, *Opportunity Cost of Capital for Venture Capital Investors and Entrepreneurs,* 39 J. FIN. & QUANTITATIVE ANALYSIS 385, 386 (2004).

[9] *See generally* Michael Ewens, Charles M. Jones & Matthew Rhodes-Kropf, *The Price of Diversifiable Risk in Venture Capital and Private Equity*, 26 REV. FIN. STUD. 1853 (2013) (finding that venture capitalists price company-specific risks, including in net fund returns).

[10] *See infra* notes 34–36 and accompanying text.

[11] The Administrative Office of the U.S. Courts reports 7095 Chapter 11 filings in 2018. U.S. COURTS, U.S. BANKRUPTCY COURTS – BUSINESS AND NONBUSINESS CASES FILED, BY CHAPTER OF THE BANKRUPTCY CODE 1 tbl.F-2 (2019), https://www.uscourts.gov/sites/default/files/data_tables/bf_f2_1231.2018.pdf [https://perma.cc/2MR4-HZ76]. Lynne LoPucki's database of large ($100 million in assets in 1980 dollars), public company bankruptcies lists just eighteen firms for that year. *Contents of the BRD*, UCLA-LOPUCKI BANKRUPTCY RES. DATABASE, http://lopucki.law.ucla.edu/contents_of_the_webbrd.htm [https://perma.cc/ZL4N-TTBP] (last visited Nov. 22, 2019); *Year Filed—Study Summary*, UCLA-LOPUCKI BANKRUPTCY RES. DATABASE, http://lopucki.law.ucla.edu/design_a_study.asp?OutputVariable=YearFiled [https://perma.cc/Z2NM-YUVM] (last visited Nov. 22, 2019). Of course, many of these firms had multiple subsidiaries and therefore accounted for multiple filings, and some publicly traded bankrupt firms had insufficient assets to qualify for LoPucki's database. *See Contents of the BRD*, *supra* (defining "large," "public," and "case" for the purposes of the database).

[12] Ayotte & Morrison, *supra* note 1, at 1829 n.40 ("Private equity returns are on average no higher than the market return on all publicly traded equity." (quoting Tobias J. Moskowitz & Annette Vissing-Jørgensen, *The Returns to Entrepreneurial Investment: A Private Equity Premium Puzzle?*, 92 AM. ECON. REV. 745, 745 (2002))).

article suggests that the 2002 study's results were biased by the dot-com bubble and that entrepreneurs do, in fact, earn an economically meaningful premium.[13] Moreover, a 2013 study finds that companies pay company-specific risk premia when they take venture capital financing,[14] and a series of articles find that private firms sell for substantially less than comparable public firms.[15]

The preceding suggests that courts should not apply a company-specific risk premium if the asset can be sold to the well-diversified investors found in the market for publicly traded stock. However, bankruptcy's reorganization process presumes that firms cannot be easily sold. Ayotte & Morrison give an additional reason to ignore company-specific risk—the methods used to estimate the impact of this risk are so unreliable that they should be ruled inadmissible under the *Daubert* standard.[16]

Even if Ayotte & Morrison are correct that experts cannot reliably measure the impact of company-specific risk, judges should not simply assume that investors are well-diversified and apply the CAPM. Doing so would be analogous to driving the speed limit during a blizzard because the driver lacks a reliable way to estimate the impact of conditions on the maximum safe driving speed. The safer approach for the driver is to make some rough adjustment based on experience (a rule of thumb) or just not drive at all. Similarly, the better approach for a bankruptcy judge may be to apply a rule of thumb or forego both discounted cash flow and market multiple analysis and require that the moving party provide direct market evidence of value.

Bankruptcy valuation disputes frequently arise when someone wants to use a judicial valuation instead of a market valuation. For example, a debtor who wants to delay a secured creditor's foreclosure may ask the court to decide that the collateral is sufficiently valuable to adequately protect the secured creditor's claim.[17] Alternatively, the debtor could appeal to a market valuation of the collateral by asking another lender to lend against it and then use the cash to repay the old lender in full.

Markets fail, and this Response does not call for the replacement of reorganization with an entirely market-based system. Rather, it asks that a bankruptcy judge consider all of the uncertainties in her own valuation before substituting her judgment for that of the market. Courts should demand that the party wishing to rely on a judicial valuation bear the burden of proof; and

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[13] *See generally* Katya Kartashova, *Private Equity Premium Puzzle Revisited*, 104 AM. ECON. REV. 3297 (2014).

[14] *See generally* Ewens, Jones & Rhodes-Kopf, *supra* note 9.

[15] *See infra* note 53 and accompanying text.

[16] *See* Ayotte & Morrison, *supra* note 1, at 1841 ("[W]e believe that [company-specific premia] fail the *Daubert* standard of reliability.").

[17] 11 U.S.C. § 362(d)(2) (2018).

so in many cases the burden of proof should be placed not on the party who wants to argue for a company-specific risk premium but rather on the party who wants to argue for its absence.

In the context of fraudulent transfer actions, Ayotte & Morrison argue that market evidence can be used to "*rule out* the possibility that the firm was insolvent . . . . [i]f a debtor can access credit markets on terms comparable to those offered by solvent borrowers."[18] However, market evidence should not necessarily rule out a fraudulent transfer claim if the debtor has a significant amount of debt held by creditors who are not well-diversified and are thus more vulnerable to company-specific risk. Examples of such creditors include tort victims, retirees, and small trade creditors.

Scholars argue that fraudulent-transfer law imposes limits on risk-shifting that debtors and creditors would have agreed to if they had bargained in advance,[19] or, similarly, that it limits unreasonable risk-shifting.[20] Because company-specific risk imposes greater costs on non-diversified creditors, these creditors would demand stronger protections in a hypothetical bargain, and it may be unreasonable to force them to bear a risk even if it is reasonable to force this risk on a well-diversified investor.

I. SHOULD WE EXPECT COMPANY-SPECIFIC RISK PREMIA?

Between 1900 and 2017, the average annual return of common stocks exceeded that of treasury bills by 7.7%,[21] suggesting that investors are willing to pay much less for risky cash flows and therefore earn a higher average or expected return from these investments. However, even risk-averse investors should not demand a higher expected return due to risks that are specific to a single firm if investors can cheaply spread their bets (diversification).[22] Examples of company-specific risk, also called idiosyncratic, unique, unsystematic or diversifiable risk, include the risk that a firm's CEO may die prematurely or that a competitor will build a better mousetrap. Not all risks are unique. For example, a trade war would

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18 Ayotte & Morrison, *supra* note 1, at 1843.

19 Douglas G. Baird & Thomas H. Jackson, *Fraudulent Conveyance Law and Its Proper Domain*, 38 VAND. L. REV. 829, 835-36 (1985).

20 Barry L. Zaretsky, *Fraudulent Transfer Law As the Arbiter of Unreasonable Risk*, 46 S.C. L. REV. 1165, 1173-74 (1995).

21 *See* RICHARD A. BREALEY, STEWART C. MYERS & FRANKLIN ALLEN, PRINCIPLES OF CORPORATE FINANCE 168 (13th ed. 2020).

22 *Id.* at 185 ("The risk of a well-diversified portfolio depends on the market risk of the securities included in the portfolio.").

reduce the price of many stocks.[23] Risks that affect a large number of stocks are called market, systemic, or non-diversifiable risks.

Not all investors fully diversify, and sometimes there are good reasons for concentrated positions. Corporate executives, entrepreneurs, private equity managers, and hedge fund managers often have much of their wealth invested in the firms or funds they manage. These concentrated holdings can address agency problems by forcing the leaders to internalize some of the consequences of their decisions.[24] However, this concentration is costly because the investors are foregoing the risk-reduction benefits of diversification.

Several articles suggest that an inability to fully diversify can substantially reduce the value of an asset to an investor. Consider stock options. Abudy & Benninga and Meulbroek separately estimate that restrictions on trading reduce the value of executive or employee stock options by about half.[25] Hall & Murphy are even more pessimistic, noting that an executive with an assumed level of risk-aversion "holding 67% of his wealth in stock will only value an at-the-money option at about one-fifth of its Black–Scholes value."[26]

Kerins, Smith & Smith adapt Ayotte & Morrison's preferred model, the CAPM, to estimate the effect of a lack of diversification on the required discount rate, and they estimate that, with a one-year holding period, "the entrepreneur's cost of capital is two to four times as high as the cost of capital for a well-diversified investor."[27] This is true even when most of the entrepreneur's wealth is invested elsewhere. Under their assumptions, the

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[23] *See, e.g.*, William Mauldin et al., *Trump Lashes Out at China, Sending Markets Falling*, WALL STREET J. (Aug. 23, 2019, 6:06 PM), https://www.wsj.com/articles/trump-orders-u-s-businesses-to-find-alternative-to-china-11566585967 [https://perma.cc/K8J8-NE6Y] (describing 600-point drop in Dow Jones Industrial Average on August 23 following President Trump tweets encouraging U.S. companies to find alternatives to China in response to China announcement of retaliatory tariffs); Jim Zarroli, *Stock Markets Take Another Hit as the Trade War with China Heats Up*, NPR (Aug. 5, 2019, 12:22 PM), https://www.npr.org/2019/08/05/748236662/stock-markets-take-another-hit-as-the-trade-war-with-china-heats-up [https://perma.cc/4QTS-ZDHE] (describing 900-point drop in Dow Jones Industrial Average after China "allowed" the value of the yuan to drop to "weakest level in a decade").

[24] Michael C. Jensen & William H. Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure*, 3 J. FIN. ECON. 305, 312-13 (1976).

[25] *See* Menachem Abudy & Simon Benninga, *Non-Marketability and the Value of Employee Stock Options*, 37 J. BANKING & FIN. 5500, 5507 (2013) ("[T]he mean private [employee stock option] value is about 45% relative to a plain vanilla [Black–Sholes] value."); Lisa K. Meulbroek, *The Efficiency of Equity-Linked Compensation: Understanding the Full Cost of Awarding Executive Stock Options*, 30 FIN. MGMT., no. 2, 2011, at 5, 27 ("The completely undiversified manager values executive stock options at 53% of their cost to the mean Internet-based firm by assuming a three-year vesting period and ten-year options.").

[26] Brian J. Hall & Kevin J. Murphy, *Stock Options for Undiversified Executives,* 33 J. ACCT. & ECON. 3, 15 (2002).

[27] *See* Kerins, Smith, & Smith, *supra* note 8, at 404.

"opportunity cost of a well-diversified investor is 11.4%."[28] "With 25% of wealth in the venture, the entrepreneur's cost of capital [is] 40.0%."[29]

The basic intuition can be explained with an example. Assume that treasury bills offer a return of 2% and that the expected return on the S&P 500 is 8%. An entrepreneur is considering an investment that will require all of her wealth, and she will not be able to diversify her holdings for the foreseeable future. The standard deviation of the returns on this investment is four times higher than the standard deviation of the returns on the S&P 500, but the returns on the investment are not highly correlated with those of the S&P 500 so that the investment has a beta of one.[30] If the entrepreneur ignores her lack of diversification and naively applies the CAPM, she will make the investment as long as it offers her an expected return of 8% because this is the expected return that the CAPM predicts she can earn from other investments with a beta of one.[31] However, her undiversified portfolio will have the same risk (standard deviation) as a well-diversified portfolio with a beta of four, and the CAPM predicts that she can earn an expected return of 26% on such a portfolio.[32] Thus, her true opportunity cost of capital is 26%.

Company-specific risk can dramatically impact the opportunity cost of capital even if the investor has not devoted all of her wealth to an investment. The following graph shows the opportunity cost of capital for an investment as a function of the share of the portfolio devoted to this investment if the rest of the portfolio is invested in the S&P 500.[33] Note that this function is concave—much of the impact of company-specific risk on the required return

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28 *Id.* at 401.

29 *Id.* at 403.

30 The beta of an investment is given by $\beta_i = \rho_{im}\frac{\sigma_i}{\sigma_m}$. σ_i is the standard deviation of the investment's returns, σ_m is the standard deviation of the return on the market portfolio (often assumed to be the S&P 500), and ρ_{im} is the correlation coefficient of the returns of the investment and the return on the market portfolio.

31 The CAPM predicts that the expected return of an investment is given by the equation: $r_i = r_f + \rho_{im}\frac{\sigma_i}{\sigma_m}(r_m - r_f)$. r_i is the expected return on the investment, r_f is the return on a risk-free investment (assumed to be the return on treasury bills), r_m is the expected return on the market portfolio.

32 More generally, one can estimate the required return of the concentrated investment with the equation: $r_i = r_f + \frac{\sigma_i}{\sigma_m}(r_m - r_f)$. This is the same as the equation that the CAPM provides for the well-diversified investor except that $\beta_i = \rho_{im}\frac{\sigma_i}{\sigma_m}$ is replaced by $\frac{\sigma_i}{\sigma_m}$.

33 The equation for the required return for the concentrated investment is given by:
$$r_i = \frac{r_f + \frac{(x^2\sigma_i^2 + (1-x)^2\sigma_m^2 + 2x(1-x)\rho_{im}\sigma_i\sigma_m)^{1/2}}{\sigma_m}(r_m - r_f) - (1-x)r_m}{x}$$ where x represents the share of the portfolio in the concentrated investment. Note that if we instead assumed that the investor put the rest of her portfolio in the risk-free security, the opportunity cost of capital would be invariant to the concentration and would again simplify to $r_i = r_f + \frac{\sigma_i}{\sigma_m}(r_m - r_f)$.

from the investment can happen at relatively low levels of concentration.[34] For example, if the investor has just 25% of her portfolio devoted to the investment, her opportunity cost is 17.4%, more than double the 8% suggested by a naive application of the CAPM.

Figure 1: Concentration and Opportunity Cost of Capital[35]

Concentration (share of portfolio devoted to investment)
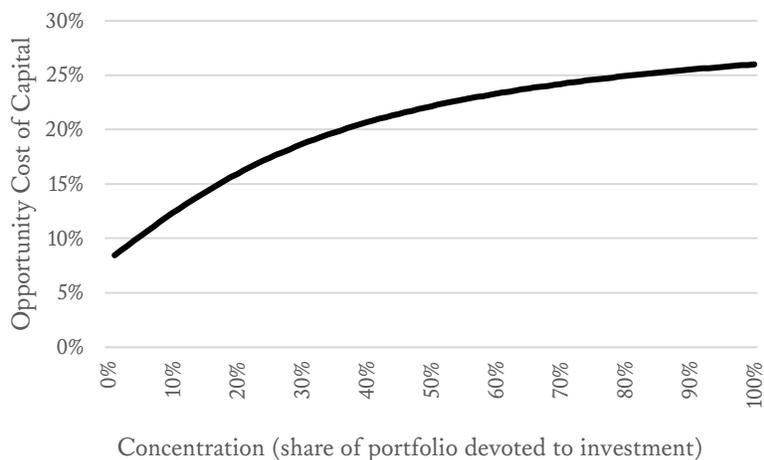
Investors should demand a higher expected return to take concentrated positions in investments with more company-specific risk, but that doesn't mean that exposure to company-specific risk necessarily comes with a premium. If a small investor foolishly invests all of her wealth in a single publicly-traded stock, she won't be rewarded for bearing company-specific risk because she must compete against well-diversified investors who can bear this risk at effectively no cost. For company-specific risk to affect expected returns, there must be some reason why well-diversified investors do not play the role of the marginal investor.

The most obvious reason why well-diversified investors may not set prices is that they cannot make the investment or cannot buy it without changing the cash flow. Absent the concentrated positions taken by executives and entrepreneurs, agency costs would be higher and future cash flows would likely be lower. Agency costs may also lead to company-specific risk premia in the private equity market. The institutions and wealthy individuals who make passive investments in these funds can be presumed

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[34] The same may be true of the restricted holding period. *See generally* Menachem Abudy, Simon Benninga & Efrat Shust, *The Cost of Equity for Private Firms,* 37 J. CORP. FIN. 431, 439 (2016).

[35] r_f = 0.02, r_m = 0.08, ρ_{im} = 0.25, σ_i = 4σ_m.

to be well-diversified, but the fund managers almost always take substantial positions to incentivize them to make good decisions. Because of their concentrated positions, one should expect the private equity managers who price deals to consider their self-interest and offer lower prices to firms with more company-specific risk.[36]

Finally, some scholars have argued that we may even find company-specific risk premia in the market for publicly traded stock. If enough investors take concentrated positions due to transactions costs, behavioral biases, or other reasons, it may be impossible for any investor to fully diversify, and company-specific risk may still matter in equilibrium.[37]

II. DO INVESTORS EARN COMPANY-SPECIFIC RISK PREMIA?

The vast majority of the empirical literature on company-specific risk premia focuses on the returns on publicly traded stock.[38] Some published papers and recent working papers do report evidence of company-specific risk premia in this market.[39] However, it is fair to describe the weight of the literature as finding that investors in publicly traded stock do not earn higher returns for assuming

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[36] *See generally* Ewens, Jones & Rhodes-Kropf, *supra* note 9.

[37] *See, e.g.*, Haim Levy, *Equilibrium in an Imperfect Market: A Constraint on the Number of Securities in the Portfolio*, 68 AM. ECON. REV. 643 (1978) (finding that the weighted average of the *k*th investor systematic risk is a better measure of the investment's security risk than CAPM); Robert C. Merton, *A Simple Model of Capital Market Equilibrium with Incomplete Information*, 42 J. FIN. 483, 505 (1987) (discussing the effects of incomplete information on capital the costs and benefits of diversification); Burton G. Malkiel & Yexiao Xu, Idiosyncratic Risk and Security Returns 35 (May 2004) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=255303 [https://perma.cc/ABU2-Z243] (finding that company-specific risk "will affect asset returns when not every investor is able to hold the market portfolio" and that the volatility of this risk "is more powerful than either beta or size measures in explaining the cross section of returns"). For a review of recent literature on company-specific risk premiums, see generally Brian Calvert & David C. Smith, Company-Specific Risk Premiums: Update on the Scholarly Evidence 3 (Mar. 20, 2011) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1791213 [https://perma.cc/WR6C-FU6Q].

[38] *See generally* Calvert & Smith, *supra* note 37 (summarizing recent literature).

[39] *See generally, e.g.*, Fangjian Fu, *Idiosyncratic Risk and the Cross-Section of Expected Stock Returns*, 91 J. FIN. ECON. 24, 36 (2009) (using exponential generalized autoregressive conditional heteroskedasticity (EGARCH) models to "estimate the expected idiosyncratic volatilities and find[ing] they are positively related to expected returns"); Amit Goyal & Pedro Santa-Clara, *Idiosyncratic Risk Matters!*, 58 J. FIN. 975 (2003) (finding a significant correlation between company-specific risk and returns); Mikael Bergbrant & Haimanot Kassa, *Is Idiosyncratic Volatility Related to Returns? Evidence from a Subset of Firms with Quality Idiosyncratic Volatility Estimates* (Mar. 12, 2018) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3128867 [https://perma.cc/K549-JNRE] (using "a combination of out-of-sample conditional volatility forecasts from different EGARCH models that pass relevant diagnostic tests" and finding a positive correlation between expected idiosyncratic volatility and returns).

company-specific risk.[40] As noted above, however, there are theoretical reasons to believe that this result may not generalize to other markets.

Data limitations make it much more difficult to test for company-specific risk premia in other markets, but the existing evidence supports their existence. A 2013 study by Ewens, Jones & Rhodes-Krops suggests firms pay company-specific risk-premia in the venture capital market, finding that returns on venture capital investments in firms with high company-specific risk exceed those on firms with low company-specific risk.[41]

Ayotte & Morrison suggest that entrepreneurs do not earn company-specific risk premia. As evidence they cite a 2002 study that finds that entrepreneurs are not well-diversified but still do not earn a return that is higher than that of publicly traded stocks.[42] However, a 2014 study published in the same journal finds that entrepreneurs *do* earn higher returns and that the difference is economically meaningful.[43] Investors in privately held firms averaged 16.5% annually while investors in publicly traded firms averaged 9.2%;[44] this difference is nearly as large as that between publicly traded stocks and treasuries.[45] The author of the 2014 study suggests that the failure of the 2002 study to find a difference was likely due to the outsized returns enjoyed by technology stocks in the late 1990s.[46] Put more bluntly, the study cited by Ayotte & Morrison may have failed to detect a company-specific risk premium because it examined data from the dot-com bubble.

Although the estimated difference between the returns to entrepreneurs and the returns to publicly traded stock is economically meaningful, it is lower than the difference predicted by some of the theory discussed in Part I.[47] Moreover, someone may publish yet another study suggesting the 2002 study was right and the 2014 study was wrong. But if the difference in returns is insufficient to make up for the added risk, why wouldn't entrepreneurs invest

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[40] *See* Calvert & Smith, *supra* note 37, at 3 ("[T]he current evidence supports . . . finding that company-specific risk does not explain variation in cross- sectional stock returns and that holders of risky securities do not appear to receive compensation for bearing company-specific risk.").

[41] *See* Ewens, Jones & Rhodes-Kropf, *supra* note 9, at 1881.

[42] *See* Ayotte & Morrison, *supra* note 1, at 1829 n.40 ("Private equity returns are on average no higher than the market return on all publicly traded equity." (quoting Moskowitz & Vissing-Jørgensen, *supra* note 12, at 745)).

[43] *See* Kartashova, *supra* note 13; *see also* Elisabeth Mueller, *Returns to Private Equity – Idiosyncratic Risk Does Matter!,* 15 REV. FIN. 545, 546 (2010) (" We . . . find an economically important influence of idiosyncratic risk [on returns].").

[44] *See* Kartashova, *supra* note 13, at 3298.

[45] *See* BREALEY, MYERS & ALLEN, *supra* note 21, at 168 (finding that between 1900 and 2017, the average annual return of common stocks exceeded that of Treasury bills by 7.7%).

[46] Kartashova, *supra* note 13, at 3298.

[47] One possible explanation is that the primary asset of many entrepreneurs is human capital that is not irrevocably committed to the firm. *See generally* Valery Polkovnichenko, *Human Capital and the Private Equity Premium,* 6 REV. ECON. DYNAMICS 831, 844 (2003) ("[H]uman capital substantially limits the effect of idiosyncratic risk on the required private equity premium.").

instead in the public market? Perhaps the entrepreneurs are overly optimistic about their prospects. However, the authors of the 2002 study offer other explanations. Most notably, they suggest that scholars may be unable to observe all of the returns to the entrepreneurs' investments.[48] These hard to observe returns may be pecuniary (tax evasion) or non-pecuniary (satisfaction from being one's own boss).[49]

III. WHEN SHOULD BANKRUPTCY COURTS APPLY UNIQUE RISK PREMIA?

Ayotte & Morrison claim that discounted cash flow should be "used as a last resort when more transparent approaches (surrounding market evidence, comparable transactions, or comparable company multiples) are unreliable."[50] Comparable company analysis measures value by comparing the firm to a publicly traded firm and using that firm's stock prices.[51] Comparable transaction analysis measures value by comparing the firm to recently sold public or private firms and using the sale prices.[52] Deciding whether two firms are truly comparable is as much art as science, and company-specific risk premia may render firms incomparable. The evidence discussed above suggests that investors do not earn company-specific risk premia from publicly traded stocks but that they do earn these premia from privately held stock. Therefore, the analyst may need to apply some discount when comparing a privately held firm to a publicly traded firm. Indeed, several peer-reviewed articles find that private firms sell for substantially less than public firms with similar characteristics.[53]

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[48] *See* Moskowitz & Vissing-Jørgensen, *supra* note 12, at 771-73. They also offer explanations based on risk preferences. *Id.* Entrepreneurs may be less risk-averse than other investors, suggesting that the utility loss from the concentration may be small. *Id.* Entrepreneurs may also seek skewness or right-tail returns (the standard deviation may not capture all of an investor's preferences with regard to risk). *Id.* Note, however, that neither of these can be a complete explanation because diversification allows the investor to earn a higher return for any given level of risk, and investors can also seek right-tail returns through options or other derivatives.

[49] *Id.*

[50] *See* Ayotte & Morrison, *supra* note 1, at 1822.

[51] *Id.* at 1830.

[52] *Id.*

[53] These discounts are usually labelled "non-marketability discounts." *See generally, e.g.*, Stanley Block, *The Liquidity Discount in Valuing Privately Owned Companies*, 17 J. APPLIED FIN., Fall 2007, at 33 (estimating an average discount between 20% and 25%); John Koeplin et al., *The Private Company Discount*, 12 J. APPLIED CORP. FIN. 94 (2000) (estimating a discount of 20% to 30% for domestic companies); Maher Kooli et al., *A New Examination of the Private Company Discount: The Acquisition Approach*, 6 J. PRIV. EQUITY, Summer 2003, at 48 (estimating median discounts between 17% and 34%); Micah S. Officer, *The Price of Corporate Liquidity: Acquisition Discounts for Unlisted Targets*, 83 J. FIN. ECON. 571, 572 (2007) (estimating an average discount between 15% and 30%); John Paglia &

Ayotte & Morrison acknowledge that there may be a theoretical case for applying a company-specific risk premium when using discounted cash flow analysis to value closely held firms,[54] but they do not qualify their argument that courts should simply apply the rate determined by the CAPM for well-diversified investors.[55] The refusal to endorse company-specific risk premia for closely held firms appears grounded in their belief that any effort to estimate this premium should fail *Daubert*'s reliability requirements.[56]

The valuation technique that they critique is known as the "build-up method,"[57] and it is quite different than valuation methods commonly taught to business students. For example, while the CAPM instructs the analyst to estimate the firm's beta to find the market risk-premium appropriate for the investment, an expert applying the build-up method may simply use the average premium for all stocks.[58] Perhaps one can defend this simplified approach as a rule of thumb to be used when one can't find the parameters necessary to employ more sophisticated methods. If one has no reliable method of estimating a firm's beta, it may be better to implicitly assume the firm's beta is equal to that of the average firm and thus commands the average market risk-premium. Ayotte & Morrison advocate for their own rule of thumb when they discuss how courts should weigh the various estimates that they receive. Theory suggests that an analyst should weigh estimates by the precision of the estimates, but Ayotte & Morrison argue instead that courts should weigh all estimates equally.[59] Their approach makes sense (at least it saves litigation costs) if there is no reliable way of determining which estimates are more precise and thus deserving of extra weight.

Ayotte & Morrison reserve their main criticism for the discretion that the build-up method grants to the analyst to adjust for company-specific risk. As noted in Section I, theory does provide some methods (including the CAPM) for estimating the size of the company-specific risk premium, but in many cases the analyst will lack the information necessary to apply these approaches. If the firm isn't publicly traded, the analyst won't be able to measure the standard deviation of the firm's returns, and the analyst may not know the other holdings of the concentrated investor. Courts could demand that the analyst employ a

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Maretno Harjoto, *The Discount for Lack of Marketability in Privately Owned Companies; A Multiples Approach*, 5 J. BUS. VALUATION & ECON. LOSS ANALYSIS, 2010, no. 1, at 1, 12 (estimating discounts of 50% or 75%, depending on the multiple used).

[54] *See* Ayotte & Morrison, *supra* note 1, at 1834-35 ("[Adjustments for firm-specific risk] might be justified on grounds that shareholders cannot diversify (as in a small owner-managed company) . . . .").

[55] *See id.* at 1842.

[56] *See* Ayotte & Morrison, *supra* note 1, at 1841 ("[W]e believe that [company-specific premia] fail the *Daubert* standard of reliability.")

[57] *Id.* at 1828.

[58] *Id*.

[59] *Id.* at 1842-43.

rule of thumb based on average results. For example, when valuing the equity of closely held firms, one could add a company-specific risk premium equal to the estimated difference between the return on publicly traded and privately held firms, estimated by Kartashova at about 7.3%.[60] Ayotte & Morrison's call to consistently use the CAPM is effectively a call for a different rule of thumb, one that always sets the company-specific risk premium at zero.

Ayotte & Morrison's approach has precedent. For example, if a breach prevents an entrepreneur from opening a business, she will be unable to recover lost profits that she cannot prove with reasonable certainty.[61] However, courts are more likely to award injunctive relief for a breach of contract when an inability to prove damages with reasonable certainty renders damages inadequate.[62] In other words, courts applying contract law consider the difficulty of proof when deciding whether to substitute their valuation of a promise for the promisee's valuation.[63]

Bankruptcy courts should take a similar approach. In some valuation disputes the court is asked to use its own valuation instead of that of the entitlement holder or that of the market. Consider this example. Early in a case a secured creditor with a blanket lien on the assets of a small firm moves for relief from the automatic stay by arguing that it lacks adequate protection.[64] The debtor may appeal to the judge by arguing that the assets can be sold for more than the value of the secured creditor's claim so that its position is not at risk, but the debtor could have instead appealed to the market by finding a new lender willing to lend against the collateral and used the proceeds to repay the first creditor. Market imperfections may prevent the debtor from appealing to the market and thereby justify judicial valuation. However, Ayotte & Morrison's evidence about the nature of expert testimony should give courts pause before assuming that they outperform the market.[65] Moreover, courts should be especially skeptical of judicial valuation when investors have taken substantial concentrated positions because the impact of company-specific risk is difficult to measure. Simply ignoring company-

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[60] Kartashova, *supra* note 13, at 3313; *see supra* note 44 and the accompanying text (discussing the difference in return on publicly traded and privately held firms).

[61] RESTATEMENT (SECOND) CONTRACTS § 352 (AM. L. INST. 1981).

[62] *Id.* at §§ 359, 360; *see also* § 360, illus. 3. ("[I]t would be difficult to prove his expected profits with reasonable certainty . . . . Specific performance may properly be granted."). Uncertainty can also justify the enforcement of liquidated damages. *Id.* § 356.

[63] *See* Athene Life & Annuity Co. v. Am. Gen. Life Ins., No. 2018-0244-SG, 2019 WL 3451376, at *5 & n.48 (Del. Ch. July 31, 2019) (explaining that "damages may be inadequate to provide complete relief and their award, if possible, may accompany necessary equitable relief," because "damages may be, for example, impossible to measure").

[64] *See* 11 U.S.C. § 362(d)(1) (2018) (allowing the court to grant relief from the stay "for cause, including the lack of adequate protection of an interest in property of such party in interest").

[65] *See* Ayotte & Morrison, *supra* note 1, at 1832 ("[W]e see huge variation in asset valuations.").

specific risk premia because they can't be easily quantified may put the burden of proof on the wrong party.

Whether courts should apply a company-specific risk premium depends on the precise legal question asked. For example, creditors who raise fair and equitable challenges to reorganization plans are arguing that the consideration they received does not pay them in full.[66] To the extent that these creditors or their stakeholders can diversify their investments,[67] the concentrated ownership of holders of other claims or interests doesn't matter.

Fraudulent transfer actions present a different context, and here Ayotte & Morrison are very willing to trust the market: "[A] court may be able to *rule out* the possibility that the firm was insolvent by asking whether well-informed market actors—especially unsecured creditors and equity holders—treated the firm as if it were solvent at the time of the potentially voidable transfer."[68] Fraudulent transfer law dates back to the sixteenth century, and it originally required a showing of an actual intent to hinder, delay or defraud creditors.[69] However, courts and legislators later created an action for constructive fraud—making a transfer for less than reasonably equivalent value while the debtor is financially fragile.[70] Insolvency satisfies the financial fragility requirement, but there are alternatives.[71] Creditors can instead show either that the debtor expected to incur debts beyond its ability to pay as they matured or that the debtor had unreasonably small capital.[72]

Scholars argue that fraudulent transfer law limits the ability of the debtor to impose unreasonable risks upon creditors or, similarly, that it imposes the limits that the debtor and creditor would have agreed to if they had all bargained in advance.[73] Investors who cannot diversify find company-specific risk more costly; this lesson can be applied to creditors as well as equity holders. A risk that is not unreasonable to impose on a well-diversified creditor may be unreasonable to force upon a non-diversified creditor, and non-diversified creditors would bargain for much tighter restrictions on the ability of a debtor to increase risk. The foregoing suggests that a debtor able to raise capital from well-diversified creditors could still have unreasonably small capital if a substantial share of its debt is held by creditors who are not

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[66] *See* 11 U.S.C § 1129(b) (describing the requirements for a "fair and equitable" reorganization plan).

[67] As noted above, however, there is some evidence that the stakeholders in venture capital funds do not fully diversify and demand company-specific risk premia. *See supra* note 4136 and the accompanying text. Perhaps some creditors will demand company-specific risk premia because they also have important stakeholders who are not fully diversified.

[68] Ayotte & Morrison, *supra* note 1, at 1843.

[69] *See* Baird & Jackson, *supra* note 19, at 829.

[70] *Id.* at 830-31.

[71] 11 U.S.C. § 548(a)(1)(B)(ii).

[72] *See id.*; UNIF. VOIDABLE TRANSACTIONS ACT §§ 4, 5 (UNIF. LAW COMM'N 2014).

[73] Baird & Jackson, *supra* note 19, at 835-36; Zaretsky, *supra* note 20, at 1173-74.

well-diversified.[74] Examples of such creditors include tort claimants, retirees, and small trade creditors. These creditors have little ability to use diversification to protect themselves against firm-specific risk and thus have a greater need for fraudulent transfer law to provide protection for them.

CONCLUSION

Valuation lies at the heart of bankruptcy, but Ayotte & Morrison show that courts find valuation extremely challenging. As a result, they would have courts simplify the valuation process by avoiding discounted cash flow analysis in favor of simpler valuation methods,[75] and where this is not possible, assuming well-diversified investors and applying the CAPM.[76]

One could instead react to their evidence by arguing that courts should consider the uncertainty in their own valuation before substituting their judgment for that of the market. However, Ayotte & Morrison's call to consistently apply the CAPM and ignore the effects of company-specific risk will cause courts to systematically overvalue some assets. Given that junior parties can frequently appeal to the market for a second opinion, they may be better served making the opposite mistake and undervaluing assets.

In the context of avoidance actions Ayotte & Morrison would have courts deny relief in cases where the debtor was able to raise money in public markets because this suggests that the firm was solvent.[77] However, fraudulent transfer actions do not require a showing of insolvency; it is enough to show that the debtor had unreasonably small capital.[78] If a debtor owes a significant amount to undiversified claimants such as retirees or tort victims, its ability to raise money from well-diversified investors should not conclusively show that it had sufficient capital.

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[74] A lack of diversification is only relevant if there is a material risk of default. If the pricing of the debt is near that of treasury bills, there is no need for a company-specific risk premium.

[75] *See* Ayotte & Morrison, *supra* note 1, at 1822 ("[Discounted cash flow] may be best used as a last resort when more transparent approaches (surrounding market evidence, comparable transactions, or comparable company multiples) are unreliable . . . .").

[76] *Id.* at 1842.

[77] *See id.* at 1843 ("In this setting, a court may be able to rule out the possibility that the firm was insolvent by asking whether well-informed market actors—especially unsecured creditors and equity holders—treated the firm as if it were solvent at the time of the potentially voidable transfer.").

[78] *See supra* note 72 and accompanying text.