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Abstract

The traditional law and finance focus on agency costs presumes, without acknowledgement, that the premise that diversified public shareholders are the cheapest riskbearers is immutable. In this Essay, we raise the possibility that changes in the capital markets have called this premise into question, drawn into sharp relief by the recent private equity buying wave in which the size and range of public companies being taken private expanded significantly. In brief, we argue that private owners, in increasingly complete markets, can transfer risk in discrete slices to counterparties who, in turn, can manage or otherwise diversify away those risks they choose to forego, arguably becoming a lower cost substitute for traditional risk capital.

If diversified shareholders are no longer the cheapest risk-bearers, then the associated agency costs may now be voluntary; and, if risk management can substitute for risk capital, without requiring a transfer of ownership, then why go public at all? Do more complete capital markets herald (once again) the eclipse of the public corporation? We offer some preliminary responses, suggesting that the line between public and private firms may begin to blur as the traditional balance between agency costs and the benefits of public ownership shifts towards a new equilibrium. For some, the benefits of public ownership may continue to outweigh the associated agency costs. For others, changes in risk transfer may implicate how a firm is (or should be) governed. The Essay then ends with a final question: If the opportunity to invest in common stock recedes, by what means will former investors in public equity be able to invest capital?

Keywords: agency costs, capital markets, corporate governance, derivatives, LBO, private equity, risk, risk management

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DECONSTRUCTING EQUITY: PUBLIC OWNERSHIP, AGENCY COSTS, AND COMPLETE CAPITAL MARKETS

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Public shareholders and agency costs are two sides of the same coin. If companies need residual risk capital, and if public investors who can diversify their shareholdings are the cheapest risk-bearers,[1] then we get agency costs.[2] The capital provided by these cheap risk-bearers necessarily is managed by someone else, whose interests are not perfectly aligned with those of investors, a divergence famously framed by Adolph Berle and Gardiner Means a little over 75 years ago.[3] As a result, modern

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[1] See, e.g., Eugene F. Fama & Michael C. Jensen, Agency Problems and Residual Claims, 26 J.L. & Econ. 327, 329 (1983) ("Common stock allows residual risk to be spread across many residual claimants who individually choose the extent to which they bear risk and who can diversify across organizations offering such claims."). The literature on the reduction of risk through diversification is vast, and resulted in the award of a Nobel Prize in Economic Sciences to Harry Markovitz, whose work served as a foundation for that of Merton Miller and William Sharpe who shared the 1990 prize with Markovitz. There is no need here, for our purposes, to track this familiar development beyond the simple recognition that by holding a relatively small number of stocks an investor can substantially reduce the impact of unsystematic risk on the value of her portfolio. See Richard A. Brealey, Stewart C. Myers & Franklin Allen, Principles of Corporate Finance 160--62 (8th ed. 2006).

[2] See Eugene F. Fama & Michael C. Jensen, Separation of Ownership and Control, 26 J.L. & Econ. 301, 304 (1983) (defining agency costs as the "costs of structuring, monitoring, and bonding a set of contracts among agents with conflicting interests").

[3] Adolph A. Berle, Jr. & Gardiner C. Means, The Modern Corporation and Private Property 119--25 (1932).

corporate governance scholarship has focused for at least the last 30 years on finding a means to bridge the agency gap between diversified risk-bearers and managers.[4] Proxy fights, hostile takeovers, independent directors, institutional investors and, most recently, hedge funds and activist shareholders have all held the mantle of favored agency-cost-reducer at one time or another.

The traditional law and finance focus on agency costs presumes, without acknowledgment, that the agency cost framework's bedrock premise---that diversified shareholders are the cheapest risk-bearers---is immutable.[5] In this Essay, we confront the possibility that the continued development of increasingly complete capital markets, in which working capital can be separated from risk capital,[6] and discrete slices of risk can be separately transferred, pooled, and shared among market participants, has called the premise into question.[7] From this perspective, the traditional need for residual shareholders, whose risk exposure spanned the marketplace, reflected the absence of low cost means to transfer, and market participants who could be paid to bear, only a portion of that risk. In complete capital markets, private owners can purchase risk-bearing and liquidity in discrete slices. And if risk management and liquidity are available by the slice---if, for example, the owners of a private company can separate and transfer the risk

[4] We mark this period as beginning with Jensen and Meckling's seminal 1976 article. Michael Jensen & William Meckling, Theory of the Firm: Managerial Behavior, Agency Costs and Capital Structure, 3 J. Fin. Econ. 305 (1976).

[5] Jensen and Meckling left open the possibility of a change in the trade-offs between agency costs and gains resulting from new equity investment. See infra notes 55--56 and accompanying text. However, this qualification was largely ignored in the literature that followed.

[6] Robert C. Merton, Financial Innovation and Economic Performance, 4 J. Applied Corp. Fin. 12, 12 (1992) (noting that working capital, used to finance firm projects, can now be separated from risk capital that bears the risks of those projects).

[7] The theoretical framework for the implications of complete capital markets are set out in Kenneth J. Arrow, Essays in the Theory of Risk-Bearing 121--43 (3d ed. 1976); Kenneth J. Arrow & Gerard Debreu, Existence of an Equilibrium for a Competitive Economy, 22 Econometrica 265, 265--66 (1954); and Kenneth J. Arrow, The Role of Securities in the Optimal Allocation of Risk Bearing, 31 Rev. Econ. Stud. 91, 91--95 (1964).

of commodity prices, or catastrophic acts of nature, or even a business cycle, rather than transferring bundled risk through the issuance of common stock---then much of what has comprised the corporate governance debate may require reexamination.

We write at a remarkable moment in the history of the capital markets. Over the last few years, there has been a large movement of public companies into private ownership through leveraged acquisitions by private equity firms.[8] This recalls, of course, Michael Jensen's then premature announcement in the late 1980s, in the face of an earlier private equity wave, of the "eclipse of the public corporation" by a more efficient organization form---the leveraged buyout ("LBO") association.[9] At that time, Albert Rappaport argued that the concept of the LBO was self-limiting, and in particular, that most public firms failed to meet the criteria necessary to go private---strong and predictable cash flows, readily saleable assets or businesses, strong market positions or brands, status as a low-cost producer, and limited sensitivity to cyclical swings.[10] Now, some 18 years after the Jensen-Rappaport debate, as the size and range of public

[8] Private equity firms and management announced over $700 billion in transactions in 2006, raising over $400 billion in new investments during the same period. New investments in 2007 are projected to top $500 billion. Miles Weiss & Brett Cole, Silver Lake to Raise $10 Billion for Technology Fund, Bloomberg.com, Feb. 6, 2007, http://www.bloomberg.com/apps/news?pid=20601087&sid=aVVXqOCw9pOw&refer=home. In the United States alone, private equity firms in 2006 bought 654 companies for a total of $375 billion, 18 times the level of acquisitions in 2003. Robert J. Samuelson, The Private Equity Boom, Washingtonpost.com, Mar. 15, 2007, http://www.washingtonpost.com/wp-dyn/content/article/2007/03/14/AR2007031402177_pf.html. Many of these companies remain private. The number of privately held U.S. businesses with at least $1 billion in revenues increased by over 11 percent, from 305 to 339 companies, between 2004 and 2005, and by over 16 percent, to 394 companies, between 2005 and 2006. Shlomo Reifman & Samantha N. Wong, Who Needs Sarbox?, Forbes.com, Nov. 28, 2005, http://www.forbes.com/freeforbes/2005/1128/212.html; Shlomo Reifman & Samantha N. Wong, America's Largest Private Companies, Forbes.com, Nov. 9, 2006, http://www.forbes.com/2006/11/09/largest-private-companiesbiz_06privates_cz_sr_1109privatesintro.html.

[9] Michael C. Jensen, Eclipse of the Public Corporation (originally appearing in Harv. Bus. Rev., Sept.--Oct. 1989, at 61, revised 1997), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id =146149.

[10] Alfred Rappaport, The Staying Power of the Public Corporation, Harv. Bus. Rev., Jan.--Feb. 1990, at 96.

companies being taken private has expanded dramatically,[11] the capital market phenomena that concern us here again raise questions regarding the future of the public corporation and corporate governance in stark terms. Those questions arise notwithstanding the turmoil in the debt market, which appeared during the summer of 2007,[12] raising concerns over the capacity of private equity buyers to finance current as well as future private equity deals.[13] We do not mean to downplay the extent of the uncertainty in the debt market or the ability of buyers and lenders to use events to renegotiate the terms of pending transactions.[14] Our timeframe here, however, is much longer than the recent private equity wave or the credit market uncertainty that is slowing it down. Our goal is to highlight what we argue is a secular trend, driven by economic forces that will survive current perturbations.

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[11] See Int'l Monetary Fund, Global Financial Stability Report 12 (Apr. 2007) (noting that deal sizes in the recent private equity wave are bigger than the LBO wave of the 1980s, and "few firms are now thought to be too large to be the target of a takeover"); Adrian Blundell-Wignall, The Private Equity Boom: Causes and Policy Issues, *in* Organisation for Economic Cooperation and Development, Financial Market Trends, May 2007, at 10, 22 (observing that LBOs traditionally favored industries with stable cash flows, but that current deals "are spreading to industries such as airlines that are inherently more cyclical and exposed to risk factors"); Thomas Boulton, Kenneth Lehn & Steven Segal, The Rise of the U.S. Private Equity Market, *in* Brookings-Nomura Papers on Financial Instruments and Institutions 5-1, 5-2 (Yasuki Fuchita & Robert E. Litan eds., 2007) (finding that the number and market value of companies going private, and the industry distribution of those companies, has increased over time). See also infra notes 102--104 and accompanying text.

[12] In late June 2007, concerns arose that uncertain conditions in the market for collaterized debt obligations ("CDO") of subprime mortgage debt could spread to the CDO market for corporate debt that funds going private transactions, resulting in increased interest rates that would slow the phenomena we discuss in the text. Saskia Scholtes & Gillian Tett, Does it All Add Up?, Fin. Times (London), June 28, 2007, at 7. Conditions worsened as the summer progressed, as uncertainty concerning the extent of the sub-prime lending problem and its relation to the other segments of the credit market resulted in reduced liquidity generally, leading a number of central banks to inject funds into the market to increase liquidity. See, e,g., Norma Cohen et al., Central Banks Seek to Unblock Markets, Fin. Times (New York), Aug. 13, 2007, at 1 (describing central bank efforts to intervene in the global money markets).

[13] See, e.g., Henny Sender, Leveraged Buyout Remorse? Costs Throw Deals in Doubt, Wall St. J., Aug. 10, 2007, at C1 (describing how private equity buyers were seeking to back out of pending LBO transactions due to increased financing costs); Francesco Guerrera & James Politi, Not Dancing Anymore: How the Music Stopped for Buy-out Buccaneers, Fin. Times (London), Aug. 14, 2007, at 9 (describing the potential impact on private equity firms of increased financing costs).

[14] See, e.g., Francesco Guerrera & James Politi, Home Depot to Cut Sale Terms, Fin. Times (London), Aug. 10, 2007, at 15 (describing "the first time since the start of the private equity boom three years ago" that a U.S. private equity firm sought to renegotiate deal terms); Guerrera & Politi, supra note 13, at 9 (noting the decision to postpone the sale of Cadbury Schweppes' U.S. drinks business).

Our argument proceeds along the following lines. First, we review changes in the capital markets that have led to new risk management techniques and instruments, including sophisticated derivatives and insurance contracts, which enable firms and private owners to transfer risk in discrete slices as opposed to a broad transfer of risk to purchasers of common stock.[15] Risk counterparties can, in turn, diversify or transfer risks they choose to forego, arguably becoming a lower cost substitute for the broad spectrum of risk-bearing traditionally assumed by public shareholders (which we sometimes refer to as "broadband" risk).

Second, we suggest a number of ways in which focused risk management at the firm level may be more efficient than broadband risk-bearing by diversified shareholders. The potential to increase firm value may fuel the "self-interested maximizing behavior" of managers that Jensen and Meckling view as the engine for developing new and increasingly efficient means to manage and transfer risk.[16] Advances in risk management may, consequently, result in decreased demand for broadband risk-bearing---in our terms, a deconstruction of equity.

Finally, we build on Myron Scholes's work and argue that if risk management can begin to substitute for equity, with firms relying instead on debt to fund working capital, then the traditional model's reliance on public equity, and the corresponding agency costs, may increasingly become optional.[17] We then again confront the possibility (using

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[15] As Myron Scholes has described, "Equity is a risk-management device. It is an 'all-purpose' risk cushion." Myron S. Scholes, Derivatives in a Dynamic Environment, 88 Am. Econ. Rev. 350, 366 (1998) [hereinafter Scholes, Derivatives].

[16] Jensen & Meckling, supra note 4, at 356.

[17] Myron Scholes first raised this possibility in 1995, positing that firms would substitute less costly derivative instruments for equity capital, increasing their reliance on internal funds and debt financing. Firms could, as a result, consider the relative advantages and disadvantages of relying on public equity in deciding whether or not to incur the incremental costs of going public. See Myron S. Scholes, The Future

Michael Jensen's evocative phrase) of the eclipse of the public corporation, but with an important difference: More complete capital markets may now make the governance structure anticipated by Jensen available to (and sustainable by) a much wider range of companies. As noted earlier, we are not unmindful that the speed by which this broader availability is taken up will depend in the short- and medium-term on conditions in the capital markets, including the availability and cost of debt. Our point is not to predict the precise shape of the take-up curve, but rather its trend line uncomplicated by the effect of short-term conditions.[18]

If we are entering an era when risk can be transferred by the slice without a corresponding transfer of ownership, then private corporation owners may begin to ask, "Why go public at all?" The real benefits of broad, public ownership may, on balance, still argue in favor of going (or remaining) public.[19] Nevertheless, as firms increasingly transfer risk to the marketplace in slices, equity will become subject to greater unsystematic (and less systematic) risk consistent with primary ownership by management, over time resulting in the elimination of the Berle and Means separation.[20] Common stock then becomes, in effect, an incentive contract that aligns the interests of owner-managers and the corporation. The result, we predict, is that public ownership will continue to be meaningful for many firms, but that the traditional balance between agency costs and the benefits of raising equity from diversified investors may begin to shift. A new equilibrium may emerge as firms assess their ability to manage risk relative

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of Futures, *in* Risk Management Problems & Solutions 349, 362--65 (William H. Beaver & George Parker eds., 1995) [hereinafter Scholes, Futures]; Scholes, Derivatives, supra note 15, at 364--68.

[18] See supra notes 12--14 and accompanying text.

[19] See infra notes 116--126 and accompanying text.

[20] For a useful summary of the relationship between systematic and unsystematic risk, and between risk and ownership, see Brealey, Myers & Allen, supra note 1, at 160--63.

to the marketplace, retaining those risks where they are at a competitive advantage and transferring the rest.[21]

We are not alone in recognizing that the rapid evolution of the capital markets has important implications for our corporate governance institutions. Jeffrey Gordon has described how increasing market completeness over the last 50 years has improved the informational content of share prices and thereby made feasible a governance structure characterized by independent directors whose role is to monitor, rather than to advise, managers.[22] Others have identified the role of increasingly complete capital markets in permitting shareholders to decouple economic ownership from voting rights, challenging a central precept of the public corporation that assigns voting rights to common shareholders because they bear residual risk.[23] This decoupling takes place in the secondary markets, through stock lending, equity swaps, derivatives, and other trading strategies, where investors can synthetically unbundle voting and ownership without action by the corporation.[24] However, to the extent that increasingly complete capital markets may alter a principal characteristic of equity itself, a more organic change may be taking place.[25]

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[21] See infra text accompanying notes 127 and 140.

[22] Jeffrey N. Gordon, Independent Directors and Stock Market Prices: The New Corporate Governance Paradigm 70-90 (European Corp. Governance Inst., Working Paper No. 74/2006, 2006), available at http://ssrn.com/abstract= 928100.

[23] See Henry T.C. Hu & Bernard S. Black, The New Vote Buying: Empty Voting and Hidden (Morphable) Ownership, 79 S. Cal. L. Rev. 811, 823, 828--35 (2006); Frank Partnoy, Financial Innovation in Corporate Law, 31 J. Corp. L. 799, 809--11 (2006); Marcel Kahan & Edward B. Rock, Hedge Funds in Corporate Governance and Corporate Control 37--42 (Univ. Pa. Inst. for Law & Econ. Research, Paper No. 06-16, 2006), available at http://ssrn.com/abstract=919881.

[24] Hu & Black, supra note 23, at 828--35.

[25] Larry Ribstein has usefully catalogued the organizational characteristics that have developed to support this change. Larry Ribstein, The Rise of the Uncorporation 7--45 (Illinois Law & Econ. Research Paper Series, Paper No. LE07-026, 2007). While our focus in the text is on the separation of ownership and management within the traditional Berle and Means construct of diversified public shareholdings, the phenomenon of more complete capital markets and the resulting deconstruction of equity is equally applicable to markets characterized by controlling shareholders. See Ronald J. Gilson, Corporate

To ground some of our speculations, we offer the example of Agricore United ("AU"), a publicly traded corporation listed on the Toronto Stock Exchange since 1993, as evidence of the kind of risk management that is possible. The potential impact of increasingly complete capital markets on corporate governance and ownership structure is driven by these possibilities.

AU provides handling and delivery services to the grain farmers of western Canada. Historically, its main source of unmanaged risk was related to weather---grain crops in western Canada are affected by regional temperature and precipitation during June and July, in turn affecting seasonal yields, the amount of grain transported through AU, and ultimately, AU's profitability.[26] Weather variation, in fact, resulted in wide and unpredictable swings in AU's annual profits,[27] forcing AU to borrow funds in order to make needed capital investments and to rely on equity capital as a cushion against unexpected drops in revenue.[28]

AU decided to remove the direct effects of weather on its profits by transferring its weather exposure outside the firm. It did so by entering into an insurance contract with Swiss Re, the world's largest reinsurer and a leading expert in capital and risk

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Governance and Controlling Shareholders: Complicating the Comparative Taxonomy, 116 Harv. L. Rev. 1641, 1645--73 (2006) (describing national capital markets dominated by public companies with controlling shareholders). Controlling shareholders who seek outside equity will still select the most efficient risk-bearer when the company goes public---diversified (minority) shareholders, unless more complete capital markets offer a more efficient alternative. As in corporations with widely distributed shareholdings, agency costs are the other side of the traditional risk-bearing coin, although in controlling shareholder systems it appears as private benefits of control. Id. at 1652--61.

[26] Scott Harrington & Greg Niehaus, United Grain Growers: Enterprise Risk Management and Weather Risk, 6 Risk Mgmt. & Ins. Rev. 193, 200--04 (2003) (case study using AU's experience to illustrate enterprise risk management). AU's predecessor was United Grain Growers Ltd.

[27] Russ Banham, Whatever the Weather, CFO Magazine, June 1, 2000, at 117 (describing volatility of up to about 20 percent of AU's revenues).

[28] Harrington & Niehaus, supra note 26, at 204--05.

management.[29] Under the terms of that contract, Swiss Re agreed to pay AU whenever actual industry-wide grain production fell below average volumes over the prior five years (subject to limits and deductibles).[30] The resulting insurance solution was both over- and under-inclusive: Over-inclusive, because it extended coverage to any reduction in grain volumes, not simply shortfalls resulting from weather, and could result in payments that were greater than AU's actual losses;[31] and under-inclusive, because actual losses might exceed payments received under the policy (collectively referred to as "basis risk").[32] The policy, however, had a direct impact on AU's capital structure---allowing it to increase its debt financing levels, separate a portion of its working capital needs from its risk capital, substitute its new insurance for existing equity, and lower its overall cost of capital.[33]

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[29] The array of weather derivatives has continued to expand and, in addition to customized over-the-counter contracts, weather-related risk can now be transferred through a more liquid auction market. See infra notes 73--75 and accompanying text.

[30] The dollar amount of the payment was based on the difference between the five-year average and actual industry grain volumes for the year, multiplied by a percentage reflecting AU's market share and its average profit margin per ton of grain handled. Harrington & Niehaus, supra note 26, at 212--13. AU was also able to integrate various other coverages (for example, property and tort liability exposure) under the same insurance policy, replacing individual deductibles and limits with aggregate levels that allowed it to combine its weather exposure with AU's other risks and so reduce its aggregate cost of insurance. Id. at 207, 213--16.

[31] There were accounting limits on the extent to which payments could exceed actual losses if the insurance contract was to qualify for "hedge accounting." Hedge accounting permits the hedge and the hedged asset to be marked to market, so that losses incurred by AU would be offset by gains on its insurance contract. To qualify, however, there must be a close correlation between the insurance contract and any losses incurred on AU's handling and delivery business. See David M. Schizer, Frictions as a Constraint on Tax Planning, 101 Colum. L. Rev. 1312, 1358--59 (2001). The cost and complexity of those standards has prompted their reconsideration, potentially making hedge accounting available to a broader group of companies. See David Reilly, FASB Weighs Simplifying Complex Accounting Rule, Wall St. J., May 10, 2007, at C2.

[32] Insurance typically exposes a firm to limited basis risk due to the direct relationship between the loss incurred and the payment made by the insurer. Yet, a contract based on AU's actual grain volumes would have exposed Swiss Re to moral hazard risk factors other than weather, such as AU's decisions on pricing and service, might also influence throughput volumes. If the resulting losses were borne by Swiss Re, then AU's managers would have strong incentives to adjust their business strategy to maximize returns to AU, potentially at Swiss Re's expense.

[33] "'At the end of our fiscal year, July 31, 1999, our leverage ratio was 50 percent,' [AU Chief Financial Officer Peter Cox] says. 'The minute we did this deal, we were able to raise that debt level to 52.5 percent [equivalent to an increase of approximately $25 million in capital] without incurring additional

As AU's experience illustrates, in today's capital markets, the more a firm is able to identify and hedge its risk exposure, the less equity it may need to support its operations.[34] The ability to identify and transfer risk outside the firm means that firms no longer must rely on equity capital as a catch-all for residual risk,[35] and so the associated agency costs of equity become increasingly optional. Derivatives, sophisticated insurance contracts, and other risk transfer instruments can begin to substitute for equity's traditional risk-bearing function,[36] with the result that a firm's decisions on risk management must increasingly become part of its decisions on capital.[37]

In Part I we set the stage by developing the link between incomplete capital markets and the traditional role of equity as a broadband risk-bearer---from Berle and Means to Jensen and Meckling. Part II traces the development of markets for discrete risk transfer---by the slice---and the potential for risk management at the corporate level to increase firm value. Part III presents the core of our argument: More complete capital markets provide the potential to reduce equity to an incentive contract, and thereby resurrect the alternative of remaining private. We then explore the recent private equity wave: Do more complete capital markets mean that the predicted eclipse of the public

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risk to the company, because the capital we previously set aside to cover volume-based losses was replaced by insurance.'" Banham, supra note 27, at 120. The Swiss Re contract was subsequently renewed, most recently through October 31, 2009, at reduced coverage levels, in part reflecting the challenges to an insurer of managing weather-related risk exposure. John Conley, End Analysis: An Integrated Program Revisited, Risk Mgmt., Dec. 2002, at 48, 48. See also Outsourcing Capital, The Economist, Nov. 27, 1999, at 76 (noting the relatively higher cost of risk capital allocated by AU against unhedged earnings).

[34] Christopher L. Culp, The Revolution in Corporate Risk Management: A Decade in Innovations in Process and Products, 14 J. Applied Corp. Fin. 8, 15 (2002).

[35] Scholes, Derivatives, supra note 15, at 366.

[36] René Stulz, Rethinking Risk Management, 9 J. Applied Corp. Fin. 8, 16 (1996).

[37] See Prakash Shimpi, Integrating Risk Management and Capital Management, 14 J. Applied Corp. Fin. 27, 27 (2002) (describing the relationship between capital and risk management); Merton, supra note 6, at 19; Christopher L. Culp, Contingent Capital: Integrating Corporate Financing and Risk Management Decisions, 15 J. Applied Corp. Fin. 46, 49--55 (2002) (describing different contingent capital facilities available to a firm). In fact, both capital and risk management decisions are often managed by the same person, the treasurer. See Robert Cooper, Corporate Treasury and Cash Management 10 (2004); Christopher L. Culp, Structured Finance and Insurance 17 (2006).

corporation has finally caught up with us? Our prediction is that going public will continue to be meaningful for many firms, but that the equilibrium between agency costs and the benefits of public ownership may begin to shift in the direction of private ownership. Part IV concludes by identifying the part of the story we do not address: By what means will former investors in public equity be able to invest capital as the opportunity to invest in traditional broadband risk-bearing instruments recedes?

I. INCOMPLETE CAPITAL MARKETS AND THE TRADITIONAL ROLE OF EQUITY

Our analysis builds on the observation that a basic premise of the traditional model of the corporation---that diversified investors holding common stock are the cheapest risk-bearers, resulting in the separation of ownership and management---is being called into question by advances in risk management and increasingly complete capital markets. We argue that these changes warrant a reconsideration of the role of common stock in corporate governance and the agency cost framework that results from diversified shareholders as residual risk-bearers.

A little over 75 years ago, Berle and Means identified the growing independence of management in the public corporation. That independence arose from the separation of ownership and control as widely dispersed public shareholders effectively became passive providers of equity capital with little or no control over corporate managers.[38] A key to that thesis was the relationship between corporate structure and the public capital markets,[39] no doubt triggered by their growth[40] over two extended bull markets during

[38] Berle & Means, supra note 3, at 5--9, 277--81.
[39] Id. at 5--6, 289--99.
[40] Id. at 5, 47--68.

the 30 years leading up to the Great Depression.[41] As usually presented, the separation of ownership and control is the natural outcome of the specialization needed for the corporate form to respond to increases in efficient scale and scope that resulted from the development of a continent-wide market.[42] Public shareholders, with the ability to diversify away unsystematic risk, could specialize in risk-bearing; and professional managers, necessary to run organizations of the new scale and scope, could specialize in management.

This focus on shareholders as broadband risk-bearers resulted in part from the dearth of alternative risk-bearing instruments. The capital markets of the 1930s were relatively incomplete, with few financial instruments available to firms or investors beyond stocks, bonds, and bank loans.[43] Insurance was limited to traditional fire and casualty coverage.[44] It would be another 40 years before a new wave of risk transfer

[41] Robert Sobel, The Big Board 206--61 (1966); Gene Smiley, The Expansion of the New York Securities Market at the Turn of the Century, 55 Bus. Hist. Rev. 75, 75--77 (1981).

[42] See Alfred D. Chandler, Jr., The Visible Hand 484--500 (1977) (describing the growth of professional managers in U.S. corporations); Alfred D. Chandler, Jr., Scale and Scope 51--89 (1990) (explaining how changes in markets and technology underlie growth of corporate managerial hierarchies).

[43] See Adolf A. Berle, Jr., Studies in the Law of Corporation Finance 27 (1928) (noting that the markets were broadly divided into one of two categories: stocks or bonds). Famed New York financier Russell Sage is credited with introducing puts and calls to the U.S. markets in the mid-1800s, although his intention appears to have been to facilitate speculative trading on limited capital and to circumvent the New York usury laws. Robert Warshow, The Story of Wall Street 196--97 (1929); Stephen Ross, Randolph Westerfield & Jeffery Jaffe, Corporate Finance 554 (1999). For most, the financial markets were comprised of only the capital and loan markets, principally made up of stocks, bonds, other traditional securities, and loans. See, e.g., Smiley, supra note 41, at 80 (showing categories of earning assets held by U.S. financial institutions from 1890 to 1908); Franklin Allen & Anthony M. Santomero, The Theory of Financial Intermediation, 21 J. Banking & Fin. 1461, 1466--67 (1996) (noting that, by the 1930s, "traditional financial instruments" had been developed). At the time, those markets generally did not extend to derivative instruments, in large part due to uncertainty over whether they constituted illegal gaming contracts. See Edward J. Swan, Building The Global Market: A 4000 Year History of Derivatives 251--54 (2000). Commodities were a notable exception. The Chicago Board of Trade was established in 1848 and focused exclusively on commodities contracts until the mid-1970s. The predecessor to the Chicago Mercantile Exchange was established in 1898 to trade spot and futures contracts on eggs and dairy, later expanding to include live cattle, feeder cattle, and pork bellies, and principally remaining an agricultural marketplace until the early 1970s. Erik Banks, Exchange-Traded Derivatives 119, 129 (2003).

[44] See Culp, supra note 37, at 137--50 (describing terms of traditional insurance policies).

instruments would be introduced,[45] and 20 more years after that before the new risk management of the 1990s began to fundamentally change how firms manage and transfer risk.[46] Consequently, while the Berle and Means framework recognized a basic relationship between corporate structure and the capital markets, it was premised on the underdeveloped markets of the period---presuming, as a result, that a firm's shareholders would bear most of the residual economic risk of managerial decisions.[47]

More recent scholarship has deconstructed the corporation into a "nexus of contracts," rejecting a characterization of the shareholder as "owner" in favor of one in which the corporation is an equilibrium among actors, including shareholders, creditors, and managers, who bargain within a complex set of relationships with the corporate entity at the center.[48] In the contractarian framing, investors rely on the liquidity of the public markets to inexpensively manage risk by diversifying their holdings across a spectrum of firms;[49] and as residual claimants, shareholders bargain for ownership-type benefits, such as voting rights and fiduciary duties, to constrain the resulting agency costs.[50] Diversified risk-bearing at the shareholder level was presumed to be the least

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[45] See infra notes 64--69 and accompanying text.

[46] See infra notes 60--61, 70--76 and accompanying text.

[47] Berle & Means, supra note 3, at 66--68.

[48] See Jensen & Meckling, supra note 4, at 310--11; Melvin A. Eisenberg, The Conception That the Corporation is a Nexus of Contracts, and the Dual Nature of the Firm, 24 J. Corp. L. 819, 820--23 (1999). As one of us put it in 1981, the "description of shareholders as the 'owners' of the corporation does not suggest that [their] role . . . flows, normatively from their 'ownership.' It derives, rather, from the need for those holding the residual interest in corporate profits to have the means to displace management which performs poorly. . . . [T]his position is based on matters other than a preconception of the rights associated with 'ownership'; indeed, if the statute did not provide for shareholders we would have to invent them." Ronald J. Gilson, A Structural Approach to Corporations: The Case Against Defensive Tactics in Tender Offers, 33 Stan. L. Rev. 819, 834 n.56 (1981).

[49] Fama & Jensen, supra note 2, at 302--03.

[50] See Frank H. Easterbrook & Daniel R. Fischel, The Economic Structure of Corporate Law 63--67 (1991); Frank H. Easterbrook & Daniel R. Fischel, Voting in Corporate Law, 26 J.L. & Econ. 395, 401--06 (1983). Michael Klausner has recently argued that emerging empirical evidence suggests that the contractual framework is more Coasian than descriptive, with observed governance arrangements apparently driven by frictions that result in arrangements that differ from what the framework predicts. See Michael

costly means to manage firm risk, even after taking account of those costs.[51] At the same time, while limiting residual claims to a small group of investors might lower agency costs, the contractarian model predicted that doing so would increase the costs of risk-bearing and make concentrated ownership less attractive.[52]

So there we have a snapshot of the capital markets and corporate governance in the mid-1970s, when Jensen and Meckling framed the agency cost perspective on corporate structure and governance. Firms financed by their managers eliminate the drag of agency costs associated with public investment, but sacrifice scale economies and new opportunities because of their own limited capital. For Jensen and Meckling, a firm's scale and scope turned on the trade-off between the gains from expansion and the agency costs of debt and equity, the outcome of which was conditioned on the instruments made available by the capital markets and the existing techniques to constrain the agency costs of outside investment.[53] In the 1970s, this trade-off still dictated the predominance of equity held by diversified shareholders.[54]

To be sure, the contractarian model left open the possibility that the development of more complete capital markets, with new investment vehicles, could change the trade-off between the level of agency costs associated with public investment and gains from

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Klausner, The Contractarian Theory of Corporate Law: A Generation Later, 31 J. Corp. L. 779, 784--97 (2006).

[51] See Eugene F. Fama, Agency Problems and the Theory of the Firm, J. Pol. Econ. 288, 289--91 (1980).

[52] Fama & Jensen, supra note 2, at 307.

[53] See Jensen & Meckling, supra note 4, at 319--23 (setting out a model of the optimal scale of the firm).

[54] This analysis rests on the assumption that agency costs will increase in line with growth in the scale and scope of a corporation's activities, holding other factors constant. For example, the capacity of part-time independent directors to effectively monitor management performance decreases with scale and scope, thereby increasing agency costs. From this perspective, improved monitoring techniques expand a corporation's efficient scale; the development of the junk bond market, for example, increased the scope of firms whose performance could be monitored by the capital markets. Ronald J. Gilson, Catalyzing Corporate Governance: The Evolution of the U.S. System in the 1980s and 1990s, 24 Company & Sec. L.J. 143, 150--51 (2006) (Austl.).

new investment. For example, Jensen and Meckling identified the conversion feature in convertible bonds, a derivative of sorts, as a less costly means to reduce management and shareholder incentives to transfer wealth from bondholders to shareholders (for example, by increasing riskiness) compared to other, more costly means of control, such as ongoing monitoring in support of contractual covenants.[55] They also acknowledged the likelihood that new corporate instruments would appear as the cost-benefit balance of creating and maintaining a market for them changed over time.[56]

In the next Part, we describe important changes since the early 1970s that have begun to erode the traditional model's reliance on public equity---in particular, the creation of new risk management tools and the development of liquid markets to transfer risk. Financial innovation over the last 30 years gave rise to an explosive growth in new instruments to facilitate a private owner's purchase of risk-bearing and liquidity in discrete slices. In short, these are not your father's capital markets.

II. THE RISK REVOLUTION AND CAPITAL STRUCTURE

A. The Rise of Risk Management

For our purposes, "risk management" is a firm-level management discipline that identifies and measures risks that may affect firm value, assists in choosing which risks to retain and which to transfer, and then implements and monitors strategies to execute those decisions.[57] Derivatives are important risk transfer tools, but comprise only one facet of risk management.[58]

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[55] See Jensen & Meckling, supra note 4, at 353--54.

[56] Id. at 356.

[57] See Culp, supra note 34, at 12--13 (describing components of the risk management process, including the decision to transfer or retain risk).

[58] There is a substantial body of literature, which we do not repeat here, that describes and analyzes various kinds of risk management instruments. See, e.g., Robert E. Whaley, Derivatives, *in* Handbook of

Managing risk, of course, is nothing new.[59] For years, business people have managed risk by purchasing insurance, diversifying business lines to reduce cash flow volatility, pursuing projects with greater certainty but lower returns, and restricting leverage. However, *corporate* risk management---which identifies, manages, and transfers risk on a consolidated, entity-wide basis[60]---is a fairly recent development, having only emerged in the last 30 years as businesses have confronted a range of new risks and uncertainties.[61]

Those risks have differed in magnitude (if not always in kind) from the risks faced by prior generations, ranging from a succession of financial system crises, to natural disasters, and even to acts of terrorism. The end of Bretton Woods and the start of the OPEC oil embargo in 1973 for the first time subjected peacetime businesses to new, and

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the Economics of Finance 1131--99 (George M. Constantinides, Milton Harris & René M. Stulz eds., 2003). For many, the term "derivatives" is associated with the financial blow-ups of the 1990s. Managers may speculate with derivatives in an effort to outperform their peers, as opposed to hedging business risks. Scholes, Derivatives, supra note 15, at 366. For this article, we limit our analysis to using risk transfer instruments to hedge, diversify, or transfer firm exposure to risk.

[59] As Peter Bernstein has described, modern risk management is built on a centuries' old history of understanding, measuring, and managing risk, commencing a little over 350 years ago. Peter L. Bernstein, Against the Gods: The Remarkable Story of Risk 3--6, 57--266 (1996). See also Swan, supra note 43, at 27--30 (describing how some basic tools used to transfer risk find their roots in futures contracts that date from four millennia ago).

[60] Corporate-wide risk management is commonly referred to as "enterprise risk management" ("ERM"). For a summary of the processes and challenges of implementing ERM, see Brian W. Nocco & René Stulz, Enterprise Risk Management: Theory and Practice, 18 J. Applied Corp. Fin. 8, 14--20 (2006).

[61] When the risk management function first appeared in the 1920s, it was usually responsible for matching insurance to business hazards (such as fire and casualty), managing costs, and not much more. Over the next 30 years, as policy costs increased, insurance-buying grew to become an important business function, with the corresponding creation of industry groups to coordinate that activity---the Insurance Division of the American Management Association (1931), the Insurance Buyers of New York (later, the Risk Research Institute, 1932), and the National Insurance Buyers Association (later, the Risk and Insurance Management Society, 1950). Risk management began to find its own feet as a new discipline in the early 1970s when The Insurance Institute of America introduced its Associate in Risk Management (ARM) professional degree program. Risk management in most public firms, however, remained largely decentralized. Managing risk on a consolidated, entity-wide basis---where a firm's overall risk portfolio, including operational, strategic, and business risks, is managed centrally---has only emerged in the last ten years. Neil A. Doherty, Integrated Risk Management 10--11 (2000); Paula L. Green, Risk Managers Cover Enterprise Exposure, Global Fin., Jan. 2001, at 72; Culp, supra note 34, at 14--15, 19.

potentially catastrophic, exchange rate and energy cost volatility.[62] Businesses that failed to take those risks into account did so at their peril, often with disastrous consequences.[63] Traditional insurance policies offered little or no protection, and so managers began to search for alternatives to minimize or transfer their new exposures.

The capital markets quickly responded. Financial intermediaries, including banks, broker-dealers, and insurance companies, saw an opportunity to profit from the creation and trading of new financial instruments that responded to client demands to improve risk-sharing.[64] Those instruments pooled and transferred discrete slices of financial risk from corporate counterparties to those (in many instances, the financial intermediaries themselves) who, through diversification or otherwise, were in a better position to manage them.[65] Over time, the growing demand for those instruments resulted in greater liquidity,[66] in turn lowering their cost[67] and expanding the scope of

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[62] Six years later, volatile short-term interest rates were temporarily added to the growing list of new risks, in magnitude if not in kind, that companies began to face. Interest rate volatility arose principally as a result of changes in Federal Reserve operating procedures that were introduced in an effort to improve monetary controls. Timothy Cook, Determinants of the Federal Funds Rate: 1979–1982, 75 Fed. Res. Bank of Richmond Econ. Rev. 3, 3 (1989).

[63] Laker Airlines provides a compelling example with respect to foreign exchange risk. Laker Airlines purchased planes from Boeing in U.S. dollars even though its principal revenues were in British pounds. Over time, a weakening pound increased the cost of its U.S. dollar financing and also resulted in less travel abroad. The resulting currency mismatch forced Laker Airlines to file for bankruptcy in 1982. Charles W. Smithson, Managing Financial Risk 7--8 (1998). The spike in oil prices during the Iraq-Kuwait conflict in 1990 also brought home to managers the risk of commodity price fluctuations. Continuing with airline examples, Continental Airlines' fuel costs rose substantially during the period, to more than 180 percent of its pre-invasion levels, forcing it to file for Chapter 11 protection a little over four months after the invasion took place. Id. at 14--15. For the moment, we will skip over the retort based upon the Modigliani-Miller irrelevance propositions that shareholders can hedge things like oil price risk for their own account. As discussed infra at notes 79--99 and accompanying text, risk management's success has depended on its ability to increase firm value by managing risk at the corporate level.

[64] Franklin Allen & Douglas Gale, Financial Innovation and Risk Sharing 38 (1994); James C. Van Horne, Of Financial Innovations and Excesses, 40 J. Fin. 621, 621--22 (1985); Allen & Santomero, supra note 43, at 1479--80.

[65] See Van Horne, supra note 64, at 621--22; Allen & Santomero, supra note 43, at 1479--80.

[66] The Black-Scholes options pricing formula provided a means to value options based on their terms and factors affecting the market price and volatility of the underlying asset. Consequently, even illiquid derivatives could be valued if there was a market for the underlying asset. Fischer Black & Myron Scholes, The Pricing of Options and Corporate Liabilities, 81 J. Pol. Econ. 637, 640--654 (1973). That pricing model quickly gained hold among traders and risk managers, allowing instruments to be created and valued

what risks could be transferred through the capital markets.[68] Exchange-traded currency and oil price derivatives, for example, overtook less liquid and more costly private instruments that were popular just a few years earlier.[69] Greater liquidity in the risk markets, and the introduction of new risk management technologies,[70] also permitted financial intermediaries to provide a growing array of private, over-the-counter ("OTC") hedging solutions that were closely tailored to their clients' specific risks.[71]

Today, the spectrum of risk transfer instruments has expanded beyond financial and commodities futures to include now-standard interest rate, currency, and credit

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even where there was no trading market for the derivative itself. Peter Bernstein, Capital Ideas: The Improbable Origins of Modern Wall Street 227 (1992); Frank H. Easterbrook, Derivative Securities and Corporate Governance, 69 U. Chi. L. Rev. 733, 734--35 (2002).

[67] Myron S. Scholes, Global Financial Markets, Derivative Securities, and Systemic Risks, 12 J. Risk & Uncertainty 271, 272 (1996). For example, financial intermediaries in the early 1980s typically earned an up-front fee for arranging a plain vanilla swap, plus a spread as high as 50 basis points over the life of the transaction. Less than ten years later, reflecting new entrants and increased competition in the swaps marketplace, the up-front fee was dropped and spreads were reduced to 5 to 10 basis points. Robert T. Daigler & Donald Steelman, Interest Rate Swaps and Financial Institutions 8--9 (Nov. 1988) (working paper, available at http://www.fiu.edu/~daiglerr/pdf/swaps.pdf).

[68] See Allen & Gale, supra note 64, at 38; Culp, supra note 37, at 8--9.

[69] The Chicago Mercantile Exchange, for example, provided a liquid and standardized alternative to the OTC market for foreign exchange derivatives. See Smithson, supra note 63, at 18--19; Banks, supra note 43, at 129. The Chicago Board Options Exchange did the same for options trading. See Robert C. Merton, Continuous-Time Finance 330 (1990). Firms also began to hedge by issuing hybrid instruments that combined traditional debt or equity with foreign exchange, interest rate, and commodity hedging instruments. For example, Mexico's state-owned petroleum company, Pemex, issued petroleum-linked bonds in 1973. In the mid-1980s, firms began issuing dual currency bonds, bonds with embedded foreign exchange options, convertible/exchangeable floating-rate notes, and inverse floating-rate notes. Other firms issued securities whose returns were tied to natural gas, petroleum, and other commodity prices. Smithson, supra note 63, at 18--23, 320--30; Banks, supra note 43, at 119--21, 125, 129--32.

[70] Dan Rosen, The Development of Risk Management Software, *in* Modern Risk Management 135 (Sarah Jenkins & Tamsin Kennedy eds., 2003) [hereinafter Modern Risk Management]. In July 1993, for example, The Group of Thirty (G-30) recommended that dealers use "value-at-risk" ("VaR") measures to assess portfolio riskiness. The Group of Thirty, Derivatives: Practices and Principles 10--11 (1993). VaR is a measure of the probability that the market value of an asset or a portfolio of assets is likely to decrease over a period of time under usual conditions. Olivier Scaillet, The Origin and Development of Value-at-Risk, *in* Modern Risk Management, supra, at 151--58. When the G-30 Report was issued, VaR was a specialized tool known primarily to a closed universe of risk managers. It quickly became a standard of both financial and non-financial firms, largely due to the efforts of J.P. Morgan---who provided clients, for free, with detailed directions on how to implement VaR, as well as key factors necessary to calculate VaR that were updated daily through the internet. Glyn A. Holton, Value-at-Risk 18--19 (2003).

[71] In general, OTC derivatives become less costly as public risk transfer markets develop that allow financial intermediaries to diversify away their risks across a broader array of counterparties. See Scholes, Futures, supra note 17, at 365.

derivatives.[72] Weather derivatives, such as those underlying AU's insurance contract,[73] can be more finely sliced into risks associated with temperatures in an identified region or group of cities, levels of snowfall and frost, and even the occurrence of hurricanes.[74] Through "catastrophe bonds," investors can now take on risks as diverse as earthquakes in Southeast Asia, flooding in Great Britain, and windstorms in Japan.[75] At the cutting edge, economic derivatives permit financial intermediaries to precisely hedge their exposures to a growing array of macroeconomic risks, as evidenced by macroeconomic data releases---ranging from changes in U.S. employment rates to U.S. retail sales, industrial production, consumer prices, and economic growth---on which the value of those instruments is based.[76]

Of course, in a frictionless world, if a firm chooses to transfer risk, we would expect the premium it pays to mirror the risk-related costs the firm would otherwise incur in raising capital---a zero-sum game, since the risk would now be borne by the transferee's shareholders, who should demand the same returns as the transferor's shareholders. If the risk counterparty, however, is better able to manage risk at lower cost---through increasingly complete capital markets that enable the transferee to diversify its risks across a portfolio of companies---then, over time, we would expect the premium to

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[72] A description of financial and commodities futures and interest rate, currency, and credit swaps is included in Brealey, Myers & Allen, supra note 1, at 727--39.

[73] See supra notes 29--33 and accompanying text.

[74] The first Global Warming Index was launched in April 2007 as one means for businesses to hedge against the effects of climate change on net income. Paul J. Davies, Climate Change Gives Rise to Weather Hedge, Fin. Times (London), Apr. 24, 2007, at 38. In addition to over-the-counter trading, weather derivatives can be purchased through an auction market created by the Chicago Mercantile Exchange ("CME"). See CME Weather Products, at http://www.cme.com/trading/prd/weather/index14270.html.

[75] See Liam Pleven, Sailing Toward Ill Winds, Wall St. J., May 21, 2007, at C1, C2.

[76] For a description of economic derivatives, see Blaise Gadanecz, Richhild Moessner & Christian Upper, Economic Derivatives, BIS Q. Rev. 69, 70--71 (Mar. 2007), available at http://www.bis.org/publ/qtrpdf/r_qt0703h.pdf. Economic derivatives can be traded through the CME auction market, described on the CME web page at http://www.cme.com/trading/prd/auctionmarkets.html and http://www.cme.com/trading/prd /ed/index14272.html.

fall below the cost the transferor would otherwise bear if the risk was retained.[77] The implications are significant: As markets develop for the transfer of risk, risk transfer instruments may become a lower cost substitute for public equity---permitting managers to supplement, and even replace, traditional capital and capital-related costs.[78]

B. The Real Benefits of Risk Management

Risk management poses the standard Miller-Modigliani agnosticism concerning the claim that capital structure affects firm value: Absent frictions, capital structure---whether measured by debt and equity or expanded to include risk management instruments that may not appear on the balance sheet---is irrelevant to firm value.[79] Recent scholarship regarding the real costs of cash flow volatility, information asymmetries, and other real world frictions, however, demonstrate that risk management may generate benefits (which we summarize below[80]) that enhance firm value in ways that shareholders cannot duplicate for themselves.[81] For our purposes, these benefits drive the demand that has led to growth in capital markets completeness and, in turn, provide the potential that is our concern in this Essay---the replacement of common stock held by

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[77] See Shimpi, supra note 37, at 29—37 (describing standard corporate finance and insurance models of capital structure).

[78] We note, as well, a similar relationship between capital and risk-bearing in the Basel II accord on capital adequacy by commercial banks, see Basel Committee on Banking Supervision, International Convergence of Capital Measurement and Capital Standards (June 2006), http://www. bis.org/publ/bcbs128. pdf, which is likely to result in greater levels of risk management by banks and an increased reliance on risk transfer instruments. See Ernst & Young, Basel II: The Business Impact 3--4 (Apr. 2006), http://www. ey.com/global/download.nsf/International/Basel_II_Survey_Report_2006/$file/EY_GFSRM_Basel_II_Survey2006.pdf.

[79] Franco Modigliani & Merton H. Miller, The Cost of Capital, Corporation Finance, and the Theory of Investment, 3 Am. Econ. Rev. 261, 261--71 (1958).

[80] See infra notes 84--99 and accompanying text.

[81] MacKay and Moeller demonstrate, for example, that for a sample of 34 oil refiners the real benefits of corporate risk management can enhance firm value by an estimated 2 to 3 percent. Peter MacKay & Sara B. Moeller, The Value of Corporate Risk Management 28--30 (2006), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=88172. Carter, Rogers and Simkins have also found a positive relationship within the airline industry between the hedging of jet fuel and firm value, with an average hedging premium of 5-10 percent. David A. Carter, Daniel A. Rogers & Betty J. Simkins, Does Hedging Affect Firm Value? Evidence from the US Airline Industry, Fin. Mgmt., Spring 2006, at 53, 73--74.

diversified investors as an "'all-purpose' risk cushion"[82] by transferring to the market the discrete slices that make up systematic risk.[83]

Shareholder costs to monitor portfolio risk are reflected in a firm's cost of capital. Managers, however, have less costly access to confidential information, giving them an edge over shareholders in assessing and managing risk.[84] Doing so may reduce earnings "noise" (the impact on earnings of factors outside management control) and so improve the quality of publicly available information regarding management capability and firm value.[85] To that extent, corporate hedging may enhance the shareholders' ability to manage portfolio risk, reducing their expected returns on equity and, in turn, the firm's cost of capital.[86]

A key feature of the claim that risk management increases firm value is its ability to reduce cash flow volatility. Losses may be offset by payments received under derivatives, insurance, and other risk transfer instruments. By lowering volatility, firms

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[82] Scholes, Derivatives, supra note 15, at 366.

[83] Shareholders can virtually eliminate unsystematic risk through portfolio diversification, but will nevertheless remain exposed to systematic risk. Brealey, Myers & Allen, supra note 1, at 162. Systematic risk, however, can be transferred by the firm to the marketplace, rather than being borne by public shareholders. Consequently, over time, we would expect equity to become subject to greater unsystematic risk consistent with primary ownership by management. See supra note 20 and accompanying text.

[84] See Lisa K. Meulbroek, Integrated Risk Management for the Firm: A Senior Manager's Guide, 14 J. Applied Corp. Fin. 56, 58 (2002).

[85] See Peter M. DeMarzo & Darrell Duffie, Corporate Incentives for Hedging and Hedge Accounting, 8 Rev. Fin. Stud. 743, 744--745 (1995).

[86] See Christopher Geczy, Bernadette A. Minton & Catherine Schrand, Why Firms Use Currency Derivatives, 52 J. Fin. 1323, 1328--30 (1997). A firm's costs may be further reduced to the extent that hedging lowers the risk premium it must pay managers whose wealth is largely invested in their employer (for example, through stock awards, options, and bonuses tied to company earnings). See Clifford W. Smith & René Stulz, The Determinants of Firms' Hedging Policies, 20 J. Fin. & Quantitative Analysis 391, 399--402 (1985); Lisa K. Meulbroek, The Efficiency of Equity-Linked Compensation: Understanding the Full Cost of Awarding Executive Stock Options, Fin. Mgmt., Summer 2001, at 5, 35 (2001). It may also weaken the potential for conflict faced by managers whose compensation is tied to firm performance. Peter Tufano found, for example, that gold companies whose managers held options on their employer's stock tended to manage less gold price risk (presumably increasing share volatility and the value of their options). Firms whose managers held more stock tended to more closely manage gold risk. Peter Tufano, Who Manages Risk? An Empirical Examination of Risk Management Practices in the Gold Mining Industry, 51 J. Fin. 1097, 1118--20 (1996).

may be able to free up capital they would otherwise set aside against the risk of a future drop in revenues.[87] Greater cash flow predictability filtered through a pecking order theory of capital structure may, in turn, permit firms to make value-enhancing investments using less costly internal funds,[88] rather than relying on external sources that bear the incremental costs associated with information asymmetries.[89] If internal funding is unavailable or unreliable, then a firm's ability to invest in new projects (including research and development) may be compromised; projects that appeared attractive may become less so, due to the higher cost of funding, or may be abandoned altogether, potentially resulting in a loss of value to the firm.[90] Consequently, reductions in cash flow volatility from hedging may enable a firm to pursue greater growth opportunities,[91] resulting over time in an increase in firm value[92] and, as those investments generate revenues, a reduced cost of future financing.[93]

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[87] See Nocco & Stulz, supra note 60, at 11--14. Recall, as well, the impact of AU's insurance contract on its use of capital. See supra notes 31--33 and accompanying text.

[88] Kenneth A. Froot, David Scharfstein & Jeremy Stein, Risk Management: Coordinating Corporate Investment and Financing Policies, 48 J. Fin. 1629, 1630--31 (1993). See also Judy Lewent & A. John Kearney, Identifying, Measuring, and Hedging Currency Risk at Merck, 2 J. Applied Corp. Fin. 19, 25--26 (1990) (noting that volatility in Merck's earnings, particularly related to foreign exchange fluctuations, negatively affected its investment decisions); Bernadette A. Minton & Catherine Schrand, The Impact of Cash Flow Volatility on Discretionary Investment and the Costs of Debt and Equity Financing, 54 J. Fin. Econ. 423, 438--40 (1999) (finding that higher cash flow volatility is associated with lower average levels of investment in capital expenditures, R&D, and advertising); Geczy, Minton & Schrand, supra note 86, at 1323 (finding, among a subset of Fortune 500 companies, that firms with greater growth opportunities and tighter financial constraints are more likely to use currency derivatives).

[89] Stewart C. Myers, The Capital Structure Puzzle, 39 J. Fin. 575, 589--90 (1984) (describing how the cost of capital is a function of information asymmetries, with the asymmetry greatest with equity).

[90] See David Mayers & Clifford W. Smith Jr., Corporate Insurance and the Underinvestment Problem, 54 J. Risk & Ins. 45, 51 (1987); Froot, Scharfstein & Stein, supra note 88, at 1630--31.

[91] See Geczy, Minton & Schrand, supra note 86, at 1323 (finding, among a subset of Fortune 500 companies, that firms with greater growth opportunities and tighter financial constraints are more likely to use currency derivatives).

[92] George Allayannis, Brian Rountree & James P. Weston, Earnings Volatility, Cash Flow Volatility, and Firm Value 26--27 (Dec. 2005) (working paper, available at http://faculty.fuqua.duke.edu/seminars calendar/Rountree.doc) (finding one standard deviation increase in cash flow volatility resulting in approximately a 32 percent decrease in firm value).

[93] Minton & Schrand, supra note 88, at 449--55.

A firm may also be at less risk of incurring the real costs of financial distress---such as bankruptcy costs, indirect costs from a decline in market competitiveness, and risk premiums demanded by customers, suppliers, and employees---as it improves its ability to manage risk.[94] By reducing the risk of financial distress, a firm may increase its debt capacity[95] without requiring the corresponding increase in equity capital presumed by the contractarian model[96] or the increase in the cost of debt predicted by the Miller-Modigliani irrelevancy propositions.[97] Anticipating our argument in Part III, risk management may, in effect, act as a lower cost surrogate for equity capital, permitting a firm to then substitute debt for equity in order to fund its working capital needs.[98]

None of these real benefits can be duplicated by shareholders. Value-maximizing managers, therefore, have an incentive to continue to develop a supply of instruments necessary to support a growing risk transfer market. The growth of this market may, in turn, provide firms with greater opportunities to transfer risk at lower cost---so that

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[94] Smith & Stulz, supra note 86, at 395--98.

[95] See Walter Dolde, Hedging, Leverage, and Primitive Risk, 4 J. Fin. Engineering 187, 200--213 (1995) (finding a significant positive relationship between hedging and leverage among a subset of Fortune 500 companies); G. David Haushalter, Financing Policy, Basis Risk, and Corporate Hedging: Evidence from Oil and Gas Producers, 55 J. Fin. 107, 146 (2000) (concluding that oil and gas companies with greater financial leverage manage price risks more extensively).

[96] See supra notes 48--52 and accompanying text.

[97] Modigliani & Miller, supra note 79, at 261--71. For a concise summary of the Miller-Modigliani propositions, see Robert C. Merton, In Honor of Nobel Laureate, Franco Modigliani, 1 J. Econ. Perspectives 145, 149--50 (1987).

[98] Stulz, supra note 36, at 16; Culp, supra note 34, at 15--16. In order to enhance its debt capacity, a firm will need to credibly commit to lenders to continue to manage risk after a loan is made, typically through contractual covenants. See Modigliani & Miller, supra note 79, at 292--93; Jensen & Meckling, supra note 4, at 337--39; Clifford W. Smith, Jr. & Jerold B. Warner, On Financial Contracting: An Analysis of Bond Covenants, 7 J. Fin. Econ. 117, 119 (1979). More generally, the parties confront the agency costs of debt. See Jensen & Meckling, supra note 4, at 333--43. For this purpose, the legal infrastructure necessary to implement agency cost reduction techniques include contract law, effective private enforcement of contract rights, and bankruptcy law. See, e.g., Rafael La Porta et al., Law and Finance, 106 J. Pol. Econ. 1113, 1121--26 (1998) (survey of legal rules relating to corporate shareholders and creditors).

innovations in risk transfer are likely to continue, resulting in a virtuous cycle of further declines in cost, prompting further innovation.[99]

In this Part, we have stressed the potential for new risk management techniques to overcome the barrier of capital structure irrelevancy. That potential, in turn, has provided the incentive for financial intermediaries to develop the instruments and institutions that support more complete capital markets---in which risk can be priced and sold by the slice, like New York pizza, rather than in the aggregate through common stock. We next consider the extent to which more complete capital markets may result in significant changes in corporate ownership and governance.

III. THE EVOLVING MODEL OF THE CORPORATION

Increasingly complete capital markets may begin to offer a less costly means than public equity for firms to manage risk, with risk transfer instruments over time taking on the risk-bearing role of traditional equity. By diversifying risk at the firm-level, those instruments may also allow for a greater concentration in equity ownership among owner-managers with important consequences for the future of public corporations and corporate governance.[100] If risk management can begin to substitute for risk capital, and if the risks of concentrated ownership can be diversified at the firm-level, then a central reason for an owner to take a company public in the first place disappears, and the agency costs of public equity become increasingly optional. In effect, the traditional balance

[99] Merton has made a similar observation regarding financial intermediaries---namely, that new trading markets enhance their ability to create custom-designed financial instruments, resulting in increased trading to hedge exposures and reduced transaction costs, making possible the creation of new financial instruments, and so forth. Merton, supra note 6, at 18--19. See also Robert C. Merton & Zvi Bodie, The Design of Financial Systems: Towards a Synthesis of Function and Structure, 3 J. Investment Mgmt. 1, 14 (2005) (referring to a "financial innovation spiral").

[100] See Jensen & Meckling, supra note 4, at 333--34, 343--51 (suggesting that large firms would rarely be privately owned in light of the welfare loss to owner-managers whose wealth would be tied up in a single, undiversified investment).

between agency costs and the benefits of public ownership may begin to shift towards a new equilibrium, which we discuss below,[101] as firms assess their ability to manage risk relative to the marketplace, retaining those risks where they are at a competitive advantage and transferring the rest.

The realistic option of remaining private envisions a corporate structure that resembles the LBO association that Michael Jensen described almost 20 years ago---with working capital funded primarily by debt, and private equity ownership aligning management and shareholder incentives.[102] As discussed earlier,[103] the characteristic LBO target in the 1980s private equity wave about which Jensen wrote was a market leader in a mature industry---a firm with low capital needs and high, consistent cash flow---where debt could largely substitute for equity, thereby reducing equity levels.[104] The residual equity, held by the LBO firm and management, was reduced essentially to an incentive contract. In that setting, the agency cost of equity was eliminated and the agency cost of debt was addressed by contract, resulting in a corporate form that more efficiently reduced agency costs than the public corporation. Jensen, like most economists a good Darwinian, predicted the public corporation's eclipse.[105]

The intuition we address in this Essay is that more complete capital markets, resulting from the demand for more efficient risk-bearing instruments, now makes the

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[101] See infra text accompanying note 127.

[102] Jensen, supra note 9, at 10--16.

[103] See supra note 10 and accompanying text.

[104] See Tim Opler & Sheridan Titman, The Determinants of Leveraged Buyout Activity: Free Cash Flow vs. Financial Distress Costs, 48 J. Fin. 1985, 1992-98 (1993) (finding that, during the LBO wave of the 1980s, companies with high cash flow and unfavorable investment opportunities were more likely to undertake an LBO, and companies with higher financial distress costs were less likely); Brownwyn H. Hall, The Financing of Research and Development 11 (Nat'l Bureau of Econ. Research, Working Paper No. 8773, 2002) (firms with higher R&D "intensity" were less likely to do an LBO, since the resulting reduced cash flows limited their ability to sustain R&D programs), available at http://papers.nber.org/papers/w8773.

[105] Jensen, supra note 9, at 1, 9--13.

governance structure Jensen extolled available to a much wider range of companies. A company will use risk management instruments to transfer those risks that counterparties can manage at lower cost[106] and retain only those risks over which management has a comparative advantage relative to the capital markets.[107] Again, equity approaches a management incentive contract. A riskier company that would not have matched the 1980s private equity profile---due to significant systematic risk that made it unsuitable for debt to replace equity, such as for an airline---can lay off that systematic risk slice by slice, thereby supporting a far higher level of debt and, it follows, Jensen's more efficient governance structure. Thus, companies for whom the costs of an LBO in the 1980s would have been prohibitive may now manage and reduce those costs through the transfer of risk.[108] Moreover, as a borrower's systematic risk is reduced through risk management techniques, lenders may be willing to increase the size of their loans over longer periods and so increase the size of companies that undertake an LBO.[109] As we will consider later in this Part, the story---that is, LBOs of a wider range of companies

[106] Stulz, supra note 36, at 8.

[107] Scholes, Derivatives, supra note 15, at 367; Easterbrook, supra note 66, at 737--38. See also Gillian Tett, The Appliance of Financial Science, Fin. Times (London), May 21, 2007, at 14 (describing an interview with Merton, where he notes that most companies use capital inefficiently by not retaining those risks where they have a comparative advantage and transferring the rest).

[108] For example, following announcement that Sallie Mae would be acquired by two private equity firms, there was concern that a resulting drop in credit rating would prohibitively increase its cost of funding loans. That fear was largely offset by Sallie Mae's ability to reduce risk and raise funds through ongoing loan securitizations. Gregory Zuckerman, Has Sallie Deal Put Banks in Play for Private Equity?, Wall St. J., Apr. 18, 2007, at C1.

[109] We note that, while our focus here is on corporate borrowers, lenders may (and, indeed, often do) take advantage of the capital markets innovations that we describe in this article to diversify their own risk. See, e.g., John Plender, Markets Versus the Conventional Wisdom in 2007, Fin. Times (London), Jan. 2, 2007, at 16 (noting the relationship between growth in the credit derivatives market and private equity investment); Tony Jackson, Buffet Revisited, Fin. Times (London), Mar. 12, 2007, at 20 (noting that private equity funds "take out highly leveraged loans [to fund their purchases]. The issuing banks then hand those to the investment banks, which package them up into derivatives and add vastly more leverage in the process.").

and of a much larger size than the 1980s preferred profile---at least superficially fits the most recent private equity wave.[110]

More complete capital markets may also affect the public corporation in another way. Private equity acts on corporations that are already public. But what about the decision to go public in the first place? Here, we suggest that risk management's ability to reduce systematic risk through increasingly complete capital markets provides an alternative to an initial public offering ("IPO"), both of which respond to an owner's need to secure liquidity to diversify her own portfolio. Some historical evidence supports this conjecture. Tradable derivatives were developed quite early for agricultural products to facilitate risk management by farmers and by companies for which farm commodities were a central input.[111] The hypothesis---that private ownership should be more likely among large businesses for which the price and availability of commodities are a central determinant of profitability---appears to have been the case in the agricultural market. For those companies, the capital markets were complete at a much earlier time.[112]

To this point, we have told a fairly straightforward story. Increasingly complete capital markets, developed in response to the demand for risk management techniques

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[110] See supra note 11 and accompanying text.

[111] See, e.g., William Cronon, Nature's Metropolis: Chicago and the Great West 97--147 (1991) (describing the development of U.S. grain market in the 19th century).

[112] Key to the creation of a futures market, through which businesses may hedge exposure to commodities prices, was the creation of an instrument to inexpensively transfer title to commodities and a standard system of grading those commodities. Both existed in the United States by the mid-1800s, resulting in the launch of one of the largest futures exchanges in the world, the Chicago Board of Trade ("CBOT"). See Randall S. Kroszner, Can the Financial Markets Privately Regulate Risk?, 31 J. Money, Credit & Banking 596, 598--99 (1999). Even before creation of the CBOT, however, an active commodities forward market existed in New York City and Buffalo, New York, as a means for producers and merchants to lock-in future delivery prices. See Jeffrey C. Williams, The Origin of Futures Markets, 56 Agricultural Hist. 306, 309--16 (1982).

that could increase firm value, also turn out to change the most efficient way to manage the agency costs of public investment. The ability to lay off systematic risk by the slice rather than through the broadband risk-bearing of common stock allows a wider range of public companies to be the subject of an LBO and, we believe, has the potential to permit a broader range of companies to remain private. In short, the story is one in which changes in financial technology change the border between public and private companies.[113]

Even in our story, however, a looming question remains: What is the new border between public and private ownership? The recent private equity wave witnessed an enormous shift away from public ownership, and we may suppose also a shift in the balance that dictates an owner's decision to go public in the first place. Are we now, 20 years after the specter was first raised, seeing the eclipse of the public corporation?

At this stage, we are willing to make a bet on what the near future holds---like, but rather more pedestrian than, Stephen Hawking's wager on whether information ever escapes from a black hole.[114] From our perspective, the increasing ability to shift risk by the slice moves the border towards privatization, but still leaves significant room for a vigorous public market. In fact, we may be seeing the early stages of this move as large

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[113] This transaction cost theory of the ownership structure of the firm also finds support in current changes in the boundary of the firm---those activities that are undertaken within the firm and those whose output are acquired across a market. The increasing vertical disintegration of the supply chain in technology industries reflects the same kind of reallocation of activities as we have described with respect to risk management. Where competitive success requires cutting edge technology across a number of areas, it is increasingly difficult for a single company to maintain superiority across all areas. The result has been an increasing reliance on co-development contracts, joint ventures, and acquisitions to accomplish tasks that previously had been done internally. For a useful evaluation of competing explanations for the phenomenon of supply chain vertical disintegration and their relation to a theory of the firm, see Charles F. Sabel & Jonathan Zeitlin, Neither Modularity Nor Relational Contracting: Inter-Firm Cooperation in the New Economy, 5 Enterprise & Soc'y 388, 390--401 (2004) (U.K.).

[114] Hawking conceded his famous bet with John Preskill in July 2004 by presenting him with a baseball encyclopedia---from which information (at least about baseball) could "escape." Dennis Overbye, About Those Fearsome Black Holes? Never Mind, N.Y. Times, July 22, 2005, at A1.

going private transactions, and the creation of new trading markets, have started to refashion public companies into "private-ish or public-esque hybrids of their former selves" that include both private equity and quasi-public shareholders.[115] Yet, for the time being, the public market provides benefits that are not available through other means. Our bet is that we will see a shift away from public ownership at the margin, but until those benefits can be provided by other institutions, public ownership will continue to play a meaningful role in the capital markets. The trick---both in predicting where public ownership will remain strongest and where to invest in the innovation that will displace it---is in understanding the continuing benefits, beyond facilitating risk-bearing, that the dispersed ownership of equity provides.

Consider at the outset whether to go public in the first place. The decision to go public turns on more than issues of risk transfer and agency costs. For some firms, the

[115] Dennis K. Berman, Latest Trend in Big Buyouts: Blend of Public, Private Traits, Wall St. J., May 22, 2007, at C1.

benefits of going public, when balanced against the associated costs,[116] may still favor the public equity markets even in the face of alternative means to transfer risk.[117]

At the shareholder level, going public permits a firm's equity owners to diversify their exposure to a single venture.[118] An IPO also provides greater liquidity by lowering the transaction costs of selling shares when the sale is motivated by reasons other than diversification.[119] In addition, an IPO creates a currency for use in later acquisitions, which may provide an advantage over cash-financed deals.[120] Risk management can substitute for the risk diversification offered by the public markets, but it fails to provide the liquidity an owner or prospective owner will need to sell her shares for other reasons.

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[116] The costs of going public include underwriting and related transaction costs, underpricing costs (including those arising from information asymmetries), and the ongoing costs of public reporting, including the disclosure of sensitive or proprietary information. See, e.g., Kevin Rock, Why New Issues are Underpriced, 15 J. Fin. Econ. 187, 205--07 (1986) (concluding that new issues are underpriced in order to guarantee that uninformed investors purchase); Jay R. Ritter, The Costs of Going Public, 19 J. Fin. Econ. 269, 269--76 (1987) (describing the direct expenses of going public); Yosha Oved, Information Disclosure Costs and the Choice of Financing Source, 4 J. Fin. Intermediation 3, 16 (1995) (finding that higher quality firms are likely to prefer bilateral over multilateral financing in order to avoid public disclosure of private information); Thomas J. Chemmanur & Paolo Fulghieri, A Theory of the Going-Public Decision, 12 Rev. Fin. Stud. 249, 251 (1999) (analyzing differences in information-related costs of public and private firms); Sreedhar T. Bharath & Amy K. Dittmar, To Be Or Not to Be (Public) 8--14 (U. Mich. Ross Sch. Bus. Research Paper, 2006) (describing the costs and benefits of being a public firm), available at http://ssrn.com/abstract=951710. The costs of complying with Sarbanes-Oxley have also figured prominently in the stated reasons for why some companies go private. In addition to regulatory risk, one report estimates that the average cost of Sarbanes-Oxley compliance by a public company, with annual revenues of at least $1 billion, was $14.3 million in 2004, an increase of $4.4 million over 2003. Thomas E. Hartman, The Cost of Being Public in the Era of Sarbanes-Oxley 1 (June 16, 2005), http://www.fei.org/ download/ foley_6_16_2005.pdf.

[117] Thus, Bharath and Dittmar test various cost-benefit theories of why firms go public, suggesting that a change in the relative tradeoffs that favor a decision to go public should drive a public firm's later decision to go private. Bharath & Dittmar, supra note 116, at 30--31.

[118] Salman Shah and Anjon V. Thakor, Private versus Public Ownership: Investment, Ownership Distribution, and Optimality, 43 J. Fin. 41, 57--58 (1988) (finding that the decision to go public reflects a balance between the costs of capital markets screening and the benefits of improved risk sharing); Marco Pagano, The Flotation of Companies on the Stock Market---A Coordination Failure Model, 37 Eur. Econ. Rev. 1101, 1103 (1993) (noting that an IPO opens up new risk-sharing opportunities for other investors).

[119] Marco Pagano, Fabio Panetta & Luigi Zingales, Why do Companies Go Public? An Empirical Analysis, 53 J. Fin. 27, 39--40 (1998).

[120] James C. Brau & Stanley E. Fawcett, Initial Public Offerings: An Analysis of Theory and Practice, 61 J. Fin. 399, 424--25 (2006) (based on a survey of CFOs, finding that the most important motivation to go public is to create public shares for future acquisitions).

At the corporate level, the informational efficiency of public company share prices provides an important management tool---a company receives virtually instant feedback through prices, and periodic feedback through analyst reports, concerning its strategy and performance and that of its competitors, which would not be available to a private company. Consequently, public equity facilitates incentive compensation to attract and retain talented managers and employees. By providing an unbiased assessment of management performance, a public market facilitates the design of an incentive structure that can minimize agency costs. Even talented owners and managers benefit from additional performance assessments that are not perfectly correlated with their own.[121]

The public markets also offer an antidote to the distortion that results from managers viewing the need for change through the semi-opaque walls of the corporation. Absent public scrutiny of a company's strategy and the state of its industry, owner-managers may be more at risk of failing to respond to changes in their business environment or selecting sub-optimal projects that erode firm value.[122] Thus, in industries where the ability to rapidly respond to change provides a competitive advantage, the benefits of being a public company may, in the end, outweigh the reductions in cost from private ownership.[123]

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[121] Bengt Holmström & Jean Tirole, Market Liquidity and Performance Monitoring, 101 J. Pol. Econ. 678, 707 (1993) (finding that stock prices assist in determining compensation, since they include objective market assessments of performance). The informational content of share prices may also include "serendipitous" information that public investors chance upon over the course of their day-to-day activities that is not known to corporate insiders. Avanidhar Subrahmanyam & Sheridan Titman, The Going-Public Decision and the Development of Financial Markets, 54 J. Fin. 1045, 1047 (1999).

[122] Jensen, supra note 9, at 9; Peter Tufano, Agency Costs of Corporate Risk Management, 27 Fin. Mgmt. 67, 73--74 (1998).

[123] See Scholes, Futures, supra note 17, at 364--65 (summarizing the cost-benefit analysis).

Ironically, the informational efficiency of a public market is---like the ability to substitute risk management for risk capital---a function of increasing capital markets completeness. Share prices have become more informative over the last 50 years, in part reflecting the increase in firm-specific disclosure over the period. Stock market signals, therefore, may be an increasingly effective means to gauge how well management is performing.[124]

Finally, the benefits of going public include the prestige (perhaps diminishing) and credibility of being a public company, as well as the publicity associated with the decision to go public and the firm's continuing public disclosures.[125] In addition, lenders may be more willing to extend less expensive loans to a firm that is subject to ongoing market evaluation, is obligated by the securities law to make periodic disclosures, or negotiates more aggressively in light of its other funding sources.[126]

A firm's decision to remain private, then, is by no means inevitable, but it is increasingly feasible as public shareholders yield their status as least costly risk-bearers, the agency costs of public equity therefore become optional, and the benefits of diversification become available through alternative risk-bearing instruments. Where the balance ends up---whether we have made a good bet---will depend on two things. The first is the ability of the capital markets to provide liquidity to shareholders for needs

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[124] See Gordon, supra note 22, at 70--91. A firm's share price is more informed to the extent it reflects a greater amount of information that is reasonably knowable about the firm. Merritt B. Fox, Measuring Share Price Accuracy, 1 Berkeley Bus. L.J. 113, 120 (2004).

[125] See Neal M. Stoughton, Kit Png Wong & Josef Zechner, IPOs and Product Quality, 74 J. Bus. 375, 377 (2001) (suggesting that consumers may discern product quality from stock price); Elizabeth Demers & Katharina Lewellen, The Marketing Role of IPOs: Evidence from Internet Stocks, 68 J. Fin. Econ. 413, 414--16 (2003) (arguing that underpricing an IPO, resulting in a "hot market" for a new offering, may result in greater media attention for the issuer).

[126] See Pagano, Panetta & Zingales, supra note 119, at 53--56. See also Raghuram Rajan, Insiders and Outsiders: The Choice between Informed and Arm's-Length Debt, 47 J. Fin. 1367, 1393 (1992) (borrowing from multiple sources may circumscribe a single bank's ability to extract surplus).

other than diversification. On this front, as proved to be the case with risk management, we expect that if the demand appears, the capital markets will devise the instruments and institutions necessary to meet it. The second is the importance of the capital markets in providing information that is instrumental to managing a company's strategy. The ability to respond quickly to change is becoming more important as globalization and improved technology, among other forces, increases the rate of change in many industries.[127] If public market information enhances a company's competitiveness, survivorship will favor companies that have gone public. Again, we imagine this influence will operate on the margin; there are many highly successful private companies, such as Koch Industries and BMW.

The implication, however, is that the traditional balance between agency costs and the benefits of public ownership may begin to shift towards a new equilibrium, as firms assess their ability to manage risk relative to the marketplace, retaining those risks where they are at a competitive advantage and transferring the rest. In more complete capital markets, firms can accept or reject the agency costs of public ownership, choosing instead to manage risk using alternative risk transfer instruments; working capital can be funded with debt. A firm's decision to go (or remain) public, therefore, may increasingly be less a function of the need to raise risk capital or diversify risk, as in the traditional construct, and more a balance between the incremental costs of going public (compared to a reliance on risk transfer instruments) and the incremental benefits of being a public company (beyond the receipt of broadband risk capital).

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[127] See Thomas L. Friedman, The Lexus and the Olive Tree 14--24 (1999) (describing the erosion of boundaries between politics, culture, technology, finance, national security and ecology); Michael C. Jensen, The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems, 48 J. Fin. 831, 840--47 (1993) (listing the reasons for systematic overcapacity problems in various industries).

What will be the impact of private equity funds---LBO associations in Jensen's 1980s terminology---on the future of public ownership? The recent LBO wave has been both broader and deeper than the 1980s wave, with larger and more diverse companies being acquired by private equity funds.[128] Has the increasing completeness of the capital markets eliminated the barrier that prevented the eclipse of the public corporation when it was first predicted?

We think not, or at least not yet. Most important, the structure of the private equity market now, as in the 1980s, requires a liquidity event (such as an IPO or a sale of the acquired business) within the usual ten-year life of the private equity fund in order to return capital to investors.[129] In the absence of taking the portfolio company public

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[128] See supra note 11 and accompanying text.

[129] The notion of a fixed timeline to measure a general partner's performance and providing investors the option to reinvest their funds with the general partner is central to the incentive structure of a private equity fund and a source of the claim for lower agency costs than in the case of public ownership. Jensen, supra note 9, at 18. The same structure is found in venture capital funds. See Paul Gompers & Josh Lerner, The Venture Capital Cycle 171--200 (2004); Ronald J. Gilson, Engineering a Venture Capital Market: Lessons from the American Experience, 55 Stan. L. Rev. 1067 (2003). Without a fixed life, the structure becomes, in effect, a closed-end investment fund, with the increased agency costs associated with that structure. See Reinier Kraakman, Taking Discounts Seriously: The Implications of "Discounted" Share Prices as an Acquisition Motive, 88 Colum. L. Rev. 891, 902--05 (1988) (describing agency costs of closed-end funds). In 2006, Kohlberg Kravis Roberts and Apollo sold private equity funds to the public, without a mandatory term, which they listed on Euronext Amsterdam. See James Anderson & Adrian Deitz, Seeking a Wider Public: Ironically for Some, New Private Equity Funds are Submitting to the Rigours of the Public Capital Markets, 25 Int'l Fin. L. Rev. 44, 44--45 (2006). In contrast, rather than selling interests in a particular fund that the firm advises, Blackstone's public offering was of common units that indirectly benefit from its operating entities. But are common units the same as common stock? Investors in Blackstone's offering own units in a holding partnership that, through wholly-owned subsidiaries, acts as the general partner of, and owns equity interests in, five other partnerships that, in turn (with limited exception), own Blackstone's operating entities. See The Blackstone Group L.P., Amendment No. 9 to Registration Statement under the Securities Act of 1933 (Form S-1), at 4, 16 (June 21, 2007) (describing organizational structure following the offering), http://www.sec.gov/Archives/edgar/data/1393818/000104746907005100/a2178442zs-1a.htm [hereinafter Blackstone Registration Statement]. Voting rights and control are contractually limited, as are fiduciary and other duties running to the common unitholders, potentially resulting in substantial agency costs. See infra note 135. Not surprisingly, a substantial amount of interest in the primary offering came from speculators and those who could not otherwise buy the underlying portfolio directly on more attractive terms. Joe Bel Bruno, Blackstone IPO Still on Track, Forbes.com, June 21, 2007, http://www.forbes.com/feeds/ap/2007/06/21/ap3846051.html; Michael Flaherty & Lilla Zuill, Blackstone Raises $4.1 Billion, Reuters, June 22, 2007, http://www.reuters.com/article/innovationNews/idUSN 2136246820070622?page Number=1.

again, from where does the private equity fund secure liquidity? One might sell the portfolio company to another company in its industry. For venture capital funds there are cycles in which a sale is preferred to a public offering as a liquidity event.[130] However, venture capital portfolio companies are typically much smaller than the companies being taken private in the most recent LBO wave. For these larger companies, there may be barriers to an acquisition-funded liquidity event.

In recent years, another form of liquidity event has arisen: the sale of a portfolio company by one private equity fund to another.[131] The puzzle is the underlying logic of this pattern. One source of value creation from an LBO is what Steven Kaplan has called "shock therapy"---the quick fix of operating and investment problems at the acquired company.[132] If that is the primary value of an LBO, then what value is added by the second, post-shock therapy private equity fund, and from what source will the returns to its investors come?

A second source of value from the purchase of the portfolio company by a second private equity fund has more promise, but also promises lower returns. A private equity fund simply may provide better governance---that is, a more cost effective reduction of agency costs---than possible in a public corporation. From this perspective, even the best part-time independent directors are not the equivalent of full time, highly incentivized

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[130] Gilson, supra note 129, at 1075.

[131] See William R. Parish, Jr. & Jonathan S. Ayre, Private Equity M&A: The Force Behind The Seller's Market, Metropolitan Corp. Couns., Feb. 2007, at 10 (noting a "substantial increase in the percentage of total M&A volume involving private equity buyers and sellers"). That trend may grow as the pipeline for new deals becomes increasingly crowded---suggesting the possibility that the theoretical basis for remaining private described in this article may, in a short while, become a practical necessity for some companies. See Private Equity's Buying Spree May Clog Up the Exit Doors Later, Wall St. J., Jan. 5, 2007, http://online.wsj.com/article_print/ SB116 794658482 867468.html (noting that, in 2006, the global IPO market was $200 billion, whereas there are roughly $2 trillion in private equity transactions that may go public in the next few years).

[132] Steven N. Kaplan, The Staying Power of Leveraged Buyouts, 6 J. Applied Corp. Fin. 15, 24 (1993).

private equity managers. Thus, the portfolio company is worth more in the hands of a private equity fund than with diversified public ownership. After shock therapy is completed, the first fund will sell to a second fund because the first fund requires liquidity, and because the company is worth more in private hands. The second fund will earn less than the first---the difference being the return on shock therapy---but will still earn more than investors in public companies due to the superior governance structure it provides.[133]

This analysis leads to an interesting speculation. If the benefit of the second private equity fund is the reduced agency costs resulting from the quasi-public ownership of a limited partnership with outside investors, then would fully private ownership provide an even better governance structure? We are then back to the question: Why go public in the first place?; or in the context of our example: Why not sell the company to its managers with the addition of debt supported by risk transfer instruments entered into by the company or its lenders? Given transaction costs, would private ownership be more efficient than the serial monogamy of successive sales to private equity firms? To be sure, even private owners have liquidity needs,[134] but they are certainly of lesser magnitude than the need to reduce to cash the entire value of the corporation every ten

[133] There are other possible explanations for exit sales occurring between private equity funds. The first is specialization---different private equity funds may have different skill sets. For example, a company with multiple problems may be acquired initially by a private equity fund with particular financial engineering skills---getting the balance sheet in place and stopping the worst sources of cash drains---but without specialized skills in solving the company's operational problems. In this situation, the sale by the financially-oriented private equity fund to an operationally-oriented fund may be just a process of specialized sequential problem solving. A less general explanation focuses on timing. A private equity fund may not have completed the "shock therapy" of a portfolio company acquired later in the fund's term by the time a liquidity event is necessary. Here the sale to a new private equity fund operates essentially as a substitution of one problem solver for another, driven primarily by different time horizons. Finally, the second private equity fund actually may be making the acquisition for the wrong reasons: to get investors' capital placed to protect the fund advisor's management fee. Our point in this article is not yet to choose among the explanations---all of which may be operative in one case or another---but to stress the governance explanation, which has not received very much attention in the debate.

[134] See supra notes 118--119 and accompanying text.

years. To reframe Jensen's provocative question of 20 years ago, can we foresee the eclipse of the quasi-public corporation?[135]

To this point in our assessment of how different ownership structures reduce agency costs, we have ignored the potential for those costs to arise in connection with the risk transfer instruments that support the transformation of common stock from an all purpose risk-bearer to an incentive contract. Will owner-managers alter the company's business strategy to the detriment of the risk counterparties? The Black-Scholes option pricing model assumes that when the parties are shifting risks whose probability distribution cannot be influenced by either side---the transfer is a fair game. However, if one of the parties can influence the probability distribution *ex post*, the game is no longer fair. Put more concretely, suppose a manager-owned airline has transferred 100% of its exposure to oil prices to a counterparty. Will the airline then have the same incentive to reduce the risk of oil price increases through changes in its operations?[136]

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[135] Blackstone's proposed public offering, see supra note 129, provides an interesting counterpoint to the argument framed in the text. If sophisticated management reduces the benefit of going public, why is one of the most sophisticated risk managers, whose business is taking public companies private, taking itself public? We suggest that one reason may lie in the structure of the IPO itself---providing Blackstone with access to "permanent capital," see Francesco Guerrera & James Politi, Reason to Believe? What May Underlie Blackstone's New-found Faith in Public Markets, Fin. Times (London), Mar. 21, 2007, at 15, with little or no common unitholder oversight over management decisions, and the reduction or elimination of duties (including fiduciary duties) running from the general partner and its affiliates to the unitholders. See Blackstone Registration Statement, supra note 129, at 18, 53--58; Dennis K. Berman, Blackstone Aims to Keep Control as Public Entity, Wall St. J., March 23, 2007, at A1. The result is liquidity for Blackstone's owners at relatively low cost to them, but potentially resulting in substantial agency costs being borne by the unitholders. A demand for liquidity for non-diversification purposes may provide another part of the answer. Blackstone's founding generation built substantial brand value through its leadership. The need to successfully navigate the transfer of generations---can Blackstone monetize its current brand value and, with permanent capital, become Goldman Sachs?---may cut in favor of a public offering. See Jenny Anderson, The Logic and the Timing of Taking Blackstone Public, N.Y. Times, Mar. 23, 2007, at C6. Of course, the offering may have also simply reflected a belief that the private equity industry has peaked and the public markets would over-value the business or units being sold.

[136] For airlines, managing jet fuel costs can have a direct effect on firm value, thus providing managers with an incentive to minimize those costs. See Carter, Rogers & Simkins, supra note 81. Southwest Airlines recently announced that its fuel costs would be substantially higher in 2007, despite having successfully hedged some 90 percent of its exposure. See John Hughes, Fuel Bill Still 'Painful' at Southwest Airlines, Int'l Herald Trib., June 15, 2007, at 17; David Bonds, Twilight of Hedging;

At present, the response to this agency cost problem has been to define the transferred risks by reference to measures beyond the transferor's ability to influence, in order to minimize the potential for moral hazard. In the case of AU's insurance policy, for example, the risk was defined by reference to an industry measure over which AU had little influence. Doing so limited AU's managers' capacity to adjust AU's behavior to manipulate the measure.[137] The result, however, was a mismatch---between an optimal transfer of those risks where the firm was competitively disadvantaged, and a second-best solution where a portion of that risk remained with the firm---that reflected the residual agency costs that remained.[138]

The deconstruction of equity is still too preliminary for the shape of the responses to moral hazard in risk transfer to have taken shape. AU illustrates one approach---reduce the possibility of hidden action by making the measure both transparent and outside the risk transferor's control. The cost was basis risk, a partial mismatch between the underlying risk and its contractual measure. But just as the demand for instruments that allowed risk to be transferred by the slice led to innovation on the supply side that made the capital markets more complete, so too will the demand for techniques that constrain agency costs associated with risk transfer give rise to responsive structural and

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Southwest's Fuel-price Strategy, Bulwark of Profits, is Running Out of Steam, Aviation Week & Space Tech., May 21, 2007, at 29. Since not all efforts to directly manage fuel costs are successful, managers in the ordinary course would be expected to find other operational means to minimize their risk of oil price increases. Froot, Scharfstein & Stein, supra note 88, at 1642--45, also describe how operational decisions like plant location can serve to manage risk.

[137] See supra note 32. More generally, this approach still leaves managers with an incentive to reduce the company's exposure to the risk being hedged since the cost of the hedge is directly related to the size of the risk being transferred to the market as opposed to being managed internally.

[138] We referred to this mismatch as "basis risk" when we described the AU insurance contract earlier. See supra text accompanying note 32.

contractual innovations.[139] The landscape of corporate ownership---the distribution of public, quasi-public, and private ownership across different industries---at any given time depends on the comparative capacity to reduce agency costs in each ownership arrangement.

IV. CONCLUSION

In this Essay, we have argued that the premise that public shareholders are the cheapest risk-bearers, which forms the foundation for the focus of modern corporate governance on agency costs, may no longer be accurate. Changes in the capital markets have led to new risk management techniques and instruments which enable firms and private owners to transfer risk in discrete slices. Risk management at the firm level, therefore, may be more efficient than risk-bearing by diversified shareholders, providing real benefits that shareholders cannot duplicate for themselves. These innovations suggest that equity as a broadband risk-bearer may no longer be a standard feature of the large corporation, and so the agency costs associated with that structure may also become voluntary. If so, then the traditional balance between agency costs and the benefits of public ownership may begin to shift lurchingly[140] towards a new equilibrium, for the time being reflecting a balance between the incremental costs of going public (compared to a reliance on risk transfer instruments) and the incremental benefits of being a public

[139] To pose an interesting speculation, traditional corporate governance posits that directors owe a duty to maximize value for the long-term benefit of their common shareholders rather than for other investors on the right side of the corporation's balance sheet. See, e.g., Katz v. Oak Industries, Inc., 508 A.2d 873, 879 (Del. Ch. 1986) (no fiduciary duty owed to bondholders). Where a company is closely held (here because of its ability to enter into risk transfer transactions), are there barriers to contractually limiting fiduciary duties to facilitate risk transfers? See Partnoy, supra note 23, at 802--26 (surveying the implications of financial innovation for management's fiduciary duties).

[140] See supra text accompanying notes 19--21 and 127.

company (beyond the receipt of broadband risk capital), a balance that was decidedly second-order in the traditional analysis.

We also considered the extent to which the recent private equity wave, both broader and deeper than that of the 1980s, ultimately may be a precursor of change in the traditional construct of the corporation---raising again the possibility of the eclipse of the public corporation, but with more complete capital markets now making the LBO structure anticipated by Michael Jensen available to (and sustainable by) a much wider range of companies. In doing so, we distinguished between private ownership and what we have called the quasi-public ownership of large corporations by a series of private equity funds---an ownership pattern of serial monogamy driven by the institutional structure and liquidity needs of private equity funds.

Our goal has been to be provocative---to view a snapshot of today's corporate ownership landscape through the prism of more complete capital markets, as a means to think about where it is all going. As with any effort of this sort, continued capital markets innovation may cause our predictions to be wrong. However, we have accomplished our goal if our account successfully frames the issues which corporate planners and financial intermediaries must confront going forward.

An appropriate place to conclude is with what we have not considered. A shift to private ownership or even quasi-public ownership, fueled by discrete as opposed to broadband risk transfer, will return capital to current investors in public equity. But that capital still will be necessary to fund future risk transfers of the character that gave rise to its return, and the investors still will need a destination for that capital. We have not considered here the institutional structure and financial instruments by which investors

then will invest their capital in the market for risk transfer. We expect that the deconstruction of equity on the supply side that we have considered here will be mirrored on the demand side by a deconstruction of investment instruments. Institutions and the public may then build portfolios by investing in slices of different risks offered by intermediaries just as they now do in common stock,[141] but speculating on the shape of those arrangements is a project for another day.

[141] For example, Fermat Capital Management LLC, a money manager based in Westport, Connecticut, invests about 90% of its assets in catastrophe bonds (commonly referred to as "cat bonds"), whose values are linked to the occurrence of earthquakes, hurricanes, and other natural disasters. Cat bonds are issued by insurers as one means to transfer their risk exposures on outstanding policies. For Fermat's clients, these bonds offer one means to diversify their portfolios beyond traditional investments. See Pleven, supra note 75, at C1, C2.

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