Allocating Risk Through Contract: Evidence from M&A and Policy Implications

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ALLOCATING RISK
THROUGH CONTRACT:
EVIDENCE FROM M&A
AND POLICY IMPLICATIONS

John C. Coates IV

Allocating Risk Through Contract:
Evidence from M&A and Policy Implications[*]

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Abstract

In a hand-coded sample of M&A contracts from 2007-08, risk allocation provisions exhibit wide variation. Earn-outs are the least common means to allocate risk, indemnities are most common, followed by price adjustment clauses. Techniques for mitigating enforcement costs – escrows, holdbacks, and seller financing – are common. Target SEC registration and ownership dispersion correlate negatively with the use and extent of risk sharing. Target-owners retain risk more frequently, but not universally or exclusively, in industries in which current liabilities vary more, and when buyers and targets are in different industries. Bidder and target law firm agents match on bid value and prior deal experience, but law firm mismatches are common, and both law firm experience and experienced-based mismatches correlate with the use, variance, and design of risk allocation provisions. While asymmetric information and incentives are important, so are transaction and agency costs, implying roles for lawyers to serve as transaction-cost engineers and for policy-makers to set binding default rules of property, tort and contract law. Specific policy implications include: contract statutes of limitations should be shorter; default law should require minimum amounts in controversy and caps on post-closing contract liability; and lawyers should disclose to clients their M&A experience and typical outcomes of specific risk-allocation provisions.

JEL Codes: D23; D74; D82; G13; G32; G34; G38; K12; K13; K22; K40

Allocating Risk Through Contract: Evidence from M&A

Transactional lawyers perform four tasks: they advise, document, negotiate, and process. Core to the first task is the allocation of risk. Where feasible, and cost-effective, risks associated with a deal can be allocated in advance, by contract. Substantively, risk allocation consists of advising clients about risks created by or related to the deal, and about how default property, tort and contract law will allocate those risks, and then suggesting, drafting, modifying, and negotiating clauses allocating some or all of those risks in the contract. Not all risks will be foreseen, and not all foreseen risks will be allocated – some are best allocated in line with default law; others will be too difficult to specify; and still others might be cheaply specified and allocated but will be too difficult to enforce. But well-designed contracts can be an efficient means for lawyers to add value to their clients by serving as "transaction-cost engineers" in Ron Gilson's well-known conception.[1]

From an abstract perspective, one can view most if not all provisions of a contract as allocating risk. But a set of standard provisions is more specifically and self-consciously designed to shift risk from one party. Risk allocation provisions (***RAPs***) consist of terms that alter property rights depending on the realization of one or more uncertain facts related to the value of the target. Some risks are resolved between contract signing and completion, while others extend past deal completion, when new information about the target's value will be revealed and/or can be verified. The focus of this paper is on three distinct types of RAPs that extend past deal completion – ***post-closing RAPs*** – that are triggered by a distinct type of risk: (1) price-adjustment clauses, typically triggered by fluctuations in short-term assets and liabilities, (2) indemnities, typically triggered by realizations that vary from target representations, particularly regarding uncertain pre-closing liabilities, transforming those representations into long-lived risk-allocation devices, and (3) earn-outs, typically triggered by variations in future earnings or earnings-relevant events or milestones. This paper also considers three contract elements commonly intended to reduce the costs of enforcing post-closing RAPs: seller financing, escrows, and holdbacks.

This paper has theoretical, descriptive, empirical and normative components. The paper applies three distinct economic theories: (a) "neoclassical" theories of uncertainty, risk, asymmetric information, and incentives, which set out conditions under which a contract can improve joint welfare by shifting risk from one party to another; (b) "transaction cost" theories, which set out conditions under effective contracting produces costs that exceed any benefits a contract might otherwise create, and (c) agency theories, which set out conditions under which behavior of agents (here, corporate lawyers) will diverge from the interests of their economic principals (shareholders of the corporations involved). One can conceive of these theories as engaged in a long-term competition to best or most parsimoniously describe, explain, rationalize or predict when and how risk is in fact allocated in contracts.

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[1] Ronald J. Gilson, Value Creation by Business Lawyers: Legal Skills and Asset Pricing, 94 Yale L.J. 239 (1984).

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As one inning in that long-term competition, this paper applies those theories to RAPs in M&A contracts. The empirical design is mixed methods – practitioner-based experience, interviews and a survey combined with standard case-control observational design, enhanced with public-private target matching.[2] The paper describes in more detail than prior research how the main RAPs are typically designed and written, and presents evidence on the incidence, design and correlates of a set of RAPs in a sample (n=120) of deals for US SEC-registered targets and non-SEC-registered targets, matched by size, industry and year. This research design is motivated by specific implications of asymmetric information and transactions cost theories developed on RAPs (in Part III), which predict that post-closing RAPs will be more likely to be found in deals for non-SEC-registered targets.[3]

Among the findings are (1) RAPs are common but vary systematically; (2) RAPs correlate strongly with empirical proxies for risk, asymmetric information, and costs of contract enforcement; and (3) RAP incidence and design also correlate with the M&A experience of the bidder law firms, consistent with economic theories of agency. No single strand of economic theory suffices to explain RAP incidence and design – rather, several must be considered to best predict how parties share risk in M&A. More specifically:

- Consistent with asymmetric information and incentive theories of risk-sharing, (a) target-owners are less likely to retain risks if the target is in a different industry than the buyer, or is SEC-registered, or; (b) target-owners are more likely to retain risks if the target is in an industry subject to greater short-term liability risk; and (c) target-owners commonly retain some but not all risk, and are significantly more likely to retain risks related to *pre-closing* liabilities (through indemnities) or *pre-closing* fluctuations in short-term assets (through price-adjustment clauses) than *post-closing* risks (through earn-outs).

- Consistent with transaction cost theories: (a) dispersed target-owners usually do not retain any of the risks studied here, and target-owners are less likely to retain risks if they are dispersed, even beyond the point at which target owners are unlikely to have significant informational advantages over the bidder, and even after controlling for target SEC registration; (b) specific "support" provisions

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[2] The methods have well-known limits – qualitative evidence is often subjective and of uncertain generality, and quantitative correlation does not equal causation. In light of the enthusiasm for random experiments belatedly sweeping US legal academy, it should be noted that the limits of the methods used here can be overstated, as such methods can provisionally falsify many theories, put limits on the degree to which correlation may be due to chance, and produce provisional causal inferences, the reliability of which can be tested through replication. Likewise, random experiments face limits of feasibility, ethicality, cost, and external validity.

[3] The research design also links the results presented here to a series of related papers, *see* John C. Coates IV, The Powerful and Pervasive Effects of Ownership on M&A (Harvard Law Sch. John. M. Olin Ctr. for Law, Econ., and Bus., Discussion Paper No. 669, 2010); John C. Coates IV, Managing Disputes Through Contract: Evidence from M&A, Harv. Bus. L. Rev. (forthcoming 2012). These papers draw on the same sample used in this paper and together demonstrate the extent to which ownership structure shapes M&A practice. But since the sample is randomly drawn from all control bids for US targets in 2007-08, without regard to size, the data are of independent interest for analyzing and understanding the content of M&A agreements, such as RAPs, and their correlates.

designed to address enforcement costs of RAPs – seller financing, holdbacks, and especially escrows – are common in contracts containing the RAPs studied here; (c) RAP design commonly relies on focal points to simplify negotiations, and limits target-owner liability in ways that minimize the risk of inefficient disputes, such as through caps, baskets/deductibles, thresholds and relatively short survival periods.

- Consistent with lawyer-client agency cost theories, bidders with lawyers who are more experienced, both absolutely and relative to target lawyers, produce contracts in which (a) RAPs and RAP support exhibit less variance, (b) RAPs are less common, less extensive, and less complex, and, finally, (c) RAP support and escrows are larger, all after controlling for other relevant factors.

The plan of the paper is as follows. Part I reviews relevant economic literature. Part II develops testable hypotheses. Part III describes common RAPs. Part IV introduces the sample and provides summary statistics. The hypotheses are tested in Parts V (RAP incidence) and VI (RAP design). Part VII recaps the findings and describes limits of the study. Part VIII presents normative and policy implications.

I.   Literature Review

a. Risk, Asymmetric Information, and Efficient Risk Allocation

Economists have long been elaborating theories of how conditions of risk and asymmetric information affect markets. More specifically, they have theorized about how contracts (such as insurance contracts) respond to those conditions, how such contracts generate new difficulties, such as adverse selection and moral hazard, and how contracts respond to those difficulties.[4] Such analysis suggests warranties can be valuable for three reasons: (1) under conditions of uncertainty (but symmetric information), where goods are risky and buyers are more risk-averse than sellers, warranties reduce the loss in welfare caused by risk, as in markets for insurance,[5] (2) under conditions of uncertainty and asymmetric information, warranties signal high quality, and reduce the effects of adverse selection, and so facilitate trade,[6] and (3) under conditions of asymmetric information and control, as an incentive for seller to engage in effort and invest in quality.[7] These predictions are developed in the M&A context below.

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[4] For reviews of these literatures, see Paul Milgrom and John Roberts, Economics, Organization and Management 126-247 (1992); Patrick Bolton and Mathias Dewatripont, Contract Theory [pages] (2005). On warranties specifically, K. Wehrt provides a literature review in Encyclopedia of Law and Economics (eds. B. Bouckaert and G. De Geest).

[5] Geoffrey Heal, Guarantees and Risk-Sharing, 44 Rev. Econ. Stud. 549-560 (1977) (guarantees optimally share risk under conditions of symmetric information). On insurance markets, see generally G. Debreu, Theory of Values (1959).

[6] A. Michael Spence, Market Signalling: Information Transfer in Hiring and Related Screening Processes (1974) (job market signaling). S.J. Grossman, The Informational Role Of Warranties And Private Disclosure About Product Quality, 24 J. L. & Econ. 461-483 (1981) shows that disclosure alone of true defect rate allow markets to function without further warranty of good, but his model assumes false disclosures are barred as a matter of fraud or deceptive advertising regulation, which is equivalent to providing an indemnity for false information.

[7] George L. Priest, A Theory Of Consumer Product Warranty, 90 Yale L. J. 1297-1352 (1981).

All economic models make assumptions about risk preferences. Risk neutrality is commonly assumed, more for tractability than truth.[8] With respect to individuals, it has been common at least since Arrow 1971 to assume that absolute levels of risk aversion fall with wealth (see, e.g., Becker 2006).[9] Similarly, it has been common in principal/agent models to assume that as an agent's wealth increases, profit sharing contracts become more efficient, since the agent is willing to take on more risk.[10] Sometimes it is asserted or assumed that corporations are risk neutral, either on the ground that they have indefinite life or because their shareholders are diversified, but a moment's reflection suggests that this assumption is counterfactual, at least as applied to many corporations.[11] These issues are taken up below.

The primary focus of law and economics scholars has been background default rules of control law, such as the doctrines of mistake and impossibility,[12] and not patterns of actual contracts.[13] One well-known but rare example of a legal scholar applying economics of uncertainty and asymmetric information to predict patterns in actual contracts is Priest 1981, who examines a small non-random convenience sample (n=62) of consumer product warranties.[14] He finds that they typically last for one year, and

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[8] See C.A. Holt and S. K. Laury. Risk Aversion and Incentive Effects, 92 Am. Econ. Rev. 1644–55 (2002) (noting common assumption of risk neutrality and finding "clear evidence for risk aversion, even with low stakes, [which they say] suggests the potential danger of ... the simplifying assumption of risk neutrality").

[9] Kenneth Arrow, Essays in the Theory of Risk Bearing (1971); Bo Becker, Wealth and Executive Compensation, 61 J. Fin. 379-97 (2006). From this, models have warranties have assumed that relatively less wealthy and more numerous employees or customers are more risk averse than relatively wealthier firms or the diversified shareholders of those firms (see, e.g., Milgrom and Roberts 1992).

[10] E.g., J.-J. Laffont and M.S. Matoussi, Moral Hazard, Financial Constraints and Sharecropping in El Oulja, 62 Rev. Econ. Stud. 381-99 (1995).

[11] For example, shareholder diversification is unlikely in the context of privately held companies, where owners – other than private equity funds, perhaps -- are unlikely to own a portfolio of similarly sized companies. Such diversification only reduces non-systematic risk, in any event, Gilson, supra note 1, leaving systematic risks in place. While dispersed owners might have sufficiently varying risk preferences that they might want managers to act neutrally with respect to risk, firms with concentrated owners would (but for agency costs) be likely to act in line with the risk preferences of those owners, which are unlikely to be strictly neutral with respect to risk. Finally, as pointed out long ago by Coffee, Jensen, and others [cites], corporate managers may often effectively control companies with dispersed owners, and are unlikely to cause the companies to act in a risk neutral fashion.

[12] Legal scholars have developed this theory as applied to contract law. Posner and Rosenfield 1977 analyze ways courts might assign liability in ambiguous contract settings to the least-cost insurer of a risk connected to a contract. E.g., Richard A. Posner & Andrew M. Rosenfield, Impossibility and Related Doctrines in Contract Law: An Economic Analysis, 6 J. Legal Stud. 83 (1977). See also A. Mitchell Polinsky, Risk Sharing Through Breach of Contract Remedies, 12 J. Legal Stud. 427, 428 (1983); Thomas J. Holdych & Bruce D. Mann, The Basis of the Bargain Requirement: A Market and Economic Analysis of Express Warranties, 45 DePaul L. Rev. 781 (1996) (analyzing incentive effects of express warranties in the sales of goods context, and arguing against the "basis of the bargain" requirement in the UCC).

[13] E. Posner 2003 argues that the applications of economics to contract law have not been highly successful, either descriptively or normatively. Eric A. Posner, Economic Analysis of Contract Law After Three Decades: Success or Failure, 112 Yale L.J. 829, 832 (2003).

[14] Priest, supra note 6. Priest also finds no correlation between a seller's market share and industry concentration, on the one hand, and warranty terms, on the other (except that the then-concentrated auto industry did exclude more events from their warranties). For empirical studies of warranties or insurance outside the M&A setting, see, e.g., Daniel Schwarcz, Reevaluating Standardized Insurance Policies, 78 U. Chi. L. Rev. 1263 (2011); Florencia Marotta-Wurgler,

rarely last for more than three years, contrary to signaling theory, which Priest argues predicts that warranty duration should correlate with the life of the good, which in his sample varied from ten to fourteen years. Instead, he argued, the contracts in his sample were consistent with theories taking account of investment incentives created by risk allocation contracts (i.e., moral hazard).

Financial economists have applied theories of uncertainty, information and moral hazard to contracts of various kinds. Close in spirit to this paper is Kaplan and Stromberg 2003, who focus on contracts between venture capital funds and entrepreneurs.[15] Applications in the M&A contract setting are rare. Gilson 1984 applies insights from finance and economics to develop a theory of how M&A lawyers can add value.[16] Gilson argues lawyers add value with contracts that respond to deviations from assumptions in asset pricing models: common time horizons, common value expectations, and full information. He suggests earn-outs address differing expectations, but also that differing time-horizons created by earn-outs require further clauses allocating control over the business in the earn-out period, and that representations, indemnities, seller legal opinions, holdbacks and escrows respond to the failure of the full information assumption. Gilson observes the common use of indemnities in deals for non-SEC-registered targets and the rare use of indemnities in deals for SEC-registered targets. He attributes the difference to two factors that reduce information asymmetries in the public target setting. First, he notes that public company managers being more likely to seek post-deal employment, which reduces their incentive to mislead the buyer. Second, he notes that public companies are subject to SEC oversight and disclosure obligations, reducing information asymmetries confronting a buyer.

Gilson's analysis remains seminal. However, his article combined theory and anecdote, and presented no systematic evidence on how common were the contracting responses to uncertainty and asymmetric information. Nor did he analyze the specific provisions of earn-outs or indemnities in any detail, or attempt to explain potential variation in the incidence and design of these provisions.

Other scholars[17] and practitioners[18] have studied earn-outs empirically and have provided valuable insights into optimal M&A contracting. However, this paper shows

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Competition and the Quality of Standard Form Contracts: The Case of Software License Agreements, 5 J. Empirical Legal Stud. 447 (2008).

[15] Steven N. Kaplan and Per Stromberg, Financial Contracting Theory Meets The Real World: An Empirical Analysis of Venture Capital Contracts, 70 Rev. Econ. Stud. 281–316 (2003).

[16] Gilson, supra note 1, called this function of M&A lawyers "transaction-cost engineering," and notes a fourth assumption of the economic models summarized here – zero transaction costs – but much of his discussion had less to do with transaction costs as analyzed by economists, on which see below Part I.b, and more to do with implications of elements of the economics of information and risk, analyzed in this Part I.a.

[17] Brian J.M. Quinn, Putting Your Money Where Your Mouth Is: The Performance of Earnouts in Corporate Acquisitions, 81 U. Cin. L. Rev. 1 (2012); Matthew D. Cain, David J. Denis and Diane K. Denis, Earnouts: A Study of Financial Contracting in Acquisition Agreements, 51 J. Acct. & Econ. 151 (2011); Roberto Ragozzino and Jeffrey J. Reuer, Contingent Earnouts in Acquisitions of Privately Held Targets, 35 J. Mgt. 1 (2009); Robert F. Bruner, Applied Mergers and Acquisitions 614 (2004); Srikant Datar, Richard Frankel and Mark Wolfson, Earnouts: The Effects of Diverse Selection and Agency Costs on Acquisition Techniques, 17 J.L.Econ. & Org. 201 (2001); Ninon Kohers and James Ang, Earnouts in Mergers: Agreeing to Disagree and Agreeing to Stay, 73 J. Bus. 445 (2000); see also Victor P.

that earn-outs are the least common of the typical methods of sharing risk in the M&A context. No prior research relates economic theory to risk-sharing provisions more generally, including indemnities, price-adjustment clauses, and risk support provisions, or compares the determinants of earn-out use and design with the determinants of other methods of contracted risk sharing. Those tasks are taken up in this paper.

More recently, the M&A Committee of the American Bar Association (*ABA*) Business Law Section has for several years sponsored annual or bi-annual analyses and reports of M&A contracts, including RAPs.[19] Those studies are useful in providing a list of key issues in contract design, as perceived by practitioners, including RAPs in non-SEC-registered target deals. However, those studies have reported only aggregate data (e.g., averages), do not identify deals or companies or detail the methods of selecting deals for analysis, leaving readers unable to confirm the coding of contracts, and do not attempt to relate contract data to theories of when and how risk can be efficiently allocated.[20] This paper takes up those tasks.

b.   Transaction Costs, Incomplete Contracts, and Risk Allocation Provisions

A separate line of research analyzes costs associated with contracting, notes that such costs mean that all contracts are to some extent "incomplete" in that they do not address all contingencies, and model the extent of incompleteness and its consequences, including "countermoves" that the parties may take in light of the resulting incompleteness.[21,22] Most of this literature focuses on the difficulties of anticipating, specifying, and agreeing upon low-probability contingencies – in other words, it too builds on the fact of uncertainty and risk, but focuses not on implications of differences in risk preferences or the information of the parties, and instead on ways that uncertainty

Goldberg, Framing Contract Law: An Economic Perspective (2006), at 143 (analyzing earnouts as response to adverse selection and asymmetric information).

[18] James C. Freund, Anatomy of a Merger (1976) at 206.

[19] ABA Private Target Study 2006, 2007, 2008, 2009 and 2011. Consistent with the findings reported in Part IV below, the ABA studies of public targets do not focus on or report data on the incidence or design of RAPs of the kind studied in this paper.

[20] Nor do the ABA studies code for firm or industry characteristics, deal structure, or deal outcomes. In addition, the ABA studies also take for granted in their design the conjecture that target ownership structure determines M&A practices – there are separate studies by separate teams of separate contract elements of deals involving different samples for public and private targets, and the studies do not compare deals across ownership types.

[21] E.g., Oliver Hart, Firms, Contracts and Financial Structure (1995) at 21-28 (reviewing transaction cost explanations for the scope and size of firms); Oliver E. Williamson, Markets and Hierarchies (1975) (analyzing types of transaction costs and implications for allocation of assets across firms); B. Klein, R. Crawford and A. Alchian, Vertical Integration, Appropriable Rents, and the Competitive Contracting Process, 21 J. L. & Econ. 297-326 (1978) (developing "hold-up" problem arising from contract incompleteness, which in turn arises from transaction costs and firm-specific capital).

[22] A separate body of research has focused on "mechanism design" – game-theoretic based procedures for transactions designed to induce parties to reveal private information to facilitate trade. See generally A. Mas-Collel, M. Whinston and J. Green, Microeconomic Theory (1995) at ch. 23. As yet, it is unclear whether this line of research has any relationship to real-world contracts, however. See E. Posner, supra note 13.

disables complete contracting.[23] Few scholars have applied this research to the M&A setting.[24]

One strand of transaction cost theory predicts that some deals will not occur because the very act of reaching a deal generates costs that may not be overcome, even if (in theory) a deal could be good for both sides.[25] Bargaining costs, arising from incomplete information, irrational negotiation, strategic self-commitments, externalities, can lead to bargaining breakdown.[26] Some breakdowns are due to out-of-pocket costs (e.g., costs of evaluating environmental risks) or temporal constraints (a target trying to enlist a white knight in response to a takeover bid), but others are due to the dual-sided uncertainty each party faces in understanding its own valuation for the good (here, a company) being sold, and how the other party values the good.[27] The parties may attempt to take positions in negotiations at odds with their true valuations in order to capture as much surplus from the trade – the gap between the parties' valuations – as possible, and such tactics can cause deals to fall through.

Negotiation theory predicts that parties may rely on various techniques to overcome the risk of bargaining breakdowns and to reduce negotiation costs.[28] One technique is to rely on focal points[29] – standard terms drawn from nature or custom that provide simple ways to choose a term within a zone of possible agreement – or to use Schelling's definition, terms that represent "each person's expectation of what the other person expects him to expect to be expected to do." Examples include round numbers (e.g., 10%, versus 9.56%), or whole, common units, such as years (versus 358 days). Other techniques rely on symmetry (e.g., identical representations from both parties) or (situational) fairness (e.g., splitting the difference).

Less commonly, the costs of enforcement – whether of contracts or default laws – are also focused on as a separate type of transaction cost. Shavell, for example, develops the implications of the fact that some parties will be "judgment proof," meaning that they have fewer assets than their legal liabilities, which undermines the incentives that such liabilities otherwise provide.[30] Gilson suggests that the absence of indemnities in M&A

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[23] E.g., Steven N. S. Cheung, Economic Organization And Transaction Costs, in The New Palgrave: A Dictionary of Economics (1987) at 55–58.

[24] For one application, see John C. Coates IV, Fair Value as an Avoidable Rule of Corporate Law, 147 Penn. L. Rev. 1253 (1999), at 1296-1303 (discussing transaction costs of contracting to specify rules for valuation in the context of conflict transactions, including freezeout mergers and management buyouts).

[25] P. Milgrom and J. Roberts, Bargaining Costs, Influence Costs, and the Organization of Economic Activity, in J.E. Alt and K.A. Shepsle (eds.), Perspectives on Positive Political Economy (1990), at 57-89.

[26] E.g., J.F. Nash, Two-Person Cooperative Games. 21 Econometrica 128–140 (1953); S. Laengle and G. Loyala, Bargaining and Negative Externalities, 6 Optim. Ltrs. 421-430 (2012); Tore Ellingsen and Topi Miettinen, Commitment and Conflict in Bilateral Bargaining, 98 Am. Econ. Rev. 1629-1635 (2009); Thomas Schelling, The Strategy of Conflict (1960), at chapter 2.

[27] See, e.g., Milgrom and Roberts, supra note 27.

[28] E.g., Fisher & Ury, supra note 22.

[29] E.g., Thomas Schelling, The Strategy of Conflict (1960), at 67.

[30] Steven Shavell, The Judgment Proof Problem, 6 Int'l Rev. L. & Econ. 45–58 (1986).

contracts for public targets is due to the larger costs of administering the indemnity for public companies, where collective action problems must be overcome to implement a post-closing indemnity.[31] Although he does not specifically discuss judicial enforcement, it may be fairly implied from his reference to collective action problems. This notion is elaborated below.

c. Agency Theory and Risk Allocation Provisions

A final body of economic literature relevant to contracts in the M&A context is agency theory. Research on agency costs generally dates back to Arrow 1963.[32] That theory has, among other things, developed many implications of the difficulties that principals have in evaluating services by provided by expert agents. These include suboptimal investment in or purchase of expertise, with the implication of suboptimal innovation by experts; suboptimal demand for expert services; suboptimal diagnosis by experts of the principal-clients' problems; and suboptimal care or effort by the experts.[33]

In the corporate context, most of this literature focuses on managers as (economic) agents for shareholders as (economic) principals. Little prior agency-cost literature focuses specifically on lawyers as agents,[34] and no prior research develops the implications of either manager-agency or lawyer-agency costs on RAP design and incidence. Yet, since RAP design and implementation are both part of the traditional services provided by lawyers, their design and incidence may be influenced by the economics of the lawyer-agents of the parties to an M&A transaction, particularly since legal services are largely a credence good,[35] for which service providers (lawyers) have a fair amount of autonomy in diagnosing and recommending particular choices by clients, even sophisticated corporate clients.

This literature does not have a single, clear directional implication for how often RAPs will be used or how they will be designed. It may be that agents with less expertise will tend to underuse risk-allocation provisions, or they may tend to overuse them, in an effort to "grand stand" for their clients.[36] On the one hand, less expert agents may fail to use risk-allocation provisions when they would be best for the clients, because they have not been exposed to them, fail to consider them, or fail to implement them effectively. On the other hand, less expert agents may go too far (from their clients' perspective) in

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[31] Gilson, supra note 1.

[32] Kenneth J. Arrow, Uncertainty and the Welfare Economics of Medical Care, 53 Am. Econ. Rev. 941–73 (1963).

[33] For a survey, see Yuk-Fai Fong, When Do Experts Cheat and Whom Do They Target? 36 RAND J. Econ. 113–30 (2005).

[34] E.g., John C. Coates IV, Explaining Variation in Takeover Defenses: Blame the Lawyers, 89 Cal. L. Rev. 1301 (2001).

[35] Ronald J. Gilson, The Devolution of the Legal Profession: A Demand Side Perspective, 49 Md. L. Rev. 869, 889 (1990) (discussing legal services as a credence good).

[36] On "grand standing" in the venture capital context, see Paul A. Gompers, Grandstanding in the Venture Capital Industry, 42 J. Fin. Econ. 133, 133 (1996); Peggy M. Lee and Sunil Wahal, Grandstanding, Certification and the Underpricing of Venture Capital Backed IPOs, 73 J. Fin. Econ. 375, 405 (2004),

trying to function as "transaction-cost engineers," and perversely raise transaction costs, as a way of demonstrating their value to their clients, who lack information sufficient to realize this is going on. More expert agents, by contrast, may underuse RAPs because they require effort or time (and generate higher opportunity costs for more expert agents) or they may overuse them if they mistakenly apply terms that are efficient in contexts that more commonly call for greater expertise to contexts that do not.

Agency costs may also manifest in RAP design. Less expert agents may produce less complex or extensive RAPs than would be ideal, again because of a lack of knowledge or exposure to different ways in which RAPs might be useful. However, less expert agents may also produce inefficiently (overly) complex or extensive RAPs, for the same "grand-standing" reasons that lead them to use RAPs when they are inefficient. More expert agents, by contrast, may better be able to advise clients on how to assign a value to RAPs, and to the disputes that complex or extensive RAPs may generate, which may make simpler or less extensive RAPs more efficient. Alternatively, more expert agents may use simpler or less extensive RAPs out of shirking, because (as above) the opportunity costs of developing or negotiating RAPs are greater than for other agents.

The interaction of agents may also produce effects on RAP design. More expert agents may constrain the grandstanding tendencies of less expert agents, either out of shirking or because the less complex or extensive RAPs are more efficient, net of bargaining and enforcement costs. More expert agents, however, may also bring pie-increasing knowledge to the attention of less expert counterparts, increasing the tendency of both to use more complex or extensive RAPs. These various possibilities, pointing in different directions, can be informed by an examination of RAP data, to see if their use or design is systematically related to the experience of the lawyer-agents who negotiate them for their clients, and if so, how.

II.   A Summary of Major Types of Risk Allocation Provisions in M&A Contracts

Before developing and applying these theories to the M&A context, it is worth setting out a brief description of the ways in which risk can be allocated in an M&A contract. M&A risks addressed by contract fall into three general categories:[37] (1) risks that a proposed deal will not be completed as planned – *completion risks*; (2) risks that a buyer will misvalue the target company and its businesses – *misvaluation risk*; (3) risks that the value of the target will shift between the time the deal contract is signed and the completion of the deal – *value-shift risk*.[38] Most prior scholarship has tended to focus on completion risks, which can arise due to topping bids, antitrust or other regulatory

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[37] In addition, buyers face a number of other deal-related risks that are not easily or customarily addressed by contract, including risks related to the execution of the deal (e.g., unexpectedly large out-of-pocket costs due to litigation triggered by the deal); to the buyer's own market perception (e.g., market inferences that the buyer did not have good organic projects and chose to do the deal as the best available option); and to post-deal integration and transition (e.g., loss of customers or suppliers as a result of the deal, ineffective communication about the deal, employee morale if the deal results in layoffs).

[38] Equivalent misvaluation and value-shift risks exist for target-owners in deals relying on buyer stock or other securities as "deal currency."

problems, failure of bidder financing, or other causes. In this paper, the principal focus is not on completion risk but on the core value risks facing a buyer – that the target is worth what the buyer believes at the time the deal contract is signed, and that the value does not decrease while the deal is pending.

To address the core risks of misvaluation and value-shifts, deal lawyers have developed a number of contract provisions. Most important are representations and warranties (called representations from here on), which require the target to provide (true) information to the buyer of a specified nature, often evidently related to value, such as the representation that the target's financial statements be true. On their own, representations that are untrue provide a buyer with specified remedies in both contract and tort (and also provide the target with the incentive of at least a possibility of criminal enforcement in extreme circumstances). To more carefully delineate a buyer's remedies in the event of a breach of representation, an M&A contract will typically include specific indemnification obligations, linked in large part to the target's representations, in which specific procedures are laid out for a buyer to collect a damage award if the representations are not true.

In contracts that do not include such indemnification provisions, the target's representations typically "die" at completion of the deal – that is, there is an explicit term in the contract that provides that the representations do not "survive," and serve only as remedies should the target breach prior to deal completion. Thus, while representations on their own provide some risk-shifting should a misvaluation or value-shift be discovered prior to deal completion, it is the combination of representations with explicit *indemnification* clauses that is typically the principal way in which both misvaluation and value-shifting risks are allocated from target to buyer through a deal contract. (Appendix E contains examples of each major type of risk-shifting provision studied in this paper.)

Indemnification clauses limit the target's obligations in several ways. They often include *caps*, which impose an upper limit on the target's obligations for breach, which can be at, below or above the overall deal price. They include first-dollar *baskets* – a condition that no indemnification obligation is due until the amount that would be due (but for the basket) exceeds a set amount, in which case the indemnity amount starts back at zero (the "first dollar") – or *deductibles[39]* – a equivalent to a "deductible" in an insurance policy – i.e., an amount the target need not pay even if the relevant trigger is met. As a further wrinkle, some indemnities provide that only claims above some *threshold* amount count towards the basket or deductible – in essence, a de minimis exception for otherwise indemnifiable claims. Finally, indemnity clauses limit the time period for the target's risk retention with *survival clauses* similar in concept to statutes of limitation.

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[39] The jargon applied to indemnification provisions is not uniform. In some contracts, such as the example contained in Appendix E, "threshold" is used instead of "deductible," but in other agreements, "threshold" is used as in the text here, to mean the minimum amount for a claim to count towards an indemnification obligation. Other contracts label such a minimum amount a "de minimis claim" or use other terminology.

One of the difficulties with addressing all types of misvaluation or value-shifting risk through representations is that there are some known risks as to which both buyer and target know that the target cannot know with any certainty, as of the signing of the deal contract, what the information of true interest to the buyer will be as of deal completion. An example is the future earnings-generating capacity of the target. A second example is the level of working capital at the target, which will fluctuate on a daily, and even hourly, basis. Representations come with legal risks that may be suboptimal to impose as to risks that will only be resolved after a deal contract is signed, even if they are things that will be resolved (to some extent) prior to the completion of the deal. Representations, for example, can give rise to tort liability, even if the contract appears to limit liability in specific ways,[40] and even as to future events, if the person making the representation has the requisite scienter. As a result, targets should consider whether a proposed representation concerns knowable facts, or is truly a forward-looking prediction (which a target may still be better positioned to make than the buyer).

As to forward-looking predictions, contingent payment clauses are often a better route for allocating valuation and value-shifting risks. Two examples are *earn-outs* and *price adjustment clauses*. Both explicitly address future states of the world, and do so by providing that the parties' obligations to pay under the contract are contingent on actual realizations of the future relative to some specified benchmark. This avoids the legal risks associated with representations, while shifting risk from one party to the other for the relevant contingencies. As the name suggests, earn-outs are typically contingent on future earnings (or cash flows or other measures of the future success of the target), while price adjustments are typically contingent on value-relevant account levels that will be known within a short time of, but typically only after, deal completion, such as cash, debt, or working capital.

A final type of clause addresses difficulties buyers may have in enforcing RAPs if there is a dispute or if the target-owners are judgment-proof (e.g., have fewer assets than their liabilities under the RAP, or have fled the relevant jurisdiction, or are too difficult to locate). These provisions allow the buyer to defer payment a portion of the otherwise payable purchase price until a specified contingency is resolved. The term *holdback* is typically reserved to clauses that permit the buyer to retain the deferred payment, while *escrow* is a typically used to describe a deferral held by a third party that is directed by a collateral contract or other arrangement to pay upon realization of the contingent or expiration of a specified time period. A related means to accomplish a similar goal is for a set of target-owners to accept *debt consideration* as all or part of the purchase price from the buyer, sometimes referred to as *seller financing.*[41] To be legally effective to shift unrelated valuation or value-shift risks, debt consideration should be accompanied by a setoff clause explicitly permitting the buyer to reduce its payment obligation by the

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[40] E.g., Abry (Delaware Chancery Court finding that indemnification cap coupled with a non-reliance clause does not override basic tort liability of seller if seller made an intentional misrepresentation).

[41] The use of stock consideration also shifts some of the valuation and value-shifting risks from buyer to target, to the extent that the impact of the risk is significant relative to the buyer's overall value, and thus the value of its stock. Most targets are smaller than most buyers, however, making this a diffuse and less efficient means of addressing the kinds of risks addressed in this paper.

amount of the related risk as realized – otherwise, insolvent target-owners (or their creditors) may be able to collect on the debt instrument and then default in whole or in part on the reciprocal indemnification obligation. As holdbacks, escrows and debt consideration support the enforcement of RAPs, they will be referred to in the remainder of this paper as ***RAP support***.

[Insert Figure 1 About Here]

The three major types of RAPs cover discrete but overlapping types of risks, distinguished both by type and by the time periods that they cover. Figure 1 (which is stylized) illustrates the differences and overlap in time periods covered. Indemnities focus on liabilities and the pre-signing period, often extending far back in time, but they also often relate to risks that may not be realized until after the closing. Price adjustments are focused on current assets and liabilities, and the period from signing through the closing, but also extend backwards in time to the last balance sheet prior to the signing, and sometimes are based on metrics that encompass other types of assets and/or liabilities, and can extend past the closing. Earn-outs are focused on earnings or cash flows in the period after the closing, but also sometimes relate to pre-closing changes that affect post-closing metrics, and of course earnings reflect current assets and are net of liabilities, and so overlap with indemnities and price-adjustments.

III.   Application of Economic Theories Relevant to Risk Allocation Provisions

In this part of the paper, the economic theories reviewed in Part I are applied to develop more specific testable hypotheses about how and why RAPs could be expected to appear in M&A contracts, and how they would be designed. To begin simply, note that default property and other laws allocate risk to owners of that property. This observation applies to businesses as well as to the other kinds of property. A buyer in an M&A transaction will take on the risks of the target business, absent some contract to the contrary.

a.   Application of Risk Theories to RAPs

Yet basic theories of risk, referred to above, suggest that a buyer is not always going to be the best bearer of risks associated with the target business. The target's prior managers can be expected to have better information about those risks, and since M&A transactions are never instantaneous – there is no true "spot market" in M&A – the target's managers will also be in a position to make investments and/or take precautions in the period leading up to the completion of the deal that will affect the risks of the business after it is acquired by the buyer. Prior to the closing, the target's informational advantage will be largest where the buyer is not already operating in the target's industry. After the closing, the informational advantage of the target managers will begin to fall, and the ability to make investments and take precautions will entirely switch to the buyer. Realizations of risks that are primarily related to the pre-closing period may be affected by actions of the buyer after the closing – for example, liabilities to counterparties arising from pre-closing torts or contract breaches may grow if the buyer does not maintain good post-closing relations with the counterparties.

These points from asymmetric information lead to three simple hypotheses:

Hypothesis 1.   Target owner-managers will retain pre-deal risks through contract.

Hypothesis 2.   Target owner-managers will not retain post-deal risks, will not retain pre-deal risks that can be affected by buyer for very long after the deal, and will not retain 100% of even pre-deal risks.

Hypothesis 3:   Target owner-managers will be less likely to retain risks where buyers are in the same industry.

Still, several factors complicate these predictions. First, agency theory reminds us that targets may have owners other than their managers, as with SEC-registered held targets, or even non-registered held targets with passive outside owners, and those non-manager owners will tend to have less information than the target managers about target risks, and they may even have less information than buyers (particularly those in the same industry as the targets). Relatedly, some non-manager owners will not be able to control investments or precautions prior to the deal, particularly if the owners are

dispersed, and face collective action problems in monitoring or controlling target managers. These points from agency theory lead to a further hypothesis:

Hypothesis 4:   SEC-registered held targets and targets with dispersed owners will be less likely to retain pre-deal risks.

A second complication arises within asymmetric information theory, and has to do with relative risk-aversion. Buyers tend to be larger than targets. Target owners may have other wealth in addition to their ownership of the target, but if they do not, they will have less wealth than the buyer (treated as a relevant unit for comparison), and more risk-averse. If target-owners are generally more risk-averse than buyers, and the risk premium they would charge buyers to share risks were large enough, then (contrary to hypothesis 1), risk-retention should not be common.

Alternative hypothesis 1A: Targets will not retain any risks through contract.

More likely, risk preferences will vary among targets and bidders, and thus for the risk aversion of targets relative to bidders to vary. If risk aversion is positively correlated with wealth, then, all else equal, one would expect that the risk aversion of bidders to rise as bidders rise in size, and that the risk aversion of targets relative to bidders should fall as the ratio of target-to-bidder size rises, making risk retention by the target less costly for bidders and more likely to be observed.[42] By the same token, targets are more likely to cap the risks they retain below the deal price as the ratio of target-to-bidder assets falls. Finally, if relative risk aversion is an important factor leading to risk sharing, one would expect more risk sharing in deal contexts in which risk is higher.[43]

These points from asymmetric information theory lead to three further hypotheses:

Hypothesis 5:   Owners of targets that are small relative to bidders are less likely to retain risk.

Hypothesis 6:   Owners of targets that are small relative to bidders are more likely to cap the risk at a size below the value of the bid.

Hypothesis 7:   Owners of targets in industries in which liabilities fluctuate more over time are more likely to retain risks.

Finally, risk theory is general, but risks allocated in real contracts will be specific. Some risks may be different from others, and better allocated in different ways. For example, some targets will have more *earnings*-related risk. It seems reasonable to expect, as a first approximation, that high-technology companies will have riskier

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[42] The independent effect of target size (and thus bid size) on its own relative risk aversion is unclear, since target owner risk aversion should fall in wealth (which should be higher the larger, all else equal), but the size of the risks to be retained by target owners will also increase with the size of the target (and thus the bid).

[43] The same hypothesis could be derived from asymmetric information theory, if risk (uncertainty) were correlated with information asymmetries, as seems likely.

earnings, because their earnings will depend upon highly uncertain technology development. A final risk-theoretic hypothesis follows:

Hypothesis 8:   High-technology targets are more likely to retain post-deal earnings risk (through earn-outs).

      b. Application of Transaction Cost Theories to RAPs

What about transaction cost theory? How does it add to or vary from the above analysis? Although transaction costs can arise from asymmetric information, the distinct contribution of those theories are costs that would arise even if target-owners had no more information about targets than buyers and risk preferences between buyer and target were the same. One example is due to the risk of bargaining breakdowns, as outlined in Part I above. Risk allocation theory implies nothing to suggest that RAPs should rely on focal points, whereas transaction cost theory does. A simple hypothesis follows:

Hypothesis 9:   Indemnification clauses should use round standard units to specify duration, thresholds, baskets, and caps.

A second example of transaction costs that would exist even with symmetric information and identical risk preferences are enforcement costs.[44] In deals where target-owners would otherwise optimally retain risks but for enforcement costs, the parties are likely to also contract to reduce the costs of enforcing the risk-allocation provisions. One set of methods to reduce enforcement costs are for buyers to retain some portion of the purchase price, such as through seller financing and holdbacks. However, such provisions raise incentive problems and potential enforcement costs of their own, since buyers may falsely claim rights under RAPs and target-owners may face litigation costs in suing buyers. A third type of contract provision – a third-party escrow – would require the payment of a fee to a third party, but would reduce enforcement costs for both buyer and target, as well as reducing incentive problems associated with holdbacks. Putting these points together:

Hypothesis 10:   RAP support provisions – seller financing, holdbacks and escrows – will be common where RAPs are used, and escrows, in particular, will be used if enforcement costs are expected to be high relative to the value to both parties of risk-sharing.

Finally, RAPs that require payments from target owners to buyers post-closing – such as indemnities and price-adjustments -- will face enforcement costs that increase in target ownership dispersion. Buyers will face significant costs if they have to keep track

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[44] Added to enforcement costs are costs imposed by securities law on holdbacks, escrows and debt consideration issued to dispersed target owners. If dispersed target owners hold ongoing claims against a bidder, whether or not those claims are formally securities, the bidder may be viewed as having offered securities to the target owners, triggering delay and costs described above. Offering documents will be required to disclose in detail how the contingent payments to target shareholders are to be calculated. The bidder will be required to provide ongoing disclosure to target owners under the securities laws, even if those owners have no voting or other rights against the buyer beyond those specified in the deal contract.

of, locate, notify, serve process on, and eventually levy against assets of dispersed owners. At first blush, it might seem that RAP support provisions – such as hold-backs, seller-financing and escrows – would eliminate this effect, as just discussed. However, as target owners grow more dispersed, the effectiveness of these support provisions falls, since each dispersed target-owner will face a fixed transaction cost to enforce such provisions, even against third party escrow agents, and the relative benefits to the target-owners of the related RAP provision will fall as they must be shared with more target owners. Thus, transaction cost theory suggests all types of risk sharing – including RAP support provisions – should be less common with dispersed target-owners.

So far, this analysis largely lines up with risk-allocation theory, in suggesting that dispersed target-owners will be less likely to retain risk than targets with concentrated owners. However, on closer inspection, a few differences emerge. First, risk-allocation theory predicts that information asymmetries between a buyer and target owners will diminish as target ownership increases, because dispersed owners will have delegated management to professional managers, reducing their information about their own company. Thus, above some relatively small number of owners, asymmetric information theory suggests that RAPs should be less attractive, and ownership dispersion should cease to negatively correlate with RAP incidence.

Second, transaction cost theories suggest target SEC-registration should have no distinct effect on RAP incidence as a result of enforcement costs, because ownership dispersion rises continuously and SEC-registration is dichotomous, and because many companies voluntarily elect to be publicly registered, and have the same or lower ownership dispersion than non-registered companies, in which case the SEC-registered but relatively concentrated target should present lower enforcement costs for post-deal RAP enforcement than a non-registered target with relatively dispersed owners. Risk-allocation theories, on the other hand, suggest that SEC registration should have an independent effect, because SEC registration increases public information about a target, diminishing the value of RAPs. Thus, transaction costs theory suggests an alternative to hypothesis 4:

Alternative Hypothesis 4A: Targets with dispersed owners will be less likely to retain risks of any kind, risk retention should continue to fall as ownership disperses, beyond the point that owners are also knowledgeable managers, but SEC-registered targets should be no less likely to retain risks than non-registered held targets with equivalent ownership dispersion.

c.   Application of Agency Theories to RAPs

A final set of hypotheses can be derived from agency theory. First, and most basically, more experienced lawyers may have greater prior exposure to RAPs and RAP support provisions, and thus be more likely to use them, and to use them more extensively.

Hypothesis 11:   More experienced lawyers will use RAPs and RAP support more often and more extensively.

Second, contrarily, more experienced lawyers may recognize that RAPs generate transaction costs that cannot be eliminated through the use of focal points and RAP support provisions, and that RAP support provisions may generate their own costs (e.g., escrow agent fees, risk of buyer opportunism, negotiation delays and potential breakdowns over their terms).

Alternative Hypothesis 11A: More experienced lawyers will use RAPs and RAP support less often and less extensively.

Third, more experienced lawyers may be more familiar with RAPs and RAP support provisions in prior deals, and thus converge more quickly and cheaply on "standard" terms as a focal point for simplifying negotiations and reducing the risk of bargaining breakdowns.

Hypothesis 12:   More experienced lawyers' RAP use and design choices will exhibit less variation.

Finally, lawyers – particularly less experienced lawyers – may respond to lawyers representing the other side of an M&A deal – particularly when they are matched against lawyers who have different levels of experience. In a mismatched lawyer negotiation, the less experienced lawyer may push back more aggressively than they might if matched against a lawyer of similar experience, both because they fear the more experienced lawyer may be trying to take advantage of their inexperience, and because they fear the client may perceive them to be less experienced. The result of such mismatches is likely to be more complexity, more variation, and more use of RAPs than would otherwise be the case.

Hypothesis 13: When less experienced lawyers are matched against more experienced lawyers in an M&A negotiation, RAPs will be more complex, more extensive, and vary more in design, than in other deals.

IV.   Sample and Summary Data

The foregoing hypotheses are tested using two datasets. One sample consists of randomly chosen control bids for US targets in 2007-2008 (the *control bid dataset*). These bids are initially drawn from Thomson Financial's M&A database, as described below, but consists primarily of hand-coded data taken from SEC filings and the relevant M&A contracts, as well as data from Compustat for publicly held companies. A second sample consists of data on the M&A experience of the law firms who worked on the control bid sample, based on their appearances in Thomson Financial's M&A database in the period 2000-2006 (the *law firm dataset*).

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a. Construction of Control Bid Dataset

The control bid dataset begins with all control M&A bids, i.e., where the bidder seeks to own at least 50% of the target, reported in Thomson as being announced in 2007 or 2008. That sample is narrowed to bids for which a bid value is included, and further narrowed to targets lacking a reported stock price in Thomson, consistent with the targets being privately held (i.e., not SEC registered), which (for the subset analyzed below) is verified by reference to SEC filings. That subset is further narrowed to eliminate bidders owning more than 20% of the target's stock, to allow a focus on arm's-length transactions. The remaining bids (n=5,613) are divided into those involving publicly held bidders (n=3,315) and privately held bidders (n=2,298), again using stock price data in Thomson as an indicator of publicly held status. Bids with no reported effective date and no reported withdrawal date (i.e., are still pending, according to Thomson) are dropped, leaving 2,743 bids.

Those bids are then reviewed to compare the ratio of target assets to bidder assets as reported by Thomson. This ratio should roughly predict the probability a given bid includes an M&A contract filed with the SEC, because SEC rules require public bidders to file all "material" contracts as an exhibit to a Form 8-K (or Form 10-Q or 10-K).[45] Bids with a ratio in excess of 20% (n=108) are then reviewed in alphabetical order, and where a deal contract is found in the SEC's EDGAR system, near in time to the reported bid announcement date, the bid is retained, and otherwise dropped.[46] Additional bids meeting the above criteria were reviewed until a sample of 60 arm's-length, resolved control bids for privately held US targets announced in 2007 and 2008 for which M&A contracts were on file with the SEC was generated.

Next, each of these private target control bids was matched with a control bid for a publicly held US target. For each private target bid, a corresponding public target bid was chosen in which the public target's industry was as similar to the private target as possible, based on SIC codes, and, where there were more than one same-industry bid from which to choose, as close as possible in bid size. Each public target's SEC filings were reviewed near in time to the bid announcement date to verify that the deal agreement was filed. The public company status of the target was verified—again, Thomson misclassifies a large number of bids as involving public targets that either never were public or had "gone dark" before the bid. Hostile and unsolicited bids were dropped (including many not so classified by Thomson) unless they resulted in an eventual deal agreement.

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[45] While the law determining "materiality" is complex, a bid involving a target with assets that exceed 20% of the bidder's assets is likely to be "material," and in any event is separately required to be disclosed. See SEC Regulation S-X, 17 C.F.R. § 249.308 (defining "significant" acquisitions). See Appendix A for the protocol for locating contracts.

[46] Six bids were dropped because no agreement could be found; two were dropped because Thomson misreported bidder ownership and were freezeout transactions, rather than arm's-length bids; and one was dropped because the target was in fact a public company.

Finally, each deal agreement in the sample was reviewed and coded twice, first by research assistants, and then by the author, with the small number of inter-coder mismatches (<5%) being reviewed again by the author. The name of each target, bidder, bid announcement date, and a link to each deal agreement are contained in Appendix B.[47] By construction, this sample is representative not of arm's-length control bids overall, nor of arm's-length control bids for US targets, but of arm's-length control bids for privately held US targets that were large relative to the size of the publicly held bidders, as well as arm's-length control bids for publicly targets of the same size and in the same industries. These constraints were necessary to generate a dataset for which M&A agreements could be found on file with the SEC, since privately held companies do not file documents with the SEC, and since even where a publicly held bidder is involved, an M&A contract will not be filed unless the related transaction is material to the bidder. Nevertheless, this dataset is (to my knowledge) the most representative random sample of M&A contracts for privately held US targets for the period that has been assembled and made publicly available.

b. Detailed Analysis of Size-Matched and Industry-Matched Sample of Control Bid Dataset

As shown in Appendix C, the two samples consist of bids that, at the median of bid size, are statistically indistinguishable. The median difference in bid size across matched pairs of bids is $5 million, roughly 7% of the median bid. More than 60% have exact four-digit SIC industry matches, nearly all are matched by one-digit SIC code, and all are in the same five-industry Fama-French classification, even when breaking out finance separately as a sixth industry. Overall, the matches appear to produce a sample in which size and industry are largely eliminated as independent sources of variation in M&A practices, leaving ownership (and other factors) as potential causes of observed variation.

c. Construction of Law Firm Dataset

The law firm dataset begins with the Thomson Financial M&A database for all bids announced in the period 2000–2006 (n=22750). Each law firm involved in any bid in that database was extracted, along with the size of the bid and the SEC status (public or private) of the target. For each law firm, the number of bids was counted, and dollar volume of those bids was summed, and then broken down by target SEC status and whether the law firm represented the target or the bidder.

In the rest of the analysis, the sums are used as empirical proxies for the M&A experience of the law firms in the regression analysis below: **BIDDER_ALL_LAW_SUM,** which is the sum of the deal value of all of the deals on which bidder's law firm worked from 2000 to 2006 as reported in Thomson, and

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[47] *See* Appendix B.

TARGET_ALL_LAW_SUM, which is the equivalent for the target's law firm.[48] Using those sums, all law firms are placed into three mutually exclusive categories:

(1) ***BIDDER_LAW_NEWBIE*** (or TARGET_LAW_NEWBIE), equal to one if the bidder's law firm was reported as having worked on less than $1 million deal value of public target deals from 2000 to 2006, representing law firms that are likely to have less M&A experience than other sample law firms;

(2) ***BIG_BIDDER_LAW*** (or BIG_TARGET_LAW), equal to one if the law firm is in the top quartile (i.e., over $290 billion of deals 2000 to 2006) of ALL_LAW_SUM, representing law firms with a great deal of M&A experience; and

(3) ***BIDDER_LAW_OTHER*** (or TARGET_LAW_OTHER), for other law firms.

Finally, a variable to measure the relative size of the law firms on a given deal was calculated, ***B_TO_T_LAWYER_RATIO***, equal to the ratio of BIDDER_ALL_LAW_SUM over TARGET_ALL_LAW_SUM (plus 0.01, to deal with target law firms with no reported deal experience).

The law firm experience measures are noisy. They consist only of M&A transactions for which Thomson includes law firm information, which is a subset of the overall M&A population. Thomson, for example, frequently omits law firm information, particularly in transactions between private companies. In addition, many M&A transactions—particularly those of a small size—are omitted from Thomson altogether. Nevertheless, the sums used are reasonable proxies for M&A experience: law firms have an incentive to inform Thomson about their involvement, since "league tables" based on this database are frequently publicized in media reports, which can be expected to generate additional business for the law firms.

d. Summary Data on Bids, Bidders, Targets, and Law Firms in Bids

Table 1 presents summary data on the M&A bids analyzed below, the companies involved in the bids, the law firms identified in the contracts related to the bids, RAPs and RAP support.

[Table 1 About Here]

As seen in Table 1, M&A transactions for US targets vary strikingly in size, ranging from very small bids (under $1 million) to mega-deals (over $20 billion). The distribution of bid sizes is skewed, with a mean bid over nine times larger than the median. The vast majority of bids (93%) are completed, with all of the uncompleted bids

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[48] The sum of deal value is used for M&A experience overall, since deals involving larger deal values are likely to attract more legal and client attention, on both sides of the deal, and justify greater investment in deal technology and learning. The count of deals is used for private target M&A experience because deal values are not reported in Thomson (or elsewhere) for the vast majority of private target deals.

involving public targets, as shown in Table 4 below. A small but substantial fraction (13%) involves a foreign bidder (i.e., they are cross-border deals). Most (77%) involve bidders headquartered in one US state buying a target headquartered in another state, and most (61%) also involve bidders and targets incorporated in different states. A sizeable number (38%) involve a target operating in a completely different industry than the bidder.

Buttressing the plausibility of the agency-cost hypotheses (11 and 12), 7% of the sample contracts contained clear errors. These errors included provisions that conflicted with one another, provisions that cross-referenced sections of the contract that did not exist, and provisions that used defined terms that were not defined in the contract. This 7% is a lower bound on errors in the contract, for two reasons. First, neither the author nor the author's research assistants attempted to find the errors – they simply emerged as a result of coding the contracts for the provisions summarized above. Second, only clear errors were coded as errors – other kinds of errors (e.g., omissions, poorly worded sentences, unnecessary ambiguities, etc.) were not counted. The 7% lower bound on clear errors is consistent with a similar error rate found incidentally in Coates 2001.

The average law firm identified in the contracts in the control bid sample worked on 354 transactions in the years 2000 to 2006 involving $220 billion.[49] The two law firms with the most appearances in the control bid dataset were Skadden (eight deals in the control bid dataset), which worked on 816 deals reported in Thomson for 2000 to 2006 involving over $800 billion, and Latham (seven deals in the control bid dataset), which worked on 812 deals in Thomson for 2000 to 2006 involving over $275 billion. The distribution of M&A experience, however, is highly skewed: averages are typically nine to ten times larger than medians, reflecting a small number of law firms that handle a large volume of M&A transactions. Also buttressing the law-firm-related hypotheses is the fact that in fully one fourth of the control bid sample one of the companies relied on either no law firm or a solo practitioner or a law firm that had worked on less than $1 million worth of public target deals from 2000 to 2006.

In eleven deals (9%), one of the parties identified no outside law firm in the M&A contract, including seven bidders (6%) and four targets (3%). In addition, a sizeable share of deals in the sample designated solo practitioners (seven deals, or 6%), or designated law firms that had little or *no* reported deal experience in the 2000–2006 period: 16% of the targets and 12% of the bidders (this is exclusive of sample companies that did not designate an outside law firm). Because Thomson's database is far from complete, these data do not mean that the law firms actually had only that little M&A experience over that period. But these firms are likely to have had significantly less experience than firms at the opposite end of the M&A experience spectrum, such as Skadden and Latham. Finally, contracts involving such "newbie" law firms had twice the error rate as that of other sample contracts, and contracts involving law firms in the top quartile of deal experience contained none of the clear errors found – again, consistent with the theory behind the law-firm-hypotheses.

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[49] See Appendix D for a list of the law firms and their number of appearances in the control bid dataset.

Table 1 also shows that just over a majority (53%) of the sample deals use at least one of the major types of RAPs. The most common type of RAP is the indemnification by the target of the bidder (48% of the sample), followed by price adjustment clauses (37%). Earnouts are the least common, with only 8% of sample bids including them. RAP support is also common, with just over a third of the sample including at least one type of RAP support. The most common type is the escrow (27% of the sample), followed by seller financing (12%) and holdbacks (9%). Total non-zero RAP support as a percent of bid value averages 21%, with a median of 10%.

e.   Summary Data Showing Law Firm Matching

In each deal, there is, of course, a lawyer on each side of the negotiation. One preliminary question is the extent to which lawyers have different or similar levels of experience relative to the lawyer on the other side of the table. That is, are the law firms are "matched" with each other. This could be because companies entering into a deal choose lawyers in part based on the choice made by the counterparty. Alternatively, matching might occur because the same factors that lead one company to choose a law firm with a given level of experience also lead the other company to make a similar choice.

Table 2 presents summary data on this question. Table 2 breaks down sample law firms into "newbies," defined as above, "top quartile," defined as the law firms with deal experience sufficient to the put them in the 75th percentile or higher of the in the law firm sample, and, in-between, other law firms.

[Table 2 about Here]

Table 2 shows clear evidence of substantial but imperfect "matching" of law firms. The lower left and the upper right cells – in which newbie law firms are sitting across the table from top quartile law firms, or a two-category mismatch – contain only one deal. If law firms did not match, there would be roughly 22% of the sample in those cells, or 26 deals. The cells running diagonally from top left to bottom right – in which law firms are matched negotiate with law firms in the same category – contain 62 deals, or more than half of the sample. If law firms did not match by category, there would be roughly a third of the sample in that diagonal, or 40 deals. The remaining cells, in which there is a one-category mismatch, contain the remainder – which, despite the general fact of matching, consists of a non-trivial number of deals – 57 deals, or almost half of the sample. The correlation between these two categorizations of law firms (bidder and target) is large: equal to 0.41 (p<0.001).

Table 2 also shows matching by deal size. Larger deals, not surprisingly, attract law firms with more deal experience. The average deal size for the 28 deals between newbie law firms was $28 million, whereas the average deal size for the 13 deals between top quartile law firms was $3 billion, and the 90 deals between law firm in neither of these categories averaged $90 million. The inclusion of one of the top quartile law firms

is correlated with a large deal, even when that firm is matched against a non-top-quartile law firm: the 33 deals in those mixed categories average $673 million.

V.   Use of RAPs in M&A Contracts

     a. Summary Data on Overall Incidence of RAPs

Table 3 presents summary data on the distribution of the three types of RAPs studied in this paper – indemnities, price adjustment clauses and earn-outs. Panel A presents the absolute numbers of those RAPs, both in the full sample and in the private target subsample. Panel B presents correlation coefficients among the three types of RAPs, for both the full sample and private target subsample, and the statistical significance of the pairwise correlations.

[Table 3 About Here]

Table 3 shows that earn-outs are the least common means of sharing risk. The most common method is an indemnity, followed by price adjustment clauses. The most common combination of these three RAPs is a contract that included both an indemnity and price adjustment clause, but not an earn-out. The second most common combination is an indemnity on its own. A strong and statistically significant correlation exists between indemnities and price adjustments, but no such correlation exists between either of those clauses and earn-outs.

To simplify empirical testing and improve statistical power given the relatively limited sample size, a composite index RAPs is developed. A categorical variable is created, equal to 1 if one risk-allocation clause is used, two if two are used, etc. RAPs for this purpose include price adjustment clauses, earn-outs, indemnification clauses (i.e., target indemnifying bidder), the use of "RAP support," i.e., seller financing, escrows and holdbacks. Table 5 presents the distribution of RAPs in the sample, as well as in various subsamples of interest.

[Table 4 About Here]

Consistent with hypothesis 1, target-owners commonly retain pre-deal risks. However, nearly half (47%) employ none of the RAPs included in Table 4. Even if some target owners have little information not possessed by the buyer, it seems unlikely on a priori grounds that none of the owners in nearly half of the targets of all M&A transactions do not have more information about at least certain kinds of pre-deal risks than do buyers. Thus, while the data are consistent with hypothesis 1, they also suggest a great deal more is going on than risk being allocated in response to asymmetric information.

The other results in Table 4 are generally consistent with risk allocation theory. Consistent with hypothesis 3, cross-industry (*diversifying*) deals are more likely to include RAPs than other deals (Kruskal-Wallis (**KW**) test of equality of proportions, p-

value < 0.0001, t-test of means, p-value < 0.03).[50] Consistent with hypothesis 7, deals for targets in industries with higher than median levels of quarterly change in firm-level current liabilities are also more likely to include RAPs (KW p-value <0.05, t-test p-value <0.05).[51]

However, inconsistent with hypothesis 6, owners of targets that are small relative to bidders are *more* (not less) likely to retain risk (KW p-value <0.0001, t-test p-value < 0.0001).   One possible explanation of this last finding is that, consistent with hypotheses 4 and 4A, RAPs are much more prevalent in bids for private (non-SEC-registered) than public (SEC-registered) targets, which by construction are equally common in the overall sample (KW p-value <0.0001, t-test p-value <0.00001). This suggests another preliminary inquiry – whether RAP and RAP support incidence – or other potential predictors of their use – vary significantly across target ownership and/or SEC status.

> b. Summary Data on RAPs in Bids for SEC-registered vs. non-SEC-registered targets

To more finely examine the potential effects of SEC registration (and the ownership dispersion with which it is correlated), as well as to assess potential cross-correlations among ownership dispersion and other variables to be tested, Table 5 compares SEC-registered ("public") and non-SEC-registered ("private") target M&A deals on a number of dimensions, including the nature of the bids and use of specific RAPs. In most rows, bids for public and private targets are strongly different; p-values of t-tests (or, where appropriate, Wilcoxon tests or F-tests) are highly statistically significant.

[Table 5 About Here]

Specifically, as with prior research,[52] public target bids are more likely to be diversifying bids, whether measured at the 4-digit SIC code level, or at the 1-digit level, and they are also more likely to be cross-border bids. These correlations make it important to include controls for SEC registration in subsequent empirical tests.

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[50] In untabulated results, *cross-country* deals are less likely to include RAPs than purely domestic deals (KW p-value <0.0014, t-test p-value <0.002). Consistent with findings of "home bias" in other settings, see French & Poterba 1991; Lewis 1999; Sarkissian & Schill 2004, SEC-registered targets, which are likely to have a higher profile for potential bidders and are more likely to generate interest from bidders farther afield, are more likely to be subject to cross-border bids (22% vs. 2%). However, there is only one cross-border deal for a non-SEC-registered target in this sample, making it impossible to disentangle the relationships between these two variables, on the one hand, with RAPs, on the other hand, leaving that task for future research.

[51] By contrast, there is no significant difference between RAP use across industries with higher than median levels of *total* liability quarterly changes. The contrast between total liability and current liability variance and RAP use is consistent with accounting research that has based on the view that current accounts are the accounts in which discretionary and potentially misleading accruals are likely. E.g., Qiang Kang, Qiao Liu and Rong Qi, Predicting Stock Market Returns with Aggregate Discretionary Accruals, 48 J. Acct'g Res. 815-858 (2010) (focusing on accruals in current accounts).

[52] Capron & Shen 2007; Ragozzino & Reuer 2009.

Consistent with hypotheses 1 and 2, earn-outs – which involve ***post-deal*** risk, about which target-owners will have less information than pre-deal risks – are less common (9% of the whole sample) than other kinds of risk sharing, which involve (or facilitate) ***pre-deal*** risks. Price adjustments are found in 37% of the overall sample, and indemnities in 47%. This evidence is consistent with theories that emphasize moral hazard facing insureds (the equivalent of buyers for these RAPs), which increase the cost of risk-allocation to the insurer. Of course, deal contracts can mitigate this moral hazard by providing some degree of control to the target over post-closing operations. The relative infrequency of earn-outs, which suggests that these mitigations are viewed as highly imperfect in practice, is also consistent with transaction costs theory.

Consistent with hypothesis 4A, all types of RAPs, including earn-outs, are more common in bids for non-SEC-registered targets than SEC-registered targets. Price adjustments are common (67%) in bids for non-SEC-registered targets, but uncommon in bids for SEC-registered targets (7%), and clauses providing for indemnification of bidders by non-SEC-registered targets are nearly ubiquitous (87%), but are uncommon in bids for SEC-registered targets (7%). Nearly all (92%) of the non-SEC-registered-target bids use at least one RAP, while few (13%) of the SEC-registered-target bids use even one type of RAP.

Likewise, RAP support provisions are also common in deals for non-SEC-registered targets, but largely absent in deals for SEC-registered targets. Debt consideration (seller financing) is almost never used in SEC-registered-target bids (2%), but is fairly common in non-SEC-registered-target bids (22%), and escrows are used in a majority of non-SEC-registered-target bids (55%), and holdbacks in 8%, but neither is used at all in the SEC-registered-target subsample.[53]

The incidence of RAPs for non-SEC-registered targets in Table 5 can be compared on some dimensions with data in the ABA's periodic surveys of non-SEC-registered deals.[54] For a sample of deals in 2008, the ABA reported 76% of deals studied (n=106) included purchase price adjustments, similar to the 67% reported here. They also reported that 29% included earn-outs, higher than the 15% reported here, and higher than the incidence found in prior academic studies of earnouts.[55]

In the case of earn-outs, some of the difference may be attributable to a time trend in the use of earn-outs. Most of the deals studied here occurred in 2007, while the ABA

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[53] These differences are consistent with the design of the ABA studies, see note 19 supra, in which the studies of public targets do not report on earnouts, price adjustment clauses or indemnification rights running to the buyer, whereas the studies of the private targets do.

[54] See note 19 supra. As noted in note 20 supra, the ABA studies do not report on RAP use in deals for SEC-registered targets, even though (see Table 5), such targets do use RAPs, albeit many fewer than for non-SEC-registered targets.

[55] Cain et al., supra note 17, report finding earnouts in 4% of all reported deals in Thomson's M&A database 1994-2003; Datar et al., supra note 17, report finding earnouts in 4% in a sample of deals 1996-1997; Kohers and Ang, supra note 17, find earnouts in 6% of deals 1984 -1996; and Quinn, supra note 17, finds earnouts in 3% of deals 2006-2009. These prior studies included both public and private targets.

sample is from 2008 (the ABA studies deals in even-numbered years).[56] From 2006 to 2010, earn-out use reported by the ABA doubled from 19% to 38%, consistent with a conjecture that the appeal of earn-outs increases as uncertainty (risk) in the economic and financial environment increases.

Another partial explanation for the difference in earn-outs is bid size: earn-outs are less common in larger deals,[57] and while the ABA sample and the sample studied here have similar median bid values of $67 and $62 million, respectively, the ABA sample included bids between $25 million and $500 million, with an average of $98 million, while this sample is includes deals ranging up to $20 billion, and has an average of $555 million. The ABA reported that 81% of its sample included a holdbacks or escrow (the ABA aggregates this two forms of support, and does not report on seller financing), compared 63% in this sample. This, too, may attributable to deal size, as RAP support is less common in larger non-SEC-registered target deals, being found in 9% of this sample's above-median deals, versus only 19% of those below the median.

c. Law firm experience and the use of RAPs

One last preliminary analysis is whether RAP incidence – and variation in RAP incidence – varies with law firm experience in the sample. Table 6 presents data on that question.

[Table 6 about Here]

Table 6 shows that, inconsistent with hypothesis 11, but consistent with alternative hypothesis 11A, more experienced lawyers are less (not more) likely to use RAPs in their deals. The average number of RAPs used in deals involving top quartile bidder law firms is 0.63, which is about half that used in deals involving newbie bidder law firms, and less than half that used in deals involving other law firms; no RAPs are included in the median deal involving top quartile bidder law firms. Both a t-test of means and a ranksum test of medians show the bidder law firm differences are statistically significant (p<0.01 and p<0.02, respectively). A similar if less pronounced gradient can be seen across target law firms: more experienced target law firms produced deal contracts with fewer RAPs than less experienced law firms.

Similarly, consistent with hypothesis 12, the variation in RAP incidence is lower in deals involving top-quartile bidder law firms. The standard deviation for the bottom row of Table 6 is 0.9; for newbie bidder law firms, in the top row, the average standard deviation is 1.3; and for other law firms, in the middle row, it is 1.5. A similar gradient is evident across the columns, as more target law firm experience also reduces variation in RAP incidence.

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[56] See ABA studies, supra note 19.

[57] In an untabulated regression, the odds ratio on logged bid size is 0.55 (p<.0032), and the share of non-SEC-registered bids with earn-outs is 21% for bids below the median sample bid of $67 million and only 5% for bids above the median. Cain et al. supra note 17 also report a negative relationship between earnouts and target size.

d. Models of the Incidence of RAPs

To further test the above findings, and to disentangle the effects of information asymmetries (arising from SEC registration, cross-border, and cross-industry deals), differences in relative risk aversion (arising from target, bidder and bid size), and enforcement costs (arising from ownership dispersion), we turn to multivariate analysis. Table 7 presents simple ordered logistic models of the incidence of RAPs in the pooled sample.

[Table 7 About Here]

The top panel (Panel A) of Table 7 presents models of RAP incidence that focus on proxies for relative risk-aversion, asymmetric information and enforcement costs. In the first model, the risk in (i.e., the variation of) current liabilities of SEC-registered companies in the target's industry (*RISKY_CUR_LIAB*) is included as the independent variable. In the second model, a control variable (*FINANCE*) is introduced to reflect the possibility that the risk of financial institutions, which depend more heavily on short-term funding, may play a fundamentally different role than in other industries. In the third model, target SEC registration (*SEC_TARGET*) is added to test the joint effects of ownership dispersion and SEC-mandated information and auditing. In the final model, the sample is limited to the 68 firms that have more than 10 record holders, and the logged number of the target's record holders of common shares (*LN_T_CSHR*) is added to distinguish between the effects of ownership dispersion from the information effects of SEC registration (controlled for by SEC_TARGET) and insider-target-owners with more information than buyers (eliminated by focusing only on targets with more than 10 record holders, where it is implausible that all target owners would have a strong informational advantage over buyers.

In each of the models, RISKY_CUR_LIAB is significantly positively correlated with the use of RAPs, and in fact that size and statistical significance of that relationship grows as the model includes more controls. In model (3), SEC registration has a strong negative relationship with RAP incidence, consistent with hypothesis 4 and alternative hypothesis 4A. In model (4), however, including LN_T_CSHR cuts the relationship between SEC_TARGET and RAP use – it falls to the statistical equivalent of zero – while LN_T_CSHR itself is strongly negative related to RAP use.

These results suggest that, consistent with hypothesis 7, relative risk-aversion is an important factor shaping the use of RAPs, and that, consistent with alternative hypothesis 4A, the power of enforcement costs is at least as great, and possibly greater, in explaining the pattern of RAP use than asymmetric information. If the sole factor in determining RAPs was asymmetric information, as in hypothesis 4, then one would not expect that dispersion would continue to correlate with RAP incidence once dispersion reached the level (here, proxied by 10 owners) that owners were unlikely to be actively involved in management, and where SEC registration was not involved.

Panel B of Table 7 presents additional models that focus on additional potential explanations for variation in RAP incidence. In each case, SEC_TARGET is included as a control (for the combined effect of information / audit requirements and enforcement costs associated with ownership dispersion). In model (5), the explanatory variable is whether the law firm representing the bidder is in the top decile of deal experience, by deal volume (**BIDDER_BIG_LAW**). In model (6), the explanatory variable is the ratio of the target's assets to the bidder's assets (**T_AT_OVER_B_AT**). In model (7), the explanatory variable is whether the two companies involved are in the same industry (based on the 4-digit SIC code), i.e., whether the bid is a non-diversifying bid (**NON_DIVERS_SIC4**). Finally, model (8) combines the variables included in model (4) from Panel A with each of the variables included in models (5) through (7), in the subsample of firms for which information on the target's assets and number of shareholders is available.

The proxy for sophisticated bidder law firms enters strongly in both models (5) and (8). Consistent with alternative hypothesis 11A, and the data presented in Part V.c above, but inconsistent with hypothesis 11, more experienced bidder law firms are associated with fewer RAPs, controlling for other factors. In model (6), the proxy for relative risk-aversion based on relative company size is not strongly related to RAP incidence, and in model (8), the relationship is negative – a target that is larger than the bidder is actually less and not more likely to retain risk through RAPs – inconsistent with hypothesis 5. The industry proxy for asymmetric information – non-diversifying bids – is negatively associated with RAP use in model (7), results that are similar but weaker in model (8) – weakly consistent with hypothesis 3.

In unreported models, the results in Table 7 are robust to the inclusion of Fama six-category industry effects and logged bid size as controls, and if financial firms are dropped entirely. Qualitatively similar results are also obtained using logistic models with an outcome variable equal to one if any RAP is present and zero if none is present. The explanatory power of the models is substantial, given the small number of right-hand variables. A simple logistic model in which use of any RAP is predicted using the explanatory variables included in model (8) correctly classifies 90.2% of the subsample of bids with all relevant data items for whether they use RAP clauses or not (n=51). A similar logistic model that is limited to just BIDDER_BIG_LAW, NON_DIVERS_SIC4, SEC_TARGET, and RISKY_CUR_LIAB correctly classifies 89% of the sample bids on whether they will include a RAP.

Finally, in untabulated regressions, the determinants of each of the major types of RAPs were examined separately, in logistic models. The results on TINDEM (a dummy set to one if the deal included an indemnity) are very similar to those in Table 7. The results on PRICE_ADJ (a dummy set to one if the deal include a price adjustment clause) are qualitatively similar (odds ratios above or below one in the same pattern as in Table 7), but less precisely estimated, such that the only right-hand variable with a statistically significant relationship at the 95% confidence level is PRICE_ADJ was LN_T_CSHR. Finally, the results on EARN_OUT (a dummy set to one if the deal included an earn-out) were also qualitatively similar, except that when the model was augmented with

HIGH_TECH (a dummy set to one for targets in the Fama "high tech" category), it was strongly positive (p<0.05), which was not the case if HIGH_TECH was added to Table 7 or the models of indemnities and price adjustment clauses. This contrast, which is consistent with prior research on earn-outs,[58] is consistent with hypothesis 8.

VI. Design of RAPs in M&A Contracts

a. Summary data on RAP design

In this Part, the analysis turns to RAP design – the specific terms included within individual RAPs. Table 8 presents data on RAP design in the sample. The table breaks out details on each of the three major types of RAPs (indemnities, price adjustments and earn-outs), as well as the three major types of RAP support (escrows, holdbacks, and seller financing).

[Table 8 about here]

1. Indemnity design

Together, the data on indemnity use and design show that most deals for non-SEC-registered targets include risk-***sharing***, rather than allocating all risk to either buyer or target-owners, consistent with hypothesis 2. Table 5 showed that 87% impose some risk on the target-owners through an indemnity. Table 8 shows that of those, nearly all impose limits on three dimensions: on both the upper end (90%) of target-owner obligations, on the lower end (90%), and by limiting how long the obligations survive. Thus, the bidder also bears risk on the indemnified matters.

On the high end of potential indemnification obligations, 90% impose a cap, which is set equal to the bid value in 8% of deals with caps, and 92% (i.e., .9 x .92 = 83% of deals with indemnities) below bid value.[59] The mean (median) cap is 31% (15%) of bid value – so that in most deals with target indemnities, the bidder accepts the possibility that the target-owners will get to keep more than half the purchase price even if target representations turn out to be untrue (other than due to fraud, as discussed further below).[60] A priori, this element of RAP design seems designed to respond to some combination of theories of asymmetric information and relative risk aversion, to be tested below.

[Insert Figure 2 About Here]

Figure 2 also shows that indemnity caps are substantially smaller than the maximum payout possible under earnouts in the sample. This might suggest that – even

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[58] See sources in 17 supra.

[59] This compares to 92% of a sample of private target deals in 2007 with caps on indemnities, and 86% of deals with caps below the purchase price, in the ABA studies, supra note 19.

[60] This compares to means (medians) caps of 22% (11%) in the ABA 2007 private target deal sample, supra, note 19.

though Table 5 showed that earnouts were much less common than indemnities – perhaps they have similar or greater economic significance on an expected basis. However, Brian Quinn has shown that a third of earnouts do not produce any payments in the two years following deal announcements, and of those that do produce payouts, the payments were substantially below the maximum possible payout (42% in the first year, 68% in the second year). Together, his reported payout data suggest that the actual expected payout from an earnout is roughly half that of the nominal maximum payout. Adjusted in this way, earnouts are roughly similar in size to the indemnity caps in this sample. Indemnity payouts, of course, may not always reach the negotiated caps. Nevertheless, this comparison suggests that the economic significance of indemnities and earnouts is likely to be similar in overall expected risk exposure for target-owners, making the much more common indemnities of greater economic significance in aggregate.

On the low end of possible indemnification obligations, Table 8 shows that 26% of deals include a "basket" and 74% include a "deductible."[61] The mean (median) basket or deductible is roughly 1% (1%) of bid value.[62] Most deals (92%) also include a "threshold" on the size of individual claims that count towards the indemnity, equal to a mean (median) of 0.03% (0.02%) of bid value.[63] Of the bids with baskets/deductibles, all were either stated in terms of round $1000 units (68%) or whole or half percentage points of bid value (32%), and all of the thresholds were stated in round $1000 units. A priori, these elements of RAP design seem designed to minimize transaction costs, by using focal points to reduce negotiation costs, and by eliminating the right of bidders to seek indemnification (and thus the possibility of disputes) for relatively minor claims, whether considered individually or in the aggregate, to be tested below.

On survival periods, Table 8 shows that the mean (median) period during which claims may be made under indemnification clauses is 15 months (one year), considerably shorter than the relevant statutes of limitations for most such claims. In addition, survival periods do not take on a smooth distribution within the sample. Rather, as shown in Figure 3, and consistent with hypothesis 9 suggesting that focal points will be used to minimize transaction costs, rather than a theoretically optimal survival period, they are much more commonly chosen to equal whole units of calendar time. One year is the modal survival period,[64] followed by eighteen months, followed by two years, followed by fifteen months. Those four survival periods account for 88% of the subsample of deals with indemnities.

[Insert Figure 3 about here]

These elements of indemnification design are only a subset of the many choices that deal contracts typically reflect on how indemnities allocate risk. As illustrated by the

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[61] This compares to 36% with baskets and 47% with deductibles in the ABA 2007 private target sample, supra note 19.

[62] This compares to 0.8% (0.7%) mean deductibles in the ABA 2007 private target sample, supra note 19.

[63] In contrast, only 23% of deals in the ABA 2007 private target sample, supra note 19, had thresholds.

[64] In the ABA 2007 private target sample, supra note 19, the modal survival period is 18 months. Survival periods in that sample also cluster by half-year intervals.

example in Appendix E, typical indemnification provisions also include careful specifications of the precise risks being allocated, usually linked to losses arising from specified breaches of representations and/or covenants. Also typically covered are third-party claims arising from the business prior to the closing (except with respect to liabilities expressly or impliedly assumed by the buyer by virtue of the deal structure).

Indemnity clauses often run to several single-spaced pages, often define several terms for use in the indemnity, and usually contain a number of other provisions not analyzed in this paper. For example, survival periods often vary – the survival period data presented above representing only the modal survival period for the majority of general representations. Other, usually longer, survival periods applying for subsets of specific representations, often identified as "fundamental" or "core" representations, relating to ownership of the assets or stock being transferred, authority to enter into the transaction, and enforceability of the deal agreement, as in the example in Appendix E. Tax liabilities are often treated separately in several respects in the indemnities. Caps, baskets, deductibles, and thresholds often contain exceptions, or vary with the nature of the liability. Provisions are often included attempting to integrate price adjustment clauses with the effects of the indemnities (e.g., to prevent double recoveries), to define "losses" broadly, to eliminate "double counting" exceptions for materiality from also being excluded from thresholds or baskets, to exclude fraud from indemnity caps and baskets, and to integrate the indemnity with other remedies that might otherwise be available under default law. If the target has multiple owners, the indemnity may specify whether they will have joint and several liability for breaches, or be responsible for pro rata losses only.

2. Price-adjustment design

Table 5 showed that, as with indemnities, price-adjustment clauses are commonly but not universally (67%) used in deals for non-SEC-registered targets to allocate misvaluation and/or value-shift risks to the target-owners. Table 8 shows that their design exhibits significant complexity and variation within this sample. The variation occurs at least two fundamental dimensions.

First, the metric(s) used to adjust the price vary. Three metrics are common, if not universal: in 59% of deals with price adjustments, the adjustment is based on changes in the target's working capital; in 36%, it is based on changes in debt; and in 27% it is based on changes in the cash.[65] However, in most (59%), other metrics are used, sometimes specified in schedules that are not publicly disclosed.[66] In 57% of deals,

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[65] These data are similar to those in the ABA studies, supra note 19, which find (for a sample of deals in 2008) working capital is used 77%, debt 29% and cash 19% of the time.

[66] Examples of "other" metrics include: specified environmental losses or liabilities; deviations from specified accounts, such as a formula-based allowance for loan losses; the (non)-occurrence of a specified value-contingent event, such as an acquisition or disposition; capital expenditures above a specified amount; unusual dividends to or from the company; changes in the company's number of customers; interest on other components of the adjustment metric; bonus or change in control payments to target employees; guarantees of related party debt; and capital contributions to partly owned subsidiaries.

multiple metrics are used, with varying weights.[67] The average number of metrics is 3.4, the median is two; 27% only use one; the maximum is twelve.[68] Second, sample contracts specify methods of how the metric(s) will be calculated. A plurality (39%) specify an idiosyncratic method in detail, sometimes not disclosed publicly, while 16% specify generally accepted accounting principles (**GAAP**), and 36% are more specific and specify GAAP consistent with the target's past practice.[69]

The two sample price-adjustment clauses contained in Appendix E illustrate this variation in content and complexity. In the first, more-typical example, the adjustment is a function of changes in working capital through the closing date of the deal from baseline numbers set out in the agreement. Working capital is effectively defined to equal changes in inventory (copper, in this example), accounts payable, accounts receivable, and cash from specified customers.   Rather than relying on GAAP or past practice to define the relevant metric, as more typical for such clauses, this first example specifies in detail the benchmarks and the accounts. In addition, the purchase price is separately adjusted to reflect the target's total debt at closing, and specified transaction-related expenses.

This first example can be characterized as modestly complex – at neither extreme of complexity within this sample. The adjustment reflects multiple metrics, takes up more than two pages of single-spaced 10-point type, not counting relevant exhibits and other provisions cross-referenced in the agreement, and uses more than a dozen specially defined terms. Both law firms involved in the deal were "middling" law firms in the three-rank categorization reflected in Tables 2, 8 and 9. Fredrikson & Byron (for the target) is reported in Thomson as having worked on eleven deals involving less than $1 billion of deal consideration from 2000 to 2006, and Mayer Brown Rowe & Maw (for the bidder) is reported on 339 deals involving $72 billion in that period – many deals, but not enough deal volume to put it in the top quartile. The deal, likewise, is moderately sized, at $213 million, falling in the third quartile of bid values in the sample.

The second sample price-adjustment clause in Appendix E is simpler. It uses a single metric (cash). The total text takes up roughly half a page, and uses two defined terms (Balance Sheet and Specified Cash). Like the prior example (but unlike most such clauses), the agreement does not refer explicitly to GAAP or past practice for purposes of determining the relevant amounts, although by using terms such as "cash equivalents" it implicitly builds in accounting practices and customs. Both law firms involved (Ropes and Gray, for the target, and Shearman & Sterling, for the bidder) are in the top quartile of law firm experience based on deal volume in Thomson 2000-2006, and the bid value ($2 billion) is also in the top quartile for the sample. The comparison of this example with the prior example is suggestive: less, for more experienced lawyers, seems to be

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[67] This compares to 38% using multiple metrics in the ABA sample, supra note 19.

[68] There is some arbitrariness in these statistics: in some deals, components of one metric are broken out separately and stated with some specificity. Nevertheless, the statistics capture the general tendencies of variation and complexity.

[69] This compares to 24% using GAAP, 39% using GAAP consistent with past practice, and 30% using other methods in the ABA sample, supra note 19.

more, when it comes to the design of price-adjustment clauses, consistent with alternative hypothesis 11A.

Looking more carefully at the data, the relationship between law firm experience and price adjustment complexity appears strongest in a particular subset of deals – the most complex are those that involve (a) no top-quartile law firms and (b) a mismatch between the target and bidder law firms. In other words, in deals in which newbie firms are matched against "middling" law firms (i.e., those that are neither newbies or top-quartile in reported M&A experience), the complexity of the price adjustment clauses (as measured by the number of metrics) is highest. These non-big-law-mismatch deals involve an average (median) of 6 (5) price adjustment metrics, as compared to an average (median) of 3 (2) metrics for non-big-law-match deals, and 3 (2) metrics for deals involving top-quartile law firms. Despite the relatively small subsample available for testing differences are statistically significant ($p<0.05$ in both a t-test of means with unequal variance and a ranksum test of medians). More rigorous tests of these law firm effects are taken up below.

The sample data do not allow precise estimation of the economic significance of the price adjustment clauses. As a rough estimate of a lower bound on their economic significance, however, a subsample ($n=10$) of price adjustment clauses was reviewed in detail. Each target was matched by industry (using 2-digit SIC codes) with available firms in Compustat. Where metrics used in the sample price adjustment clause could be matched against data for publicly held companies in Compustat, such as for metrics based on or equivalent to standard accounts – specifically, for cash, debt, and working capital – a range of plausible price adjustments related to those metrics was estimated for each of the targets, using the 25th percentile and 75th percentile of averaged quarterly changes over the period 2001 to 2006 for all matched firms in Compustat. Quarterly changes were used because the sample deals took roughly 45 days from signing to completion, and a typical baseline balance sheet in the price adjustment clauses was dated an average of 35 days prior to the signing, resulting a typical price adjustment period of roughly 80 days.

Based on this limited sample and this admittedly crude set of assumptions, the typical price adjustment for deals in this sample arising just from working capital, cash and debt would range from -5% to +5% of bid value. This -5-to-+5% range represents a plausible lower bound on expected price adjustments, because these are derived from only three of the many metrics used in the sample price adjustment clauses. As an upper bound, there are reported court decisions addressing disputes over such clauses in which the disputed price adjustment fell between zero and +54% of bid value (depending on which party one believes), -66% and +24% of bid value, and (in one case where the adjustment was found by the trial court) 22% of bid value.[70] These ranges are plausible

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[70] See In re Westmoreland Coal Co. v. Entech, Inc., 100 N.Y.S.2d 352 (N.Y. Ct. of App. 2003) (claimed adjustment of $74 million, bid value of $138 million); Severstal US Holdings, LLC v. RG Steel, LLC, 2012 U.S. Dist. LEXIS 73327 (May 25, 2012) (S.D.N.Y. claimed adjustments ranging from negative $83 million to positive $29 million, bid value of $125 million); Etrade Financial Corp. v. Deutsche Bank AG, 631 F. Supp. 2d 313 (S.D.N.Y. 2009) (trial court finds adjustment of $11 million required, bid value $49 million).

upper bounds, because these stimulated extended litigation, whereas most adjustments (even those that generate disputes) are likely not large enough to make litigation cost-justified. If one splits the difference between the 5% estimated lower bound and the average (24%) of these reported decisions (splitting the difference where the parties disagreed) produces a rough overall estimate of 15% of bid value, reflected for reference on Figure 2. Combined with the frequency with which price adjustment clauses are included in M&A agreements for non-SEC-registered companies, this rough estimate suggests that, as with indemnities, price adjustments are of comparable or greater aggregate economic than earn-outs.

3. Earn-out design

Table 5 shows that earn-outs are the least common method of allocating risk – only nine earn-outs were found in this sample, representing 15% of the non-SEC-registered targets. As a result, the summary data in Table 8 are likely to be less representative of earn-outs generally than the data on price adjustments and indemnities. Still, it is striking how large the potential payments reflected by earn-outs might be – averaging 72% of deal consideration and 54% at the median – and that earn-outs, as with indemnities, are relatively short in duration – with a mean of 17 months and a majority lasting a year or less.[71] As with indemnities, and consistent with hypothesis 9, earn-outs rely on round-numbered time periods, with all of the sample earn-outs lasting for a multiple of six months.

Earn-outs are more varied in their details than price adjustments or indemnities, and they are equally complex, as illustrated by the example in Appendix E. That earn-out is based on earnings before income taxes, depreciation and amortization (***EBITDA***), subject to ten separate adjustments. The payout represents a multiple (9x) of the excess over 10% of growth in EBITDA from the year of the transaction to the following year, subject to a cap of $40 million. It could be paid (at the target owners' election) in cash or common stock of the buyer's parent, subject to any necessary vote of the parent's shareholders. Payment might be accelerated in the event of a change of control of the buyer.

4. Summary data on RAP support design

Finally, Table 5 shows that RAP support is common – two thirds of the non-SEC-registered targets agree to take some of the deal price on a delayed basis, which facilitates the ability of the buyer to recover under price adjustments and indemnities. Although in principle RAP support provisions might be used to minimize enforcement costs of any provision of any M&A agreement, they are almost exclusively used in deals that contain

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[71] Compare Cain et al. supra note 17, who report in a large sample of earn-outs 1994 to 2003 an average maximum earn-out payout of 33% and 38% at the median, and report a mean (median) earn-out period of 2.6 (2) years, and the ABA 2007 private target sample, supra note 19, who report more than 66% of earn-outs had earn-out periods of greater than 24 months. These differences are likely due to different time periods (for Cain et al.) and differently sized deals or sample selection methods (for the ABA study). See discussion accompanying note 36 supra on the time trend in the ABA sample.

one of the three types of RAPs studied here: 64% of deals with RAPs also include one or more types of RAP support, while only one deal (1%) without RAPs includes RAP support, and the type is debt consideration (seller financing), consistent with the fact that some bidders use seller financing for reasons other than to reduce contract enforcement costs.

The size of RAP support is not always calculable from public data – some holdbacks and escrows were specified in documents not filed publicly. Of the 53 deals where the data was public, Figure 2 (derived from Table 8) shows that the more common escrows (n=34) average 12% of bid value when they are used,[72] while the less common holdbacks (n=5) when present average 18% and debt consideration (n=14) averages 27% when used, with a similar ranking involving lower percentages at the median. More than one type of support was found in 23% (n=9) of deals involving any support. When used, total support (where data was public) as a percentage of bid value was 21% on average, and 10% at the median – support was generally smaller than the maximum value of earn-outs, but still a significant portion of the deal price.

b. RAP design and law firm experience

Table 9 presents data on the distribution of indemnity caps across law firm experience, similar to Table 6. It shows that, consistent with Alternative Hypothesis 11A, more experienced law firms enter into deals with less risk retention by target-owners (i.e., lower caps): 11% of bid value, on average, in the lower right cell, in which top quartile law firms negotiate against top quartile law firms, in contrast with each of the other cells in the table, which are higher. In addition, consistent with Hypothesis 12, the variation of caps in that cell is also among the lowest in the table, at 7.9 compared with 30.1 for deals involving middling law firms negotiating with middling law firm, or 9.1 for newbie law firms negotiating with newbie law firms. Finally, consistent with Hypothesis 13, the largest caps – and thus the greatest amount of risk retention by target-owners, occurs in the off-diagonal cells involving newbies negotiating against middling law firms – 67 and 40, which are the highest values in the table – and those cells also reflect the greatest degree of variation in the table. The next subpart of the paper tests whether these differences persist in the face of controls for deal size and other factors that might influence RAP design.

c. Models of RAP design

To further test the above findings, and to disentangle the effects of law firm exprience from other plausible determinants of RAP and RAP support design, we return to multivariate analysis. Table 10 presents simple models of different elements of the design of RAPs in different subsamples that include different types of RAPs. The focus, reflecting the summary data in Tables 3-5, is on indemnities and price adjustments, rather than earn-outs, which have previously been the focus of similar analysis by others.[73]

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[72] This compares to 11% for the combined escrows and holdbacks reported for the ABA 2007 private target sample, supra note 19. The ABA studies do not report on debt consideration.

[73] Cain et al., supra note 17.

In each model, the explanatory variables consist of LN_BIDVALUE – the logged value of the bid in millions, a proxy for the total amount of deal risk; B_TO_T_LAWYER_RATIO – the ratio of the bidder's law firm's deal volume in Thomson's M&A database for 2000-2006 to the target's deal volume, a proxy for the dual effects of law firm experience on its own and the effects of law firm mismatches, as reflected in Hypotheses 12, 12A and 13; and T_AT_OVER_B_AT – the ratio of the target's assets to the bidder's assets, a proxy for relative risk-aversion, as reflected in hypothesis 6. In addition, industry dummies, based on Fama's five-industry categorization,[74] with the addition of a category for financial industry targets; the omitted industry is consumer (there were too few healthcare targets to include that category), which are proxies for industry fixed effects related to risk and asymmetric information. The first three models are ordinary least squares (**OLS**); the last is ordered logit.

In model (1), the dependent variable is the length of the indemnity period in months. Shorter indemnities mean less risk-retention by target-owners; risks that emerge after the indemnity period are borne by the buyer. In model (2), the dependent variable is the ratio of the cap on the indemnity to bid value. Smaller caps mean less risk retention by the target-owners. In model (3), the dependent variable is the ratio of the basket or deductible in the indemnity to the bid value. Larger baskets/deductibles mean less risk retention by the target-owners. In model (4), the dependent variable is the number of metrics used in the contract's price-adjustment clause. More metrics mean more complexity in the sharing of risk between buyers and target-owners.

In each of the models, the law firm experience variable correlates strongly with elements of RAP design. Consistent with hypothesis 13, more experienced law firms matched against less experienced law firms produce contracts that allocate less risk to target-owners, and that are less complex. In unreported results, consistent with hypothesis 11A, these results are also associated with the simple presence of a more experienced buyer law firm, although the correlations are weaker than when the buyer law firm's experience is deflated by the target's law firm experience. Both law firm experience and mismatches between experienced and inexperienced law firms produce these results.

In addition, consistent with relative risk aversion theories, indemnity survival is shorter when the target is larger relative to the bidder, although the result is imprecisely estimated and statistically significant only at the 10% confidence level. Larger bids are associated with lower caps on indemnities, but this has less to do with relative risk aversion (the ratio of target and bidder assets is not statistically significant) and more to do with the absolute risk-aversion of the target-owners as the target (and thus the bid) grows in size. Neither bid size nor relative target/bidder size matter to basket/deductible design nor to the complexity of price adjustments. High-tech deals, result in shorter indemnity periods, even as they are more likely to result in earn-outs, as found in prior

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[74] http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html

research.[75] This contrast may be due to the differences in the risks addressed by the two types of RAPs – liabilities of high-tech firms may be more strongly affected after the closing by the buyer than liabilities of firms in other industries, whereas the future value of earnings of such firms may be more uncertain than in other industries.

Table 11 presents simple models of RAP support. The models are similar to those in Table 10, except that the dependent variables are: in model (1), the size of RAP support relative to bid value; in model (2), the use of escrows; and in model (3), the size of escrows relative to bid value. Models (1) and (3) are OLS; model (2) is logistic. Escrows are the focus because they are the most common form of RAP support, because holdbacks are relatively uncommon, and because debt financing (which can support RAPs) can also be used for reasons having little to do with risk allocation, and instead with the bidder financing constraints in cash or part-cash bids. The explanatory variables are as in Table 10.

Consistent with the results from Table 10, and with hypothesis 13, more experienced law firms matched against less experienced law firms are less likely to use escrows to support RAPs (model (2)).[76] However, inconsistent with hypothesis 13, and more consistent with hypothesis 11, more experienced law firms matched against less experienced law firms use larger escrows and larger amounts of total RAP support (relative to the bid value) than other lawyers (models (1) and (3)), conditional on the decision to use an escrow or RAP support at all. These differences are not due to differences in target size or bid value, as those differences are controlled for by the inclusion of LN_BIDVALUE and T_AT_OVER_B_AT, neither of which have a strong relationship to the use or size of RAP support in this sample. None of the other explanatory variables are statistically significantly related to RAP support, except one: if the target is a manufacturing company, escrows ($p<.05$) and total RAP support ($p<.10$) tend to be smaller than for targets in other industries.

The results in Tables 10 and 11 are robust to alternative specifications, including (for example) omitting the industry controls, or including alternative industry definitions, such as the target's 2-digit SIC code; using White-Huber standard errors without industry clustering; using neither White-Huber errors nor industry controls; and the inclusion of various other potential right-hand variables, including each of the right-hand variables included in the RAP incidence models in Table 7 (RISKY_CUR_LIAB, LN_T_CSHR, and NON_DIVERS_SIC4), none of which is strongly related to the use or size of escrows or total RAP support in this sample.

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[75] E.g., Cain et al., supra note 17.

[76] In untabulated results, none of the right-hand variables in Table 11 are strongly related to the use of any amount of RAP support (coded as 1 if any RAP support is used) in a logistic model, except targets in the FINANCE industry, which are less likely to do so, presumably because bids for such targets are generally funded with bidder stock, making use of debt consideration less important.

VII.   Summary of Findings and Limits

To recap the empirical findings of this paper: RAPs are common (53%) but not universal in a random sample of M&A deals from 2007 and 2008. Earn-outs – the subject of prior research – are used less often (8%) than two other types of risk sharing: indemnities (47%) and price adjustment clauses (37%). Adjusted for likely payouts, these other RAPs are economically comparable or more significant than earn-outs. RAP support – escrows, holdbacks and seller financing – are also common (34%), almost always (97%) in deals that include one of the three RAPs studied here, so that 64% of deals with these RAPs also include RAP support. These findings are consistent with hypotheses 1, 2 and 10, but not 1A.

RAPs are more common in deals involving targets in industries with risky current liabilities, and if the target and bidder are in different industries. Nearly all (92%) of bids for non-SEC-registered targets include at least one RAP, while few (13%) of the SEC-registered target deals do, and RAP support is also much more common in bids for non-SEC-registered targets. RAPs of all types are also less common where targets have more shareholders, even after focusing just on deals involving targets with 10 or more shareholders and controlling for whether the target is SEC registered. These correlations persist in multivariate regressions that include industry controls. In this sample, RAP use is not strongly correlated with bid size or relative size of the target and bidder.   These findings are consistent with hypotheses 3, 4, 4A, and 7. No support is found for hypotheses 5 or 6.

Law firms tend to match with similarly experienced law firms, and law firm experience also correlates with deal size. However, mismatches are also common. More experienced bidder law firms are *less* – not more – likely to use RAPs, and the deals on which they work exhibit less variation in RAP use than deals staffed by less experienced lawyers. These correlations, too, persist after controlling for other factors, such as bid size and target industry. Earn-outs, but not indemnities or price adjustments, are more common in bids for high-tech targets. These findings are consistent with hypotheses 8, 11A and 12. No support is found for hypothesis 11.

When the most common RAP is used (i.e., an indemnity), targets almost always obtain limits on the extent of risk-retention, through the use of caps (90%), baskets/deductibles (90%), thresholds (92%), and survival periods that are shorter than generally applicable statutes of limitations period (100%). Nearly all caps (92%) are below bid value, and they average 31% of bid value. The median basket is 1% of bid value; the median threshold is $50,000; and the most common survival period is one year. Survival periods (88%), baskets (100%) and thresholds (100%) are expressed in round units, either absolute amounts (three months, $1000s) or as percentages of bid value. These findings are consistent with hypotheses 2 and 9.

Most price adjustments (59%) use at least one deal-specific metric, rather than only the four most common metrics (i.e., working capital, debt, transaction expenses and cash). Most (57%) also use multiple metrics, with the average number of metrics being

3.4. A variety of methods of calculation are also used, with no single method dominating.

More experienced law firms tend to use simpler price adjustment clauses, which are most complex when "middling" law firms were (mis)-matched against "newbie" law firms (six metrics vs. two, on average). Such mismatches also correlate with other aspects of RAP design. When more experienced law firms are matched against less experience firms, survival periods are shorter (by one to three months, on average); caps are lower (by 30 to 100 basis points, on average); and baskets are larger (by 3 to 10 basis points, on average). These differences persist when controlling for other factors that correlate with RAP design, such as bid size (caps fall as bids grow) and industry (high-tech deals use shorter survival periods). Law firm mismatches also correlate with the use and size of RAP support. When more experience lawyers are matched against less experienced lawyers, the use of an escrow is less common, but when RAP support (including an escrow) is included, such mismatches produced smaller RAP support, consistent with the other findings on RAP design. Again, these law firm correlations persist after controlling for other factors that might influence RAP support. These findings are consistent with hypothesis 13.

This study has many limits. The sample is relatively small (n=120), reducing the power of statistical tests and making the correlations with some variables more interesting than the lack of correlations with others. The analysis is far from exhaustive – other RAPs exist besides those studied here, particularly as regards pre-closing risks (e.g., conditions and termination fees), but also post-closing risks (e.g., some post-closing covenants). As reflected in the discussion above, there are many other components of the RAPs besides the ones studied here. While representative of the cross-section of M&A in 2007 and 2008 for deals involving at least one SEC-registered company, M&A agreements between involving solely non-SEC-registered companies are not publicly available and may differ from those studied here. The cross-sectional sample cannot reveal any time trends in the data (such as may be the case with earn-outs, as discussed above), and many relevant influences are omitted, because they are not observable or would overwhelm the small sample size.

More broadly, RAPs and RAP support are chosen simultaneously with numerous other choices, not the least of which are the decision to enter into an M&A deal at all, and at what price. Based as it is on theory and a limited dataset, the limited analysis here should be understood as presenting novel, detailed descriptive evidence of, and provisional causal inferences and/or predictive indicators about, how risks are allocated in an important set of transactions. Some but not all of these limits seem intractable given present research technology: future work might, for example, develop time series data, develop and apply structural models to RAP data, or relate RAPs to other proxies for asymmetric information, moral hazard, relative risk aversion, transaction costs, and agency costs. On the other hand, at least in this setting, the risk of selection bias and omitted variable bias are likely to be with us for the indefinite future.

VIII.   Normative and Practical Implications

Despite the limits of this study, the findings have a number of normative and practical implications. For academics, the data suggest that no single strand of economic theory suffices to understand how real-world contracts allocate risk. Risk allocation provisions are highly varied across contracts in a class of transactions that are similar on many dimensions. Some of this variation can be (and has been in this paper) traced to differences in proxies for standard and fundamental "bugs" in conventional micro-economic models, such as asymmetric information and moral hazard. The results are consistent with RAPs in M&A contracts enhancing welfare by mitigating the effects of those bugs, and efficiently allocating risks between parties to these contracts. However, much of the variation in RAPs also appears to systematically correlate with proxies for (or be most simply explained by) transactions costs and lawyer-client agency costs. To the extent that contracts are constrained in what they can efficiently accomplish by these costs, default rules of property, tort, and contract will determine the actual allocation of risks among parties to M&A transactions, making welfare analysis of these rules more important, and creating opportunities for welfare improvements through public and private action.

More specifically, the data here show that target-owner liability for misvaluation and value-shifting risks are limited by contract to claims made within 15 months of closing (for most non-SEC-registered targets), and are almost always limited in ways that would not follow from current default law. Because these limits are voluntarily chosen conditional on the parties entering into and expecting to enforce detailed RAPs and RAP support provisions, the implication is that current default rules may be inefficient. That is, statutes of limitations for contract liability (typically six years[77]) may be inefficiently long, at least for contracts between large commercial parties. Shortening it to one year for M&A deals would have eliminated the need to negotiate this issue in 42% of the sample deals. Parties could vary this default (as under current law), so it would cause no harm relative to the status quo in other deals. The only potential downside of such a change is drawing a line between the statute of limitations for M&A deals and other contracts. While the modal M&A deal is clearly differentiated from other kinds of contracts, there may be some transactions (e.g., sales of a portion of a company's assets) that might reasonably fall on other wise of the necessary borderline. To minimize these costs, the modified default should apply only if it were clear from the face of the agreement that is was for the acquisition of an entire business, and leave it to contracting parties to modify the default in other contracts.

Similarly, the near-universality of baskets and caps suggests that it may be efficient to impose those limits by default rule: a default basket/deductible would be similar to the amount-in-controversy requirement for Federal courts,[78] while a default cap

[77] See, e.g., http://www.nolo.com/legal-encyclopedia/statute-of-limitations-state-laws-chart-29941.html (last visited August 21, 2012) (chart of state statutes of limitations, showing that the most common length for claims based on written contracts is six years; minimum is three years; maximum is fifteen years).

[78] 28 U.S.C. §1332 (amount in controversy must exceed $75,000 for diversity cases in Federal courts).

would be similar in spirit (if not detail) to limits on liquidated damages long imposed by common law.[79] A default deductible of one half of one percent of deal value and a default cap of 20% of deal value would have eliminated the need to negotiate these terms in 22% and 13% of the sample, respectively, and possibly more if these default terms were sufficiently close to the desired terms for the parties to rely on the default (e.g., another 15% of the sample used a cap that was +/- 10% of a cap of 25% of deal value). These changes would be more novel than a simple shift in the statutes of limitations, but if limited to deals clearly identified as M&A transactions and established as default rules, they would provide gains without any obvious, significant downsides.[80]

A broader if less easily implemented policy implication flows from the fact that nearly all SEC-registered targets cut off liability at closing. This choice appears not to reflect an optimal decision by buyers and targets on how to allocate risk, but to be caused at least as much by enforcement costs. While passive non-managerial target-owners may not have much information not more efficiently obtainable by the buyer, managerial or controlling target-owners of SEC-registered targets probably do, and yet even they do not typically provide indemnities to the buyer. If enforcement costs could be reduced, more efficient risk-allocation than currently takes place might occur, improving social welfare. For example, more resources might be dedicated to business courts.[81] Such courts might consider how to create or recruit private actors to create a centralized escrow system that would facilitate risk sharing between buyers and target owners.[82]

The evidence presented here consistent with potential agency costs also has normative implications related to regulation of the legal profession. Given the lack of any publicly available or verified system for determining the experience of law firms on specific types of transactions, the data suggest that clients may not fully appreciate how varied the experience of their law firms may be when it comes to specific kinds of transactional work. Despite the fact that law firm experience on particular types of deals varies enormously even among firms that are engaged in the "same" class of transactional work, currently there is no requirement that a law firm disclose (in either a general or specific way) their experience. Lawyers as agents are subject to general duties of care

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[79] E. Allan Farnsworth, Contracts 12.18 (3d ed. 1999), at 843-44; U.C.C. 2-718(1) (2001); Restatement (Second) of Contracts 356(1) (1981).

[80] The fact that, in this sample, the parties were able to contract around the defaults of no caps, no baskets, and multi-year statutes of limitations does not imply that current defaults are costless. The more terms that must be specifically altered from default rules, the more likely bargaining breakdowns may occur, the more out-of-pocket costs must be paid to lawyer-agents, and the more likely that gains from trade will be lost.

[81] Chief Judge's Task Force: Commercial Litigation in the 21st Century, Report and Recommendations to the Chief Judge of the State of New York (June 2012), available at http://bit.ly/N1fMo6 (last visited August 21, 2012).

[82] A related question, addressed in related research, see Coates 2012, supra note 2, is why the parties do not choose to resolve disputes or enforce contracts in private arbitration or in efficient courts through arbitration and/or forum selection clauses. Here, too, the possibility of lawyer-client agency costs may be involved. While this paper does not address those potential costs in relation to dispute resolution, this paper does present evidence consistent with agency costs playing a significant role in determining the choice and design of M&A contract terms, including widespread errors, a correlation between errors and law firm experience, correlations between RAP choice and law firm experience, and correlations between RAP design and both law firm experience and "mismatches" between firms with different levels of experience.

and candor, but the common law of agency has not kept pace with the degree to which lawyers now specialize, and no case-specific sub-rules applying those duties requires useful disclosures about experience to be made to clients when it might actually affect their decisions to retain a given law firm.

The findings here suggest that lawyers ought to have an affirmative, specific duty to disclose whether they have ever engaged in a given type of transaction before, in writing, to their clients, before accepting such an engagement. While such disclosure obligation might modestly entrench existing specialists, disclosure is a minimal intervention that would not prevent inexperienced lawyers to make their sales pitches based on cost, trust, willingness-to-exert effort, focus, or other attributes that may plausibly lead clients to give "newbies" a shot at an M&A deal, particularly if the stakes are not large relative to the legal fees involved. Market competition conditional on the minimal disclosure of a fact self-evidently relevant to an informed "consumer's" choice would be preserved.

More broadly, if less clearly, the results may suggest that lawyers be subject to disclosure obligations related to specific kinds of contract choices. The relatively rare use of earn-outs in this sample reinforces theory suggesting that they generate serious ongoing incentive-compatibility problems, numerous case decisions illustrating those problems, and Brian Quinn's evidence on how rarely they pay out in full, or even increase in value over time.[83] Excessively complex price-adjustment clauses may fall into a similar category. This all suggests that clients may not appreciate that earn-outs or highly complex price adjustments are not worth nearly as much as they might appear. Even if they facilitate deals, fully informed clients may regret deals that include them ex post. Meanwhile, the lawyers who recommended them have been paid and may even get more fees by litigating the earn-out disputes that subsequently arise.

What solution? A minimal "nudge" would be to require that lawyers who recommend earn-outs document what the payouts on similar earn-outs have been on similar deals, and to provide that information to clients, or be at risk for malpractice if the earn-out fails to perform as promised. This would require a modest amount of up-front research, at some cost, but promises to improve contract design over time. The research costs, moreover, could be shared – indeed, the ABA's ongoing M&A contract analysis programme could be adapted to this purpose, producing a public good at relatively low cost for the entire universe of clients that consider such terms. Even if one is not inclined to dictate specific disclosures of this type, courts in malpractice cases might consider relevant evidence that a given M&A lawyer was not aware of the relevant ABA studies, or failed to disclose what they have to say on whether a given contract term being recommended by the lawyer was standard or not.

Most broadly, if least likely, the "unified bar" approach to regulation of law firms presumes (counterfactually, absurdly) that all lawyers are qualified to accomplish all

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[83] See Gilson, supra note 1 (theory on how earn-outs can create incentive problems and conflicts); O'Tool et al. v. Genmar Holdings, Inc., et al., 387 F.3d 1188 (10th Cir. 2004) (example of dispute arising from earn-out); and Quinn, supra note 17 (showing that earn-outs rarely pay their maximum, and often pay much less).

legal tasks.   The findings here suggest that this approach is failing to assist even the relatively well off "corporate" hemisphere of the profession achieve the basic goal of obtaining cost-effective competent legal services.   No profession that is as large and varied as the US legal profession has failed to adopt specialization certifications as a means to address this problem.

IX.   Conclusion

This paper has explored risk allocation provisions in the M&A context.   Such provisions are common but far from universal, and vary widely in design.   Several different economic theories are needed to understand this variation in their use and in their design. Transaction costs and agency costs appear to play a role at least as significant in determining those patterns as do theories of asymmetric information and moral hazard. Earn-outs, which have previously been the subject of several detailed empirical studies, are much less common as a means to allocate risk than indemnities or price-adjustment clauses. Proxies for transaction costs, such as widespread use of "support" provisions for risk allocation provisions, and proxies for agency costs, such as lawyers' experience in prior deals, appear to be important independent correlates of such provisions.   These findings suggest that there are opportunities for enhancing welfare through policy analysis and changes in default laws of tort, contract, property and the regulation of lawyers.

Appendix A.   Obtaining an M&A Agreement for Public Company Targets via EDGAR

One can take the following simple steps to find a merger agreement. As an example, the steps locate the merger agreement filed by Hewlett-Packard for its 2001 merger with Compaq on the SEC's EDGAR system.   Start by going to the SEC's website, www.sec.gov and doing the following:

- Click "Filings & Forms (EDGAR)," then
- Click "Search for Company Filings," then
- Click "Company or fund name…."
- Once there, type in "Hewlett" as "Company Name," then
- Click "0000047217" (the first row of the chart).
- Type "8-K" in the box provided for "Form Type,"
- Type "20020101" in the box labeled "Prior to,"
- Check "Exclude" under "Ownership?" and then
- Click "Search.

The relevant Form 8-K was filed on 9/4/01, the day the merger was announced, and the merger agreement is an exhibit to that filing.

Appendix B. Transactions in the Control Bid Dataset

Date announced	Target name	Bidder name	Public or private target?	Link to Contract
1/3/07	Sigma Metals Inc	Gales Industries Inc	Private	
1/9/07	PrairieWave Communications Inc	Knology Inc	Private	
1/16/07	Allendale Pharmaceuticals Inc	Synova Healthcare Grp Inc	Private	
1/18/07	Colgan Air Inc	Pinnacle Airlines Corp	Private	
1/22/07	First Haralson Corp	WGNB Corp	Private	
1/24/07	American Community Newspapers	Courtside Acquisition Corp	Private	
1/25/07	TeleCommunication Systems-Div	Stockgroup Info Sys Inc	Private	
2/1/07	Midrange Computer Solutions	Datalink Corp	Private	
2/21/07	Output Exploration LLC	Exploration Co of Delaware Inc	Private	
3/7/07	Princeton Server Group Inc	TelVue Corp	Private	
3/11/07	Copperfield LLC	Coleman Cable Inc	Private	
4/3/07	Resorts East Chicago	Ameristar Casinos Inc	Private	
4/10/07	Adorn LLC	Patrick Industries Inc	Private	
4/16/07	AmeriPath Inc	Quest Diagnostics Inc	Private	
4/18/07	FNB Finl Corp,Three Rivers,MI	Southern Michigan Bancorp,MI	Private	
4/18/07	Goldking Energy Corp	Dune Energy Inc	Private	
4/26/07	Davison Energy-Related	Genesis Energy LP	Private	
5/4/07	Westin Atlanta Airport	Interstate Hotels & Resorts	Private	
5/10/07	InteliStaf Holdings Inc	Medical Staffing Network Hldgs	Private	
5/11/07	Pocono Cmnty Bk,Stroudsburg,PA	First Keystone Corp	Private	
5/14/07	Capital City Holding Co Inc	North Pointe Holdings Corp	Private	
5/17/07	Calumet Florida LLC-Oil Ppty	BreitBurn Energy Partners LP	Private	
5/17/07	Rader Farms Inc	Inventure Group Inc	Private	
5/18/07	Clark Group Inc	Global Logistics Acq Corp	Private	
5/20/07	DTE Gas & Oil Co	Atlas Energy Resources LLC	Private	
5/22/07	Fremont General-Coml RE	iStar Financial Inc	Private	
6/3/07	Anadarko Petro Corp-Cert asts	Atlas Pipeline Partners LP	Private	
6/5/07	Medical Research Institute	Natrol Inc	Private	
6/7/07	LiveDeal Inc	YP Corp	Private	
6/22/07	Mann Steel Products Inc	National Coal Corp	Private	
6/27/07	Karta Technologies Inc	NCI Inc	Private	
7/13/07	AMVEST Osage Inc	Constellation Energy Partners	Private	
7/22/07	Misys Healthcare-CPR Assets	QuadraMed Corp	Private	
7/23/07	Appalachian Oil Co Inc	Titan Global Holdings Inc	Private	
7/30/07	H-G Holdings Inc	Concur Tech Inc	Private	
7/30/07	Regional Enterprizes Inc	Rio Vista Energy Partners LP	Private	
8/2/07	Verizon Commun Inc-Telecom	GoAmerica Inc	Private	
8/6/07	Hutchinson Telephone Co	New Ulm Telecom Inc	Private	
8/22/07	NTS Communications Inc	Xfone Inc	Private	
9/6/07	Gulfshore Midstream LLC-Asts	Gateway Energy Corp	Private	
9/12/07	Phelps Dodge Intl Corp	General Cable Corp	Private	
9/12/07	Quicksilver Resources Inc-Asts	BreitBurn Energy Partners LP	Private	
9/17/07	Cardlock LLC	United Fuel & Energy Corp	Private	
9/17/07	Global Clean Energy Holdings	Medical Discoveries Inc	Private	
9/20/07	Network General Corp	NetScout Systems Inc	Private	
10/4/07	Blue Hill Data Services Inc	BPO Management Services Inc	Private	
10/22/07	Investacorp Inc	Ladenburg Thalmann Finl Svcs	Private	
11/6/07	LogistiCare Inc	Providence Service Corp	Private	
11/19/07	New Star Holdings Intl Inc	The Middleby Corp	Private	
12/3/07	Rubicon Integration LLC	Fortress Intl Grp Inc	Private	
12/6/07	Everest Broadband Inc	SureWest Communications	Private	
12/11/07	Cortelco Systems Holding Corp	eOn Communications Corp	Private	
12/17/07	Geer Tank Trucks Inc	Continental Fuels Inc	Private	
12/19/07	Woodard LLC	Craftmade International Inc	Private	
12/20/07	GeoLogic Solutions Inc	XATA Corp	Private	
1/16/08	Southpeak Interactive LLC	Global Svcs Partners Acq Corp	Private	
2/12/08	Earth Technology Corp USA	AECOM Technology Corp	Private	
2/12/08	Kennecott Minerals Co	Hecla Mining Co	Private	
2/22/08	BioAuthorize Inc	Genesis Holdings Inc	Private	
9/5/08	State of Franklin Bancshares	Jefferson Bancshares Inc	Private	
1/7/07	Houston Exploration Co	Forest Oil Corp	Public	

1/8/07	Strategic Distribution Inc	Investor Group	Public	
1/8/07	United Surgical Partners Intl	UNCN Acquisition Corp	Public	
1/18/07	ION Media Networks Inc	Citadel Investment Group LLC	Public	
1/19/07	Whittier Energy Corp	Sterling Energy PLC	Public	
1/29/07	PYR Energy Corp	Samson Investment Co	Public	
2/8/07	First Coastal Bancshares,El	CVB Financial Corp,Ontario,CA	Public	
2/13/07	Corillian Corp	CheckFree Corp	Public	
2/16/07	Vantagemed Corp	Nightingale Informatix Corp	Public	
3/19/07	Patapsco Bancorp Inc,Maryland	Bradford Bancorp Inc,Baltimore	Public	
3/22/07	Smithway Motor Xpress Corp	Western Express Inc	Public	
3/27/07	Milastar Corp	Milastar Acquisition Corp	Public	
4/2/07	Tribune Co	Sam Zell	Public	
4/4/07	Ablest Inc	Koosharem Corp	Public	
4/19/07	Heartland Oil & Gas Corp	Universal Ppty Dvlp & Acq Corp	Public	
5/1/07	Dow Jones & Co Inc	News Corp	Public	
5/2/07	Mity Enterprises Inc	MLE Holdings, Inc. (Sorenson Capital)	Public	
5/14/07	First Albany Cos Inc	MatlinPatterson FA Acquisition	Public	
5/15/07	Dynamic Health Products Inc	GeoPharma Inc	Public	
5/15/07	International Electronics Inc	Linear Corp	Public	
5/16/07	East Penn Financial Corp	Harleysville National Corp,PA	Public	
6/25/07	Neon Communications Group Inc	RCN Corp	Public	
7/3/07	Hilton Hotels Corp	Blackstone Group LP	Public	
7/11/07	Boston Communications Group	Tea Party Acquisition Corp	Public	
8/3/07	Coast Financial Holdings Inc	First Banks Inc	Public	
8/8/07	Aptimus Inc	Apollo Group Inc	Public	
10/2/07	United Heritage Corp	Blackwood Ventures LLC	Public	
10/6/07	Paivis Corp	Trustcash Holdings Inc	Public	
10/16/07	Pinnacle Gas Resources Inc	Quest Resource Corp	Public	
10/26/07	VerticalNet Inc	BravoSolution SpA	Public	
11/7/07	vFinance Inc	National Holdings Corp	Public	
11/18/07	Natrol Inc	Plethico Pharmaceuticals Ltd	Public	
11/30/07	PeopleSupport Inc	Investor Group	Public	
12/17/07	IBT Bancorp Inc,Pennsylvania	S&T Bancorp Inc,Indiana,PA	Public	
12/27/07	Document Sciences Corp	EMC Corp	Public	
12/31/07	Transmeridian Exploration Inc	Trans Meridian Intl Inc	Public	
1/8/08	St Lawrence Energy Corp	Nok-Bong Ship Building Co Ltd	Public	
1/14/08	Golden Cycle Gold Corp	AngloGold Ashanti Ltd	Public	
1/17/08	Performance Food Group Co	Panda Acquisition Inc	Public	
1/31/08	Audible Inc	Amazon.com Inc	Public	
2/25/08	Varsity Group Inc	Follett Corp	Public	
3/16/08	Bear Stearns Cos Inc	JPMorgan Chase & Co	Public	
3/17/08	Chief Consolidated Mining Co	Andover Ventures Inc	Public	
3/24/08	TenFold Corp	Versata Inc	Public	
3/27/08	Quipp Inc	Illinois Tool Works Inc	Public	
3/31/08	AirNet Systems Inc	Bayside Capital Inc	Public	
4/20/08	Packeteer Inc	Blue Coat Systems, Inc.	Public	
4/29/08	Pyramid Breweries Inc	Independent Brewers United, Inc.	Public	
4/30/08	Bois d'Arc Energy Inc	Stone Energy Corp	Public	
5/12/08	Radyne Corp	Comtech Telecommun Corp	Public	
6/10/08	Superior Essex Inc	LS Cable Ltd	Public	
6/24/08	Memry Corp	SAES Getters SpA	Public	
7/10/08	China Tel Group Inc	Asia Special Situation Acq	Public	
7/10/08	MacroChem Corp	Access Pharmaceuticals Inc	Public	
7/14/08	Ace*Comm Corp	Ariston Global Partners LLC	Public	
7/14/08	Edge Petroleum Corp	Chaparral Energy Inc	Public	
7/16/08	Alpha Natural Resources Inc	Cleveland-Cliffs Inc	Public	
8/29/08	Greenfield Online Inc	Microsoft Corporation	Public	
9/15/08	First Communications LLC	Renaissance Acquisition Corp	Public	
11/20/08	Image Entertainment Inc	Nyx Acquisitions	Public	

Appendix C. Size-Industry Matched Subsamples 2007–2008, Bid and Match Statistics

Size-Industry Matched Subsamples
2007–2008, Bid and Match Statistics

	Public Target		Private Target		P-value of t-test of means or rank-sum test
Bid value ($MM)	Value	N	Value	N	
Maximum	$20,168	60	$2,000	60	
Mean	$859	60	$252	60	0.12
Median	$72	60	$51	60	0.33
Minimum	$1	60	$1	60	
Bids above full-sample median	55%	60	45%	60	0.14

Industry Matches	N	Matches	% Matches
4-digit SIC match	60	37	62%
3-digit SIC match	60	43	72%
2-digit SIC match	60	57	95%
1-digit SIC match	60	58	97%
Fama-French-5+Finance match	60	60	100%

Target Industry (Fama-French-5 + Finance)	N	%	% Matches
1. Consumer	8	13%	100%
2. Manufacturing	6	10%	100%
3. High Tech	20	33%	100%
4. Healthcare	1	2%	100%
5. Other (ex Finance)	18	30%	100%
6. Finance	7	12%	100%

Bid Value Matches	Value	% of Pairs	N
Median bid value ($MM)	$62		120
Median bid difference ($MM)	$5		60
Median bid difference as % of median bid	7%		60
Difference < 5% of median bid	12	20%	60
Public bid larger	38	63%	60
Public bid smaller	22	37%	60

	Public Target		Public Target		P-value of t-test of means or rank-sum test
Number of record shareholders	Number	N	Number	N	
Maximum	26,000	58	369	28	
Mean	2,167	58	39	28	0.00
Median	465	58	5	28	0.00
Minimum	23	58	1	28	

Criteria: US targets, control bids, bidder owns < 20% prior to bid, bid not still pending, agreement at SEC
Private targets: public bidder, private target, assets reported, target assets > 20% bidder assets
Public targets: public target, same industry as matched bid, closest in bid size

Appendix D. Law Firms in Control Bid Sample

Law firms	Appearances in Sample	Law firms	Appearances in Sample
None	11	DeCampo, Diamond & Ash	1
Skadden, Arps, Slate, Meagher & Flom LLP	8	Dechert	1
Solo Practitioner	7	Dewey Ballantine LLP	1
Latham & Watkins	6	Finn, Dixon & Herling	1
Andrews Kurth LLP	5	Foley & Lardner	1
Fulbright & Jaworski L.L.P.	5	Franklin, Cardwell & Jones, P.C.	1
Shearman & Sterling LLP	5	Fredrikson & Byron	1
Akin, Gump, Strauss, Hauer & Feld	4	Freshfields Bruckhaus Deringer	1
Bingham McCutchen LLP	4	Goodwin Procter LLP	1
DLA Piper	4	Gould & Ratner LLP	1
Greenberg Traurig	4	Graham Dunn PC	1
Simpson Thacher & Bartlett	4	Guzov Ofsink, LLC	1
Baker Donelson Bearman Caldwell & Berkow	3	Harris, Finley & Bogle, P.C.	1
Blank Rome LLP	3	Hillis Clark Martin & Peterson, P.S.	1
Cleary Gottlieb Steen & Hamilton	3	Hiscock & Barclay LLP	1
Fried, Frank, Harris, Shriver & Jacobson LLP	3	HodgsonRuss	1
Graubard Mollen & Miller	3	Hogan & Hartson	1
Haynes and Boone, LLP	3	Holland & Knight LLP	1
Jones Day	3	Honigman Miller Schwartz and Cohn LLP	1
McDermott Will & Emery LLP	3	Horgan, Rosen, Beckham & Coren, LLP	1
Morgan Lewis & Bockius	3	Horwitz, Cron & Jasper, P.L.C.	1
Ropes & Gray LLP	3	Howard & Howard	1
Sichenzia Ross Friedman Ference LLP	3	Jenner & Block	1
Vinson & Elkins LLP	3	Keller Rohrback P.L.C.	1
Wachtell Lipton Rosen & Katz	3	Kirkland & Ellis	1
Bybel Rutledge LLP	2	Leonard, Street & Deinard	1
Cooley Godward LLP	2	Lindquist & Vennum	1
Dorsey & Whitney LLP	2	Littman & Krooks, P.C.	1
Eaton & Van Winkle	2	Luse Lehman Gorman Pomerenk & Schick	1
Edwards Angell Palmer & Dodge LLP	2	Malizia and Spidi, P.C.	1
Faegre & Benson LLP	2	McAfee & Taft	1
Fenwick & West LLP	2	Messerli & Kramer, P.A.	1
Gibson Dunn & Crutcher	2	Mintz Levin Cohn Ferris Glovsky & Popeo, P.C	1
Hunton & Williams	2	Mirsky & Block PLLC	1
Jackson Walker L.L.P.	2	Morris Manning & Martin LLP	1
Katten Muchin Rosenman LLP	2	Muldoon Murphy & Aguggia LLP	1
Kilpatrick Stockton LLP	2	Munger, Tolles & Olson LLP	1
Manatt, Phelps & Phillips, LLP	2	Nexsen Pruet, LLC	1
Mayer, Brown, Rowe & Maw LLP	2	Nixon Peabody LLP	1
Pillsbury Winthrop Shaw Pittman LLP	2	O'Melveny & Myers	1
Sonnenschein Nath & Rosenthal	2	O'Neill Law Group PLLC	1
Stinson Morrison Hecker LLP	2	Orrick Herrington & Sutcliffe LLP	1
Sullivan & Cromwell	2	Osborn Maledon, PA	1
Akerman Senterfitt	1	Patton Boggs LLP	1
Allen & Overy	1	Paul, Weiss	1
Anolik & Associates, P.C.	1	Pepper Hamilton LLP	1
Arnold & Porter	1	Perkins Coie	1
Baker & Hostetler LLP	1	Powell Goldstein LLP	1
Baker & McKenzie LLP	1	Proskauer Rose LLP	1
Baker Botts LLP	1	Rutan & Tucker, LLP	1
Bass Berry & Sims PLC	1	Saidis Flower & Lindsay	1
Berkman, Henoch, Peterson & Peddy, P.C.	1	Saul Ewing LLP	1
Berkowitz, Trager & Trager, LLC	1	Scudder Law Firm	1
Bilzin Sumberg Baena Price & Axelrod LLP	1	Seward & Kissel LLP	1
Briggs and Morgan, P.A.	1	Shannon, Martin, Finkelstein & Alvarado, P.C.	1
Butler, Snow, O'Mara, Stevens & Cannada, PLLC	1	Sidley Austin LLP	1
Calfee, Halter & Griswold LLP	1	Snell & Wilmer LLP	1
Cantor Arkema, P.C.	1	Stevens & Lee, a Professional Corporation	1
Carlton Fields PA	1	Stradley Ronan Stevens & Young	1
Cassels Brock & Blackwell LLP	1	Thompson & Knight LLP	1
Chadbourne & Parke LLP	1	Thompson Coburn	1
Choate, Hall & Stewart LLP	1	Troutman Sanders LLP	1
Christian & Barton	1	Troy & Gould	1
Clark Wilson LLP	1	Vanderpool, Frostick & Nishanian, P.C.	1
Clifford Chance	1	Vedder, Price, Kaufman & Kammholz, P.C.	1
Cornman & Swartz	1	Vorys, Sater, Seymour & Pease	1
Cravath, Swaine & Moore	1	Warner Norcross & Judd	1
Crowell & Moring, LLP	1	Watkins Ludlam Winter & Stennis, P.A.	1
Davis Polk & Wardwell	1	Weil Gotshal & Manges	1
Debevoise & Plimpton LLP	1	Williams Schifino Mangione & Steady, P.A.	1
		Willkie Farr & Gallagher	1

Appendix E.

Examples of Risk Allocation Provisions from Control Bid Sample

Price-Adjustment Clause – Typical

2.4 ... At the Closing: ... Buyer shall deliver: ... (i) the sum of $15,975,000 ... (the "***Escrow Amount***") to the Escrow Agent ... to be held in accordance with the Escrow Agreement; ... [and] an amount equal to the Closing Proceeds....

"***Closing Proceeds***" [are the] Purchase Price minus (1) the Escrow Amount, (2) the aggregate Payoff Amounts, (3) the Company Transaction Expenses, (4) the Closing Bonuses and (5) one-half of the costs and expenses in connection with the new Title Policies and Environmental Policies described in Section 7.6.

The purchase price (the "***Purchase Price***") for the Equity Interests shall be $213,000,000.

"***Payoff Amount***" means, with respect to each Company Debt, the amount (including principal, interest, fees, expenses, prepayment premiums or penalties, and other amounts payable to such lender in connection with the Company Debt) that would constitute payment in full of such Company Debt as of the Closing Date.

"***Company Transaction Expenses***" [means] the fees and expenses incurred by the Acquired Companies on behalf of themselves and/or the Sellers in connection with the Contemplated Transactions (including, without limitation, attorneys' and financial advisors' fees).

2.5 ... No earlier than five (5) business days, and no later than two (2) business days, prior to Closing, the Sellers' Representative shall deliver to Buyer a statement certifying the Sellers' good faith estimate, in accordance with GAAP, of the Closing Working Capital Adjustment ("***Estimated Closing Working Capital Adjustment***"). If the Estimated Closing Working Capital [Adjustment] is a positive number, the Closing Proceeds shall be increased by the amount of the Estimated Closing Working Capital Adjustment and if the Estimated Closing Working Capital [Adjustment] is a negative number, the Closing Proceeds shall be decreased by the amount of the Estimated Closing Working Capital Adjustment.

"***Closing Working Capital Adjustment***" means (i) the Copper Difference (if any) multiplied by the average closing price of copper per pound quoted on the New York Commodities Exchange (COMEX) for the 30-day period immediately prior to (and ending on the last business day immediately prior to) the Closing Date less (ii) Delinquent Payables plus (iii) the Collections Adjustment plus (iv) the Customer Payments.

"***Copper Difference***" means the amount, if any, by which the Pounds of Copper Inventory is less than or greater than 11.5 million pounds; provided, however, that if such difference or excess is 100,000 pounds or less, the Copper Difference shall be zero. If the Copper Difference results from Pounds of Copper being less than 11.5 million pounds, the component in clause (i) of the definition of "Closing Working Capital Adjustment" shall be a negative number. If the Copper Difference results from Pounds of Copper exceeding 11.5 million pounds, the component in clause (i) of the definition of "Closing Working Capital" shall be a positive number.

"***Delinquent Payables***" means accounts payable of the Acquired Companies outstanding as of the Closing Date that have not been paid in the Ordinary Course of Business; provided, however, that if the amount of the Delinquent Payables is less than $100,000, the Delinquent Payables shall be zero.

"***Collections Adjustment***" means Delayed Receivables less Accelerated Collections; provided, however, that if such total is a positive or negative number less than $100,000, the Collections Adjustment shall be zero.

"*Delayed Receivables*" means accounts receivable of the Acquired Companies as of the Closing Date owing from the CD Applied Customers pursuant to invoices that would traditionally have been paid between the date of this Agreement and the Closing Date if such CD Applied Customers had taken a discount to which they were entitled for payment in advance of the stated due dates of such invoices.

"*Accelerated Collections*" means cash collections of the Acquired Companies between the date of this Agreement and the Closing Date on accounts receivable owing from the CD Not Applied Customers pursuant to invoices which were paid in advance of the stated due dates of such invoices.

"*CD Applied Customers*" means the customers so identified on Exhibit 2.5(b) attached hereto who are entitled to take, and have traditionally taken, a discount on invoices issued by the Acquired Companies in exchange for payment in advance of the stated due dates of such invoices.

"*CD Not Applied Customers*" means the customers so identified on Exhibit 2.5(b) attached hereto who are entitled to take, but traditionally have not taken, a discount on invoices issued by the Acquired Companies in exchange for payment in advance of the stated due dates of such invoices.

"*Customer Payments*" means the cash collections of the Acquired Companies from the customer listed on Exhibit 2.5(a) attached hereto (i) multiplied by -.5 for any payments received prior to the Closing Date (yielding a negative number), and (ii) multiplied by .5 for any payments received after the Closing Date through April 15, 2007 (yielding a positive number).

Source: http://www.sec.gov/Archives/edgar/data/1323653/000095013707007104/c14788exv2.htm

Target: Copperfield LLC   Bidder: Coleman Cable Inc
Target Law Firm: Fredrikson & Byron   Bidder Law Firm: Mayer Brown Rowe & Maw
Bid value: $213 million   Number of target record holders: 13

Appendix E. (continued)

<u>Price-Adjustment Clause and Relevant Definitions – Atypically Short</u>

3.1 At the Effective Time, the Merger will have the following effects on the capital stock of the Company and Merger Sub: ... Each Share of Company Common Stock issued and outstanding immediately prior to the Effective Time (other than Shares of Company Common Stock issued and held in the Company's treasury) will, by virtue of the Merger and without any action on the part of the holder thereof, be converted into the right to receive the Company Common Stock Price Per Share payable as hereinafter provided (it being understood that such Shares of Company Common Stock do not include the Conversion Shares or shares of Company Common Stock issuable upon the exercise of Options)....

"***Company Common Stock Price Per Share***" means an amount equal to (A) the Company Common Equity Value divided by (B) the sum of (i) the total number of Shares of Company Common Stock issued and outstanding as of the Effective Time, (ii) the Conversion Shares and (iii) the number of shares of Company Common Stock issuable upon the exercise of Vested Options.

"***Company Common Equity Value***" means the Closing Cash Consideration less the Company Participating Preferred Stock Liquidation Preference.

"***Closing Cash Consideration***" means, without duplication (a) $2,000,000,000, plus (b) the amount of Specified Cash, less (c) the amount of Credit Facility Debt as of the Closing Date, less (d) the Holdings Subordinated Note Debt as of the Closing Date, less (e) the Senior Subordinated Note Amount as of the Closing Date, less (f) the amount of Senior Toggle Note Debt as of the Closing Date, less (g) the aggregate amount of any other Indebtedness of the Target Companies as of the Closing Date, less (h) the amount of the Seller Transaction Expenses, plus (i) the aggregate exercise price of the Options as to which the holders thereof are entitled to Option Consideration pursuant to Section 3.2.1.

"***Balance Sheet***" means the unaudited balance sheet of the Company as of March 31, 2007.

"***Specified Cash***" means the cash and cash equivalents (other than restricted cash) reflected on the Balance Sheet; provided, that if, as of the Closing Date, (a) the aggregate amount of cash and cash equivalents (other than restricted cash) of the Target Companies is less than the amount of cash and cash equivalents (other than restricted cash) reflected on the Balance Sheet, and (b) the outstanding balance under the revolving credit facility under the Credit Agreement is less than $74,000,000, for purposes of Section 3.1.1(b), the amount of Specified Cash shall be reduced by the amount of the difference referred to in clause (b).

Source: http://www.sec.gov/Archives/edgar/data/1022079/000093041307003623/c48046_ex10-1.htm

Target: Ameripath, Inc.	Bidder: Quest Diagnostics
Target Law Firm: Ropes & Gray	Bidder Law Firm: Shearman & Sterling
Bid value: $2 billion	Number of target record holders: 1

Appendix E. (continued)

Example of Earn-out Provisions from Control Bid Sample

2.5 Earn-Out Payment. (a) For purposes of this Section 2.5:

(i) "*2007 Adjusted EBITDA*" means, for the fiscal year ending December 31, 2007, the total of the following for the Surviving Entity and its Subsidiaries, determined on a consolidated basis, in each case as set forth in the 2007 Audited Financial Statements: net income; plus interest expense; plus income taxes; plus depreciation and amortization; plus amounts allocated to, or paid or payable by, the Surviving Entity or any of its Subsidiaries by or to Parent or any of its Affiliates for any corporate overhead costs; plus any incremental costs related to or arising from services or products provided by Parent or from procedures and practices required by Parent; plus costs and expenses incurred in connection with, related to, or arising from, the Merger or the other transactions contemplated by this Agreement, including the payment of transaction bonuses, sales bonuses or similar payments; plus extraordinary losses, including losses related to or arising from any asset sale; plus severance payments, severance benefits or similar payments paid or payable to current and former directors, officers and employees of the Surviving Entity or any of its Subsidiaries; plus any non-cash compensation charges related to equity compensation; less extraordinary gains, and gains related to or arising from any asset sale.

(ii) "*2007 Audited Financial Statements*" means the consolidated audited balance sheet of the Surviving Entity, and the related consolidated audited statements of income, stockholders' equity and cash flows of the Company, including information relating to each of its consolidated Subsidiaries, together with all related notes and schedules thereto, for the fiscal year beginning January 1, 2007 and ending December 31, 2007, prepared in accordance with GAAP applied on a basis consistent with the past practices of the Company immediately prior to the Effective Time.

(iii) "*2008 Adjusted EBITDA*" means, for the fiscal year ending December 31, 2008, the total of the following for the Surviving Entity and its Subsidiaries, determined on a consolidated basis, in each case as set forth in the 2008 Audited Financial Statements: net income; plus interest expense; plus income taxes; plus depreciation and amortization; plus amounts allocated to, or paid or payable by, the Surviving Entity or any of its Subsidiaries by or to Parent or any of its Affiliates for any corporate overhead costs; plus any incremental costs related to or arising from services or products provided by Parent or from procedures and practices required by Parent; plus costs and expenses incurred in connection with, related to, or arising from, the Merger or the other transactions contemplated by this Agreement, including the payment of transaction bonuses, sales bonuses or similar payments; plus extraordinary losses, including losses related to or arising from any asset sale; plus severance payments, severance benefits or similar payments paid or payable to current and former directors, officers and employees of the Surviving Entity or any of its Subsidiaries; plus any non-cash compensation charges related to equity compensation; plus "start-up" losses arising from or related to new contracts; less extraordinary gains, and gains related to or arising from any asset sale.

(iv) "*2008 Audited Financial Statements*" means the consolidated audited balance sheet of the Surviving Entity, and the related consolidated audited statements of income, stockholders' equity and cash flows of the Surviving Entity, including information relating to each of its consolidated Subsidiaries, together with all related notes and schedules thereto, for the fiscal year beginning January 1, 2008 and ending December 31, 2008, prepared in accordance with GAAP applied on a basis consistent with the past practices of the Company immediately prior to the Effective Time.

(v) "*Change of Control*" means any transaction that results in any person or group directly acquiring legal or beneficial ownership of (i) equity securities of the Surviving Entity possessing the majority of the voting power under normal circumstances to elect a majority of directors or similar governing body (whether by merger, consolidation or sale or transfer of the equity securities of the Surviving Entity) or (ii) all or substantially all of the Surviving Entity's and its Subsidiaries' assets, determined on a consolidated basis.

(vi) "*Earn-Out Payment*" means an amount equal to the product of (i) 9.0 and (ii) the difference between

(1) 2008 Adjusted EBITDA and (2) 110% of 2007 Adjusted EBITDA; *provided* that in no event shall the Earn-Out Payment exceed $40,000,000. ...

(d) The Earn-Out Payment shall be paid by Parent in cash; *provided* that, subject to Parent obtaining the approval of its stockholders of such issuance in accordance with Nasdaq Marketplace Rule 4350 (the "***Necessary Approval***"), each Seller shall have the right to elect to receive up to 50% of its *pro rata* share of the Earn-Out Payment (as set forth on <u>Schedule 1.9</u> of the Disclosure Schedule) in the form of shares of Parent Common Stock. Parent agrees to use all commercially reasonable efforts to obtain the Necessary Approval at the first meeting of the stockholders of Parent following the date of this Agreement. If Parent fails to obtain the Necessary Approval and a Seller elects to receive a portion of such Seller's *pro rata* share of the Earn-Out Payment in the form of shares of Parent Common Stock, then Parent shall pay such portion of the Earn-Out Payment to such Seller in cash in an amount equal to the product of (i) the number of shares of Parent Common Stock such Seller would have received if the Necessary Approval had been obtained by Parent, <u>multiplied by</u> (ii) the volume weighted average of the price per share of the Parent's Common Stock for the 20 trading days immediately preceding the Earn Out Payment Date (such closing price, the "***Earn Out Payment Per Share Price***"), *provided, however,* that the Earn Out Payment Per Share Price shall not exceed the product of (i) 2.0, <u>multiplied by</u> (ii) the Signing Per Share Price. Each Seller shall, within 10 days after final determination of the 2008 Audited Financial Statements and the statement of 2008 Adjusted EBITDA, notify the Stockholders' Representative in writing as to such Seller's election. Parent shall, within two business days following the expiration of such 10-day period (the ***"Earn-Out Payment Date"***), (i) pay an amount equal to the aggregate cash portion of the Earn-Out Payment by wire transfer of immediately available funds to such bank account or accounts designated by the Stockholders' Representative and (ii) provide notice to the transfer agent for Parent to deliver to each Seller who has made an election to receive a portion of its Earn-Out Payment in shares of Parent Common Stock certificates representing such shares. Upon the receipt of the cash payment referred to in clause (i) above, the Stockholders' Representative shall disburse promptly such amount to the Sellers in accordance with their respective pro rata ownership in the Company immediately prior to the Closing. For the purposes of this <u>Section 2.5</u>, the value of each share of Parent Common Stock shall be equal to $31.42 (the "***Signing Per Share Price***").

Source: http://www.sec.gov/Archives/edgar/data/1220754/000119312507237544/dex21.htm

Target: LogistiCare, Inc.   Bidder: Providence Services Corp.
Target Law Firm: Proskauer Rose LLP   Bidder Law Firm: Blank Rome LLP
Bid value: $260 million   Number of target record holders: Unknown

Appendix E. (continued)

Example of Indemnification Provisions from Control Bid Sample

9.1 From and after the Closing and subject to Sections 9.2 [limits, see below], 9.5 [procedures, omitted for brevity] and 9.6 [indemnification sole remedy, see below], each Seller shall, severally and not jointly, indemnify, defend, hold harmless, pay and reimburse Buyer and its officers, directors, employees, stockholders, Affiliates, successors and assigns (collectively, the "***Buyer Indemnitees***"), from and against: (a) any Losses based upon, arising out of or caused by any inaccuracy in, or breach of, any of the representations and warranties made by such Seller in Article 3 or by the Company in Article 4; (b) any Losses based upon, arising out of or caused by any breach or nonperformance of any covenant or obligation made or incurred by Sellers, the Company or Sellers' Representative herein; and (c) any Losses resulting from the failure of the Acquired Companies to comply with the emissions limits imposed by the Clean Air Act Title V Permit Number 039-17506-00324 issued by the Indiana Department of Environmental Management as in effect on or prior to the Closing Date. Notwithstanding the foregoing, with respect to the representations and warranties made in Article 3 or any covenants made herein, each Seller is responsible for only those representations, warranties and covenants made by that Seller, and no Seller shall be obligated to indemnify, defend, hold harmless, pay or reimburse Buyer Indemnitees for Losses based upon, arising out of or caused by, any inaccuracy in, or breach of, any representation, warranty or covenant made by any other Seller in Article 3 or otherwise herein; provided, however, that any indemnifiable Loss hereunder based upon, arising out of or caused by any act or omission by Sellers' Representative shall be deemed to be a Loss that is the several responsibility of Sellers for purposes of this Section 9.1. The indemnification responsibilities of any Seller hereunder shall be several and in accordance with such Seller's Percentage Interest.

9.2 (a) [***Survival Period***][84] Any claim by a Buyer Indemnitee for indemnification pursuant to Section 9.1(a) or Section 9.1(c) shall be required to be made by delivering notice to Sellers' Representative no later than the expiration of one year after the Closing Date, and no claim may be brought after the Closing Date for breach of any covenant in Section 8.1 [Pre-Closing Covenants and Agreements] which covenants expire at the Closing. Notwithstanding the foregoing, any claim for indemnification based upon, arising out of or caused by any inaccuracy in or breach of any representation or warranty in Section 3.1 [Authority; Capacity and Representation], Section 3.2 [Ownership of Securities], Section 3.3 [Execution and Delivery; Enforceability], Section 4.2 [Capital Stock] or Section 4.4(c) [Brokerage] [***Core Reps***], may be made at any time.

(b) Except for claims ... arising out of ... breach of any [Core Reps], Buyer Indemnitees shall not be entitled to indemnification under Section 9.1(a) until the aggregate amount of all of such Buyer Indemnitees' claims for indemnification under such section exceeds the Indemnification Threshold and thereafter Buyer Indemnitees shall be entitled to indemnification under such section only for amounts in excess of the Indemnification Threshold; provided, however, that the Indemnification Threshold shall not apply in the event of any fraud or intentional misrepresentation with respect to any representation or warranty by Sellers in Article 3 or the Company in Article 4, in which case Buyer Indemnitees may recover the full amount of all such Losses. Buyer Indemnitees shall not be entitled to indemnification under Section 9.1(c) until the aggregate amount of all of such Buyer Indemnitees' claims for indemnification under such section exceeds Two Hundred Fifty Thousand Dollars ($250,000) and thereafter Buyer Indemnitees shall be entitled to indemnification under such section only for amounts in excess of Two Hundred Fifty Thousand Dollars ($250,000); provided, however, that the $250,000 limitation shall not apply in the event of any fraud or intentional misrepresentation with respect to the indemnification matter enumerated in Section 9.1(c), in which case Buyer Indemnitees may recover the full amount of all such Losses. "***Indemnification Threshold***" is Seven Hundred Fifty Thousand Dollars ($750,000).

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[84] The defined terms "***Survival Period***," "***Core Reps***," and "***Cap***" were not in the original agreement, but are used to shorten this excerpt.

(c) [*Cap*] Except for claims for indemnification under Section 9.1(a) based upon, arising out of or caused by any inaccuracy in or breach of any [Core Rep], the maximum indemnification amount to which Buyer Indemnitees may be entitled under Section 9.1(a) and Section 9.1(c) shall be Six Million Dollars ($6,000,000); provided, however, that the foregoing limitation shall not apply in the event of any fraud or intentional misrepresentation with respect to any representation or warranty by Sellers in Article 3 or the Company in Article 4, in which case Buyer Indemnitees may recover the full amount of all such Losses.

(d) The Buyer Indemnitees shall not be entitled to indemnification under this Agreement if, and to the extent that, the Losses are reflected on the Final Adjustment Statement.

(e) For purposes of determining the amount of Losses resulting from any misrepresentation or breach of a representation or warranty contained herein, all qualifications or exceptions in any representation or warranty relating to or referring to the terms "material," "materiality," "in all material respects," "Material Adverse Effect" or any similar term or phrase shall be disregarded, it being the understanding of the parties that for purposes of determining Losses, the representations and warranties of the parties contained in this Agreement shall be read as if such terms and phrases were not included in them. ...

9.6   Each party acknowledges and agrees that, should the Closing occur, the sole and exclusive remedy with respect to any and all claims relating to this Agreement or the transactions contemplated hereby (other than claims of, or causes of action arising from, criminal activity, fraud or claims of, or causes of action for which equitable relief is sought) shall be pursuant to the indemnification provisions set forth in this Article 9. In furtherance of the foregoing, Buyer and each Seller hereby waives on behalf of himself and all other Persons who might claim by, through or under him, from and after the Closing, any and all rights, claims and causes of action (other than claims of, or causes of action arising from, criminal activity, fraud or claims of, or causes of action for which equitable relief is sought) which any such other Person may have arising under or based upon any Law and that relates to the transaction contemplated herein or to any aspect of the businesses of the Acquired Companies (except pursuant to the indemnification provisions set forth in this Article 9). Nothing in this Section 9.6 shall limit any Person's right to seek and obtain any equitable relief to which any Person may be entitled.

Target: Adorn LLC   Bidder: Patrick Industries Inc.
Target Law Firm: Calfee, Halter & Griswold LLP   Bidder Law Firm: McDermott Will & Emery LLP
Bid value: $75 million   Number of target record holders: 19

Table 1. Summary Statistics

	Mean or % positive	Median	St. dev.	Min	Max
Panel A. Bids in control bid dataset (n=120)					
Bid value ($mm)	555.6	62.4	2103.4	0.5	20168.3
Completion rate	92.5%	--	--	0	1
Cross-border bid	13.0%	--	--	0	1
Out-of-state bid (HQs of parties)	76.7%	--	--	0	1
Cross-jurisdictional bid (incorporation of parties)	60.8%	--	--	0	1
Diversifying bid (1-digit SIC mismatch)	37.5%	--	--	0	1
Diversifying bid (4-digit SIC mismatch)	65.0%	--	--	0	1
Asset purchase	13.0%	--	--	0	1
Stock purchase	24.0%	--	--	0	1
Merger (including tender/merger)	50.0%	--	--	0	1
All cash consideration	59.2%	--	--	0	1
Panel B. Bidders and targets in control bid dataset (n=120)					
Bidder assets ($mm) (n=89)	20095.2	203.7	165507.7	0.1	1562147.0
Target incorporated in Delaware	46.7%	--	--	0	1
Bidder incorporated in Delaware	51.7%	--	--	0	1
Bidder headquartered in US	87.0%	--	--	0	1
Target headquartered in US	100.0% (by construction)		--	0	1
Target public (SEC registered)	50.0% (by construction)		--	0	1
Panel C. M&A experience from law firm dataset (n=22750) of law firms in control bid dataset					
Value, all bids ($Bn)	220.8	31.7	370.9	0	1787.9
Number, all bids	353.7	190.5	461.6	0	1956
Value, public targets only ($Bn)	155.0	17.4	284.7	0	1448.4
Number, private targets only	148.9	15.5	285.2	0	1579
Firms with <$1 MM public target bids	25%	--	--	0	1
Panel D. RAP and RAP support incidence in control bid dataset					
Price adjustment clause	36.7	--	--	0	1
Earnout	8.3	--	--	0	1
Target indemnification of bidder	46.7	--	--	0	1
Any of the above	52.5	--	--	0	1
Escrow	27.3	--	--	0	1
Seller financing	11.7	--	--	0	1
Holdback	9.6	--	--	0	1
Any of the above	34.2	--	--	0	1
Support as % of bid value if >0 (n=41)	21.0	10.0	26.6	0.001	109.0

Table 2. Data on law firm experience and deal size

Bidder vs. target Mean law firm experience ($bn) Mean bid value ($mm) Count of bids		Target Law Firm		
		Newbie	Other	Top quartile
	Newbie	0 vs. 0 28 n=10	0 vs. 4 46 n=11	0 vs. 396 750 n=1
Bidder Law Firm	Other	3 vs. 0 36 n=13	14 vs. 11 90 n=39	26 vs. 356 797 n=16
	Top quartile	n=0	440 vs. 20 558 n=17	459 vs. 392 2993 n=13

Table 3. Relationships Among Major Types of RAPs

Panel A. Absolute Incidence of RAPs in Sample

		Full sample (n=120) Price adjustment			
		No Indemnity		Yes Indemnity	
		No	Yes	No	Yes
Earnout	No	57	15	4	34
	Yes	2	2	1	5

		Private target subsample (n=60) Price adjustment			
		No Indemnity		Yes Indemnity	
		No	Yes	No	Yes
Earnout	No	5	12	1	33
	Yes	1	2	1	5

Panel B. Pairwise correlations among RAPs (statistical significance in parentheses)

	Full sample (n=120)	
	Price adjustment	Earnout
Indemnity	0.640 (0.000)	0.141 (0.125)
Price adjustment		0.146 (0.111)

	Private target subsample (n=60)	
	Price adjustment	Earnout
Indemnity	0.347 (0.007)	-0.109 (0.403)
Price adjustment		-0.000 (1.000)

Table 4 Use of risk-allocation provisions in sample

Number of RAPs used	Frequency in sample	Percent of sample	Frequency in sample	Percent of subsample	Frequency in sample	Percent of subsample
	Full sample (n=120)		Non-SEC registered targets only (n=60)		SEC-registered targets only (n=60)	
0	56	47%	5	8%	51	85%
1	15	13%	8	13%	7	12%
2	34	28%	32	38%	2	3%
3	6	5%	6	10%	0	0%
4	6	5%	6	10%	0	0%
5	3	3%	3	5%	0	0%
6	0	0%	0	0%	0	0%

Number of RAPs used	Diversifying (within-industry) bids (n=42)		Non-diversifying (cross-industry) bids (n=78)		Quarterly variation in industry's total liabilities below median (n=57)		Quarterly variation in industry's total liabilities above median (n=63)	
0	19	45%	37	47%	28	49%	28	44%
1	2	5%	13	17%	8	7%	7	11%
2	17	40%	17	22%	14	20%	20	32%
3	1	2%	5	2%	4	2%	2	3%
4	2	5%	4	5%	1	5%	5	8%
5	1	2%	2	3%	2	1%	1	2%
6	0	0%	0	0%	0	0%	0	0%

Number of RAPs used	Quarterly variation in industry's current liabilities below median (n=70)		Quarterly variation in industry's current liabilities above median (n=50)		Ratio of target/bidder less than median (n=44)		Ratio of target/bidder more than median (n=76)	
0	38	16%	18	36%	17	39%	39	51%
1	7	9%	8	16%	6	14%	9	12%
2	19	18%	15	30%	15	34%	19	25%
3	2	47%	4	8%	14	32%	2	3%
4	1	7%	5	10%	2	5%	4	5%
5	3	2%	0	0%	0	0%	3	4%
6	0	0%	0	0%	0	0%	0	0%

Risk-allocation clauses include (1) price adjustment clauses; (2) earn-outs; (3) target indemnification of bidder; (4) escrows; (5) seller financing (debt consideration); and (6) holdbacks. Within-industry is based on 4-digit SIC codes. Quarterly variation in liabilities is average standard deviations of quarterly changes in liability variable for all Compustat firms in 3-digit SIC codes from 2001 to 2006.

Table 5. Summary data on bid characteristics and risk-allocation provision incidence, by SEC-status of target

	SEC-registered Target (n=60)	Non-SEC registered Target (n=60)	P-value of t-test, Wilcoxon test, or F-test
Bid characteristics			
Diversifying bid (1-digit SIC mismatch)	47%	28%	0.02
Diversifying bid (4-digit SIC mismatch)	73%	57%	0.03
Cross-border bid	22%	2%	0.00
Risky industry (variation in current liabilities)	46%	53%	0.23
Risky industry (variation in total liabilities)	49%	51%	0.43
RAP incidence			
Price adjustment clause in contract	7%	67%	0.00
Earnout provision	2%	15%	0.00
Target indemnification of buyer post-closing	7%	87%	0.00
Any of the above	13%	92%	0.00
RAP support incidence			
Escrow	0%	55%	0.00
Seller financing (i.e., debt consideration)	2%	22%	0.00
Holdback	0%	8%	0.00
Any of the above	2%	67%	0.00
Support as % of bid value	Negligible	14%	0.00

SEC-registered and non-SEC-registered targets are matched by size, industry and year. All bids from control bid sample described in text. Industry risk measured by standard deviation of quarterly firm changes in liabilities, by 3-digit SIC code; "risky industry" is industry with risk above median for all industries. "Support" is the sum of the amount of any escrow, holdback and/or seller financing in a given deal.

Table 6. Data on law firm experience and use of RAPs

Number of RAPs used Standard deviation in RAPs used		Target Law Firm, *(based on TARGET_ALL_LAW_SUM)*		
		Newbie	Other	Top quartile
Bidder Law Firm *(based on* *BIDDER_ALL_LAW_SUM)*	Newbie	1.3 (1.3)	1.2 (1.3)	1.0 (--)
	Other	1.6 (1.6)	1.5 (1.6)	0.9 (1.2)
	Top quartile	--	0.5 (0.9)	0.8 (0.9)

Table 7. Models of RAP incidence

Panel A. Risk, information and enforcement costs

	(1) All Targets		(2) All Targets		(3) All Targets		(4) Dispersed Targets (>10 Record Holders) Only	
	Odds ratio	p-value	Odds ratio	p-value	Odds ratio	p-value	Odds ratio	p-value
RISKY_CUR_LIAB	2.237	0.035	2.438	0.023	6.271	0.007	9.618	0.005
SEC_TARGET					0.007	0.000	0.559	0.653
LN_T_CSHR							0.542	0.011
FINANCE			0.499	0.235	0.205	0.349	2.425	0.452
N	120		120		120		68	
p-value of chi-sq	0.00		0.00		0.00		0.00	
Pseudo-R-squared	0.03		0.04		0.57		0.30	

Models are ordered logistic. Dependent variable is index of incidence of RAPs ranging from 0 to 3, with each of the following counting +1 if present: price-adjustment clause, earn-out clause, target indemnification of buyer. Standard errors clustered by the industry (2-digit SIC code) of the target. RISKY_CUR_LIAB is a dummy set to one if the standard deviation of the quarterly change in current liabilities in the target's industry (3-digit SIC code) is greater than the median for all industries. SEC_TARGET is a dummy set to one if the target is SEC registered. LN_T_CSHR is the logged number of record common shareholders. FINANCE is a dummy set to one if the target is a bank or other financial institution.

Panel B. Law firm experience, relative size, diversifying bids

	(5) All Targets		(6) Targets with Asset Data		(7) All Targets		(8) Targets with Asset and Ownership Data	
	Odds ratio	p-value	Odds ratio	p-value	Odds ratio	p-value	Odds ratio	p-value
BIG_BIDDER_LAW	0.299	0.029					0.001	0.000
T_AT_OVER_B_AT			1.312	0.797			0.352	0.009
NON_DIVERS_ SIC4					0.256	0.056	0.100	0.100
SEC_TARGET	0.015	0.000	0.019	0.000	0.008	0.000	0.126	0.152
RISKY_CUR_LIAB							8.913	0.043
LN_T_CSHR							0.398	0.001
N	120		88		120		57	
p-value of chi-sq	0.00		0.00		0.00		0.00	
Pseudo-R-squared	0.52		0.49		0.53		0.65	

Models are ordered logistic. Dependent variable is index of incidence of RAPs ranging from 0 to 3, with each of the following counting +1 if present: price-adjustment clause, earn-out clause, target indemnification of buyer. Standard errors clustered by the industry (2-digit SIC code) of the target.   Variables are as in Panel A, plus: BIG_BIDDER_LAW is a dummy set to one if the bidder's law firm is in the top quartile of BIDDER_LAW_ALL_SUM, which is the sum of reported deal volume for all law firms in Thomson's M&A data base over the period 2000-2006.   T_AT_OVER_B_AT is the ratio of the target's asset to the bidder's assets. NON_DIVERS_SIC4 is a dummy set to one if the target and bidder are in the same industry (4-digit SIC code).

Table 8. Summary data, risk-allocation design

	Mean	Median	Min	Max	N
Indemnity design					
Any type of basket or deductible?	90%				52
First-dollar basket?	26%				47
Deductible?	74%				47
Basket or deductible / bid value	0.8%	0.6%	0.06%	5.5%	47
Threshold?	92%				52
Threshold ($000) if > 0	171.2	50.0	5.0	1000.0	13
Threshold / bid value if > 0	0.03%	0.02%	0.002%	0.01%	13
Cap?	90%				52
Cap at bid value?	8%				47
Cap below bid value?	92%				47
Cap / bid value if indemnity	31%	15%	4%	300%	47
Survival period (months) if indemnity	15.1	12.0	6.0	27.0	52
Price-adjustment clause design					
Metrics:					
Working capital?	59%				44
Debt?	36%				44
Cash?	27%				44
Deal expenses?	23%				44
Other?	59%				44
Multiple metrics?	57%				44
Number of metrics	3.4	2.0	1.0	12.0	44
Closing date balance sheet method:					
GAAP?	16%				44
GAAP consistent with past practice?	36%				44
Other?	39%				44
Earn-out design					
Maximum possible value of earn-out ($mm)	23.8	11.3	0.5	97.3	8
Maximum possible value divided by total bid value exclusive of earn-out	72%	54%	8%	212%	8
Earn-out period (months)	17.0	12.0	6.0	36.0	8
RAP support design					
Escrow / bid value if > 0	12%	7%	0.1%	50%	34
Holdback / bid value if > 0	18%	15%	8%	33%	5
Debt consideration / bid value if > 0	27%	18%	0.1%	77%	14
More than one type of support if support>0?	24%				41
Total support / bid value if support > 0	21%	10%	0.1%	100%	41

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Table 9. Data on law firm experience and indemnity survival periods

Survival period (months) Standard deviation of survival period		Target Law Firm, *(based on TARGET_ALL_LAW_SUM)*		
		Newbie	Other	Top quartile
Bidder Law Firm *(based on BIDDER_ALL_LAW_SUM)*	Newbie	14 (7.8)	19 (5.4)	18 (--)
	Other	14 (4.5)	15 (5.0)	18 (1.2)
	Top quartile	--	12 (2.5)	13 (1.7)

Table 10. Data on law firm experience and indemnity caps as percentage of bid value

Cap on indemnity (% of bid value) Standard deviation of cap		Target Law Firm, *(based on TARGET_ALL_LAW_SUM)*		
		Newbie	Other	Top quartile
Bidder Law Firm *(based on BIDDER_ALL_LAW_SUM)*	Newbie	14 (9.1)	40 (51.7)	15 (--)
	Other	67 (107.6)	29 (30.1)	20 (26.9)
	Top quartile	--	13 (6.6)	11 (7.9)

Table 11. Models of RAP design: bid size, law firm experience, relative size, and high-tech industry

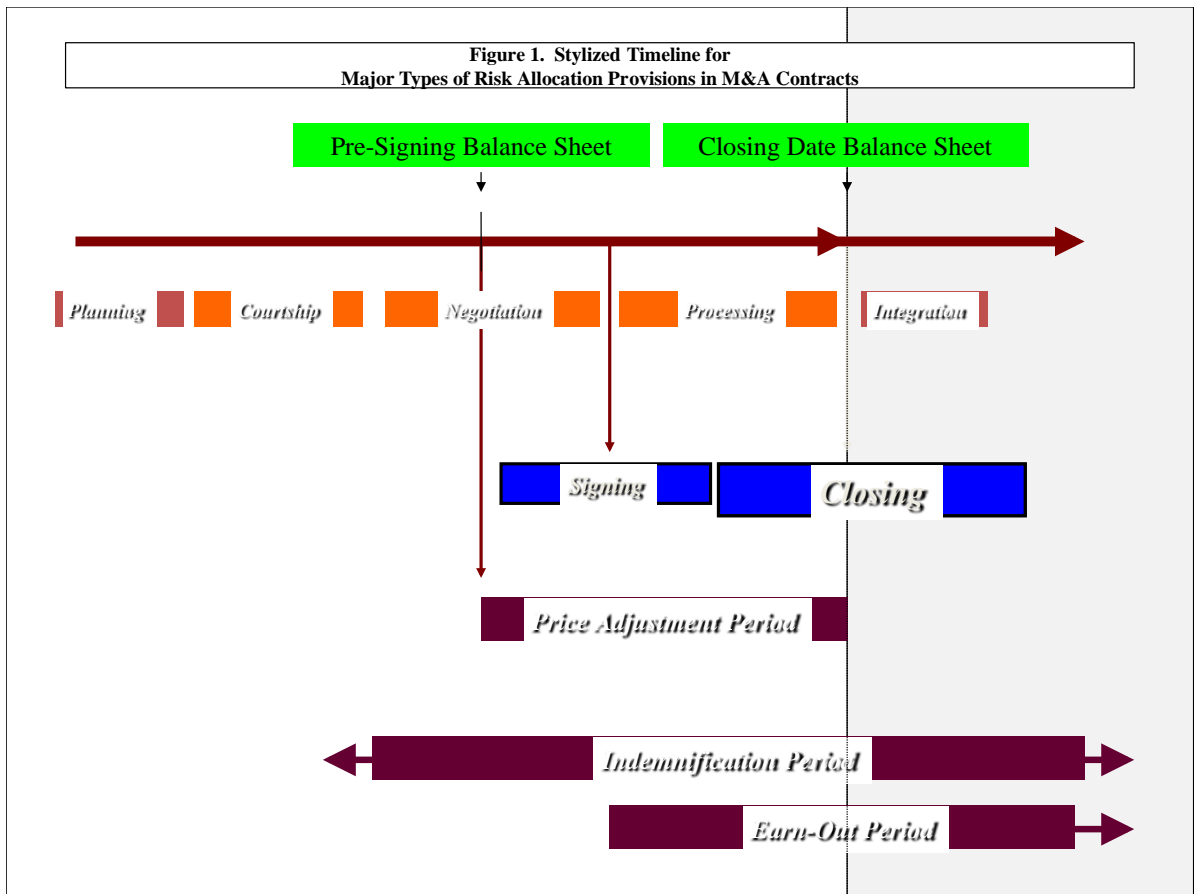|	(1)		(2)		(3)		(4)	
Subsample	All bids with indemnities		All bids with caps		All bids with baskets/deductibles		All bids with price adjustments	
Dependent variable	Survival (months)		Cap / bid value in basis points		Basket or deductible / bid value in basis points		Number of price adjustment metrics	
	Coef.	p-value	Coef.	p-value	Coef.	p-value	Odds ratio	p-value
CONSTANT	20.8958	0.000	949.533	0.006	52.000	0.257		
LN_BIDVALUE	-0.4203	0.361	-169.603	0.030	0.157	0.892	1.064	0.730
B_TO_T_LAWYER_RATIO	-0.0003	0.000	-0.099	0.003	0.003	0.000	0.999	0.045
T_AT_OVER_B_AT	-0.9313	0.067	5.956	0.889	103.110	0.232	1.174	0.362
MANUFACTURING	-1.428	0.318	98.353	0.634	117.700	0.610	3.399	0.388
HIGH-TECH	-3.4527	0.031	96.22	0.615	-68.600	0.952	3.931	0.178
OTHER	-5.5657	0.018	64.22	0.756	307.690	0.155	1.137	0.902
FINANCE	-0.3152	0.924	131.993	0.587	153.603	0.139	0.585	0.626
N	52		47		47		42	
p-value of chi-sq	0.00		0.00		0.00		0.05	
R-squared	0.32		0.42		0.20		0.04	

Models (1) through (3) are OLS; model (4) is ordered logistics. Dependent variable in model (1) is survival period of target indemnity (in months); in model (2), it is the ratio of the cap on the target's indemnity to the bid value; in model (3), it is the ratio of the basket or deductible in the target's indemnity to the bid value; and in model (4), it is the number of metrics used in the price adjustment clause. In models (2) and (3), the coefficients are stated in basis points (i.e., the value multiplied by 10,000. Standard errors clustered by target industry (2-digit SIC code). LN_BIDVALUE is the logged value of the bid in millions, which ranges from –0.69 to 9.9, with a mean of 4.2. B_TO_T_LAWYER_RATIO is the ratio of the bidder's law firm's deal volume in Thomson's M&A database for 2000-2006 to the target's deal volume (or 0.01 if the target's deal volume is zero), which ranges from zero to 1098, with a mean of 28.7. T_AT_OVER_B_AT is the ratio of the target's assets to the bidder's assets, which ranges from 0.0008 to 4.88, with a mean of 0.57. MANUFACTURING is a dummy set to one if the target's industry (based on Fama's five-industry classification) is 2; HIGH-TECH if it is 3; OTHER if it is 5; with FINANCE being broken out as a separate industry; the omitted industry is consumer (category 1) (there were two few healthcare targets (category 4) to use in any model, and too few finance deals to use in model (4)).

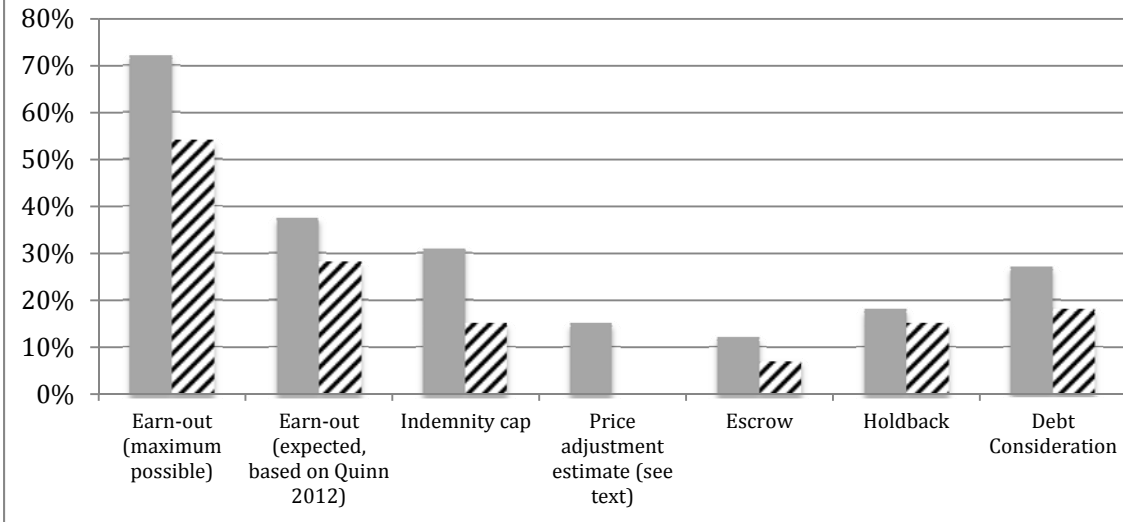Table 12. Models of RAP support: law firm experience and manufacturing

	(1)		(2)		(3)	
Subsample	All bids with RAP support		All bids with RAPs		All with escrows	
Dependent variable	Size of RAP support (Support / bid value in bps)		Use of escrow (0/1)		Size of escrow (Escrow / bid value in bps)	
	Coef.	p-value	Odds ratio	p-value	Coef.	p-value
CONSTANT	3070.699	0.069			1699.793	0.069
LN_BIDVALUE	-123.754	0.504	0.929	0.758	-176.752	0.344
B_TO_T_LAWYER_RATIO	1.848	0.001	0.999	0.034	0.599	0.012
T_AT_OVER_B_AT	289.380	0.781	0.925	0.809	538.881	0.448
MANUFACTURING	-2616.41	0.087	2.060	0.490	-932.389	0.044
HIGH-TECH	-1317.33	0.211	1.023	0.976	-500.290	0.210
OTHER	-1356.17	0.323	0.525	0.495	60.669	0.930
FINANCE	2253.14	0.192	0.218	0.369	-514.073	0.166
N	41		52		34	
p-value of chi-sq	0.00		0.03		0.02	
R-squared	0.48		0.08		0.12	

Models (1) and (3) are OLS; model (2) is a logistic. Dependent variable in model (1) is the ratio of RAP support – the value of any escrow, holdback, or seller financing – to the bid value; in model (2) is the use of an escrow; and in model (3) it is the ratio of the escrow to the bid value. In models (1) and (3), the coefficients are stated in basis points (i.e., the value multiplied by 10,000. Standard errors clustered by target industry (2-digit SIC code). LN_BIDVALUE is the logged value of the bid in millions, which ranges from – 0.69 to 9.9, with a mean of 4.2. B_TO_T_LAWYER_RATIO is the ratio of the bidder's law firm's deal volume in Thomson's M&A database for 2000-2006 to the target's deal volume (or 0.01 if the target's deal volume is zero), which ranges from zero to 1098, with a mean of 28.7. T_AT_OVER_B_AT is the ratio of the target's assets to the bidder's assets, which ranges from 0.0008 to 4.88, with a mean of 0.57. MANUFACTURING is a dummy set to one if the target's industry (based on Fama's five-industry classification) is 2; HIGH-TECH if it is 3; OTHER if it is 5; with FINANCE being broken out as a separate industry; the omitted industry is consumer (category 1) (there were two few healthcare targets (category 4) to use in any model).

Figure 1. Stylized Timeline for
Major Types of Risk Allocation Provisions in M&A Contracts

Pre-Signing Balance Sheet

Closing Date Balance Sheet

Planning   Courtship   Negotiation   Processing   Integration

Signing   Closing

Price Adjustment Period

Indemnification Period

Earn-Out Period

Figure 2: Earn-outs, Indemnity Caps and RAP Support
Size of Mean and Median Non-Zero
as % of Bid Value

Figure 3. Focal Points:
Survival Time for General Indemnification by Target