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The corporate group as an organizational form – Separating control from value appropriation

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Corporate groups are the all-but-universal legal structure of the modern firm. In view of the significant cost of establishing and operating a multitude of legal entities, the question arises whether the group form confers an efficiency advantage on firms, rather than an opportunity to exploit externalities from limited liability. Based on the economic contract theory, the paper advances the hypothesis that the group form can offer an organizational benefit: By centralizing control in the parent, it improves coordination as compared to market contracting. At the same time, the subsidiary's status as a legal entity and the fiduciary duties of its board of directors assures it a share of the surplus from intra-group transactions. Value appropriation by the subsidiary revives some of the motivational force of independent ownership for the managers and other stakeholders of the subsidiary. Creating a corporate structure for this purpose instead of an internal division allows the firm to rely on bankruptcy as an additional incentive and renegotiation device for the subsidiary.

I. Introduction: Why are firms organized as groups?

Students of corporate law often think of the firm as a single entity. The reality, of course, is far more complex. Any firm of considerable size appears to consist not of a single legal entity but of a multitude that together form a corporate group. While surprisingly little empirical research exists on the subject,¹ casual inspection of annual reports bolsters the common wisdom. To take three arbitrary examples, the British retailer Marks & Spencer boasts 108 subsidiaries, half of them in the UK and most fully owned; German carmaker BMW counts 21 subsidiaries in Germany and 157 abroad; and even the much smaller and less well-known cables and wires manufacturer Leoni from Nuremberg (Germany) harbors a total of 78 subsidiaries, 20 of them located in Germany.² For the one hundred largest US firms by revenues that were publicly listed, the average number of subsidiaries has been reported as 245.³

Why firms splinter their activities into different legal entities is puzzling. By contrast to joint ventures, subsidiaries are not used to cooperate with other firms. The group is characterized by unified control and – in substance but not in form – constitutes a single firm; in the words of the International Accounting Standards (IAS), it is perceived as a ‘single economic entity’.⁴ When the many are really one, why does it dress up as many? The riddle becomes even more bewildering when one realizes that running dozens or hundreds of entities is complicated and costly. Cutting the firm into several entities brings the often mandatory rules of corporate law as well as the formalities and transactions costs of legal contracts inside the firm. Depending on jurisdiction and legal form, each entity has to register and meet disclosure duties

¹ European Model Company Act, Chapter 16, Introduction, para 1 (‘the group of companies – and not the single company – is the prevailing form of the modern enterprise’); Oscar Couwenberg, ‘Corporate Architecture and Limited Liability’ (2008) 4 *Review of Law and Economics* 621, 629 (calling groups ‘ubiquitous’ but noting the dearth of empirical data).

² Marks & Spencer, Annual Report & Financial Statements (2016) 124–25; BMW Group, Geschäftsbericht (2015) 99–100; Leoni, Geschäftsbericht (2015) 223–25.

³ Richard Squire, ‘Strategic Liability in the Corporate Group’ (2011) 78 *University of Chicago Law Review* 605, 606 n 7 (also observing a median of 114).

⁴ Para 4 IAS 27 and appendix A International Financial Reporting Standard (IFRS) 10.

regarding the board of directors, possibly other officers, and amendments to the articles of incorporation. Shareholder meetings have to be held and recorded, even if they are mere formalities. In many jurisdictions, each entity has to keep, file and disclose separate accounts. Directors have to observe fiduciary duties on behalf of the corporation that can conflict more or less subtly with the demands of the controlling shareholder representing the interest of the group as a whole.⁵ The many faces of the firm also make it more difficult for outside parties to deal with. Because the borders of legal entities divide assets and obligations, creditors and other outsiders must pay attention to the particular entity they are contracting with; they may be well advised to undo the legal boundaries within the firm by insisting on guarantees or collateral from other group members. Overall, there is no denying the fact that the group as an organizational form causes significant transaction costs. This makes the original question even more pressing: What benefits does the group confer that justify the expensive complication?

The present contribution lays no claim to a comprehensive answer. Among the many reasons that one could adduce for the pervasiveness of groups, the following analysis only considers a single one, the potential benefits of the group in providing incentives to collaborators within the firm. The group is seen as a response to difficulties of motivation in organizations that rely on hierarchical command and control. The gist of the argument is that the group form allows firms to combine the benefits of centralized control with some remainder of decentralized ownership. In the spirit of the property rights theory of the firm, ownership is seen primarily as an entitlement to participate in the value from transactions involving the owner's assets. While the parent's control encompasses decision-making power over the use of the subsidiary's assets, fiduciary duties of directors and controlling shareholders require that the subsidiary receive a fair share in the surplus from transactions between itself and other group entities. The right to appropriate value is what remains of the subsidiary's ownership and of its status as a separate legal person. Its

⁵ Edward M Iacobucci and George G Triantis, 'Economic and Legal Boundaries of Firms' (2007) 93 Virginia Law Review 515, 560–64 (summarizing the contracting costs from intra-group transactions).

benefit for the organization can lie in improved incentives for managers, employees and other stakeholders in the subsidiary.

The following analysis explores the organizational efficiency rationale at a theoretical level, relying on developments in the economic literature on contracts and organizations. Whether the theoretical advantages actually arise and whether they influence the adoption of the group form must be left to empirical study. Even if the organizational account were shown to drive the decisions of firms, it is almost with certainty not the only explanation of why corporate groups exist. An alternative efficiency rationale from the extant literature is that by using legal entities to partition assets, creditors and other financiers can focus on monitoring different parts of the business activities of the firm. Assigning creditors to subsets of assets allows them to specialize and thereby to save on total monitoring costs for the firm.⁶ However, this approach at explaining the efficiency of the group has fallen out of favor recently as it seems hard to reconcile with the comprehensive use of guarantees and collateral across entities specifically for lenders that should be the most sophisticated monitors.⁷ The organizational theory proposed here avoids this critique.

Besides efficiency reasons, firms can use limited liability strategically to impose externalities on involuntary or less informed, ‘non-adjusting’ creditors.⁸ Depending on the nature of the externalities, they tend to distort decision-making, such as by reducing the deterrent effect of liability. At the very least, they can induce firms to incur the higher transaction costs of the group structure with no offsetting benefits.

⁶ For an early exposition of the information cost argument, see Richard A Posner, ‘The Rights of Creditors of Affiliated Corporations’ (1976) 43 *University of Chicago Law Review* 499, 516–17; see also Henry Hansmann and Reiner Reinier Kraakman, ‘The Essential Role of Organizational Law’ (2000) 110 *The Yale Law Journal* 387, 399–401.

⁷ Anthony J Casey, ‘The New Corporate Web: Tailored Entity Partitions and Creditors’ Selective Enforcement’ (2015) 124 *Yale Law Journal* 2680, 2683–85, 2688–92 (describing ‘cross-liabilities’ within the group but seeking to salvage the information cost hypothesis); Henry Hansmann and Richard Squire, ‘External and Internal Asset Partitioning: Corporations and Their Subsidiaries’ (2016) 11–12 (dismissing the specialized-monitoring hypothesis for corporate groups).

⁸ See Squire (n 3) for a recent and sophisticated externality explanation.

Other explanations for corporate groups are more technical.⁹ Often, firms take over other firms not through a merger or asset deal but by acquiring a majority or all shares in the respective corporation. The result of this operation is a group structure. There are multiple possible reasons for using a share deal. The applicable corporate law may not provide for the possibility of a merger, or it may be subject to restrictions (such as for cross-border transactions or the use of cash as consideration). Conversely, if corporate law fails to offer a spin-off or division as readily available transaction firms prefer to keep a business unit in a separate entity when they anticipate a later sale.¹⁰ Incorporating a subsidiary can facilitate doing business in a foreign jurisdiction because local market participants are more familiar with their own corporation law or because a branch office meets resistance from local authorities.¹¹ Tax law also can encourage the creation of groups in that subsidiaries allow to reliably locate assets and liabilities in order to shift profits to jurisdictions with lower tax burdens. Last but not least, regulation can foster the growth of group structures by either prescribing that certain activities be carried out in a separate entity or by promoting subsidiaries as a regulatory arbitrage strategy.¹² Motives like tax or regulatory arbitrage appear less desirable from an efficiency perspective. Evaluating the more technical reasons like facilitating acquisitions and cross-border trade is less straightforward. In this regard, the availability of the group form could at least help to mitigate other, more severe frictions.

The reality of corporate groups most likely reflects a broad range of causes not exhausted by the preceding list. The organizational theory advanced in this

⁹ Hansmann and Squire (n 7) 18–19 offer a number of candidate reasons.

¹⁰ Kenneth Ayotte and Henry Hansmann, ‘Legal Entities as Transferable Bundles of Contracts’ (2013) 111 *Michigan Law Review* 715 (explaining the benefits of separate entities in transferring contractual relationships).

¹¹ For the difficulties of setting up permanent establishments in the EU, see Marco Becht, Luca Enriques and Veronika Korom, ‘Centros and the Cost of Branching’ (2009) 9 *Journal of Corporate Law Studies* 171.

¹² An example is the restriction of insurance undertakings to either life or non-life insurance, art. 15 Solvency II Directive 2009/138/EC. For regulatory motives in the choice between subsidiary and establishment in international bank supervision, see Tobias H Tröger, ‘Organizational Choices of Banks and the Effective Supervision of Transnational Financial Institutions’ (2013) 48 *Texas International Law Journal* 177, 182–84, 193–97, 202–207.

contribution provides an additional potential explanation and rationale for corporate groups. Even when these organizational concerns do not guide the adoption of the group form, they could still remain important in the design of groups as well as in shaping a policy response from corporate law. Fiduciary duties offer an example. Once the firm spreads its activities over several entities, one cannot avoid the question whose interests the directors of a subsidiary ought to serve – those of the parent as controlling shareholder or those of the corporation? And if the latter, are the subsidiary’s interests to be conceived of as those of an independent firm? The question is at the heart of regulating corporate groups and is presently resurfacing in the European policy debate.¹³ As a practical matter, it is widely accepted that the parent wields control over the subsidiary and that corporate law should acknowledge this control.¹⁴ An organizational account of the group offers economic underpinnings for the law’s surprising acquiescence in the surrender of the subsidiary.

Because the group is seen as a single firm, the analysis starts from the fundamental question of why firms exist. Section II introduces control rights as a fundamental concept of economic contract theory. It identifies two important roles of control rights: Under the property rights approach, control rights permit an owner to capture part or all of the surplus created in a transaction. The allocation of control thus helps to incentivize investment in enhancing transaction value. Besides motivation, control rights also crucially serve to improve the coordination of productive activities by centralizing decision making. Section III brings these general insights to bear on the corporate group. It advances a particular reading of fiduciary duties: The board of the subsidiary is permitted to defer to the parent with regard to the coordinating function of control. It must, however, assert – and the parent must respect – the ownership component of the subsidiary’s control over its assets. The law thus seeks to combine

¹³ Pierre-Henri Conac, ‘Director’s Duties in Groups of Companies – Legalizing the Interest of the Group at the European Level’ [2013] *European Company and Financial Law Review* 194; Forum Europaeum on Company Groups, ‘Proposal to Facilitate the Management of Cross-Border Company Groups in Europe’ [2015] *European Company and Financial Law Review* 299, 303–305 (purporting a right of instruction for the parent); European Model Company Act (n 1), Chapter 16, Introduction para 5, § 9 (likewise).

¹⁴ To justify the parent’s right to instruct the subsidiary the European Model Company Act merely points out that ‘this power corresponds to reality’, European Model Company Act (n 1), Chapter 16, Introduction para 5.

transaction control by the parent with value appropriation by the subsidiary. The supposed advantage of this arrangement is to preserve some of the motivation of decentralized ownership. Finally, section IV addresses the thorny issue whether firms need corporation law to institute an organizational hybrid between centralization and decentralization. Firms routinely rely on divisions or profit centers to shape incentives but without necessarily reflecting these units in their group structure. But only legal separation can accomplish asset and liability partitioning. What emerges as a unique advantage of the group as a legal structure is the option to use the threat of isolated bankruptcy as an incentive device and, if need be, as a mechanism to renegotiate the firm's contractual relations specifically with the stakeholders of the subsidiary.

II. Control rights in the firm

A group involves the control of a parent over a subsidiary.¹⁵ To elucidate potential benefits of the group form, one first has to clarify the meaning of 'control.' This is more than a definition exercise. Rather, the notion of control cuts to the heart of the economic problem that justifies bringing decisions under the aegis of a firm, but also of limiting the scope and intensity of the firm's influence. The need for control and control rights arises from the limitations of contracting, specifically the inability of courts to enforce certain promises and the existence of private information (subsection 1.). Acknowledging these imperfections is essential in appreciating institutional responses such as firms in general and the corporate group in particular. The main hypothesis of the present contribution is that the group combines the parent's influence with some enduring independence of the subsidiary. This claim is based on a distinction between two economic functions of control rights, namely motivating collaborators and coordinating their behavior. These two aspects of control are explained in subsection 2.

¹⁵ Para 1, 2(a) IFRS 10 (requiring consolidated financial statements in case a parent controls one or several subsidiaries); §§ 1, 2 European Model Company Act (n 1), Chapter 16.

1. Control rights

The formal economic theory of contracts initially seemed to have no need and no place for control rights. The early literature focused on the distinction between private and public information. The only restriction on contracts was that they were confined to using public information.¹⁶ A key result was that the optimal contract should use *all* available information about an agent's behavior to incentivize him.¹⁷ The contract would link publicly observable information to payoffs for the parties; the paradigmatic example is performance-based compensation under a fully specified formula. Such a complete prescription leaves no room for decision-making rights during the course of the contractual relationship. The theory seemed not to accommodate decision-making rights by individual actors.¹⁸ Also, the optimal contract appeared unrealistically complex and dependent on changing circumstances, such as on the availability of information and the individual wealth of the parties.¹⁹

Control rights entered the stage as a response to a deficiency in contracting – the notion of ‘incomplete’ contracts. A contract does not become incomplete just because it fails to use *private* information (which would be outright impossible). Incompleteness refers to the case that an optimal contract would condition on a piece

¹⁶ Jean Tirole, ‘Incomplete Contracts: Where Do We Stand?’ (1999) 67 *Econometrica* 741, 753–54; Philippe Aghion, Mathias Dewatripont and Patrick Rey, ‘On Partial Contracting’ (2002) 46 *European Economic Review* 745, 753–54; Benjamin E Hermalin, Avery W Katz and Richard Craswell, ‘Contract Law’ in Steven Shavell and A Mitchell Polinsky (eds), *Handbook of Law and Economics*, vol 1 (Elsevier 2007) 72 (‘economic incompleteness’).

¹⁷ Bengt Holmström, ‘Moral Hazard and Observability’ (1979) 10 *RAND Journal of Economics* 74, 81–89; Steven Shavell, ‘Risk Sharing and Incentives in the Principal and Agent Relationship’ (1979) 10 *RAND Journal of Economics* 55. The ‘informativeness principle’ was originally formulated for risk averse agents, but it extends to limited liability settings, see the nuanced analysis in Pierre Chaigneau, Alex Edmans and Daniel Gottlieb, ‘The Informativeness Principle Under Limited Liability’ (2014) <<http://papers.ssrn.com/abstract=2488144>>.

¹⁸ But see below in the text for the role of ‘reports’ that can be interpreted as decision making.

¹⁹ Oliver D Hart and Bengt Holmström, ‘The Theory Of Contracts’ in Truman F Bewley (ed), *Advances in Economic Theory: Fifth World Congress* (Cambridge University Press 1987) 74 (‘monstrous state-contingent prescriptions’); Patrick Bolton, ‘Corporate Finance, Incomplete Contracts, and Corporate Control’ (2014) 30 *Journal of Law, Economics, and Organization* i64, i64–i65.

of *public* information that the real-world contract omits.²⁰ For instance, a contract could fail to specify the optimal quantity that a supplier has to deliver to a producer in a given economic environment that both parties observe (production costs, demand for the manufacturer's product, etc.). This inevitably leads to control rights for the parties: If the contract imposes no obligation, there is a bilateral control right to agree on a quantity. If the contractual obligation is misspecified, the buyer has a unilateral right to claim the stipulated quantity but the parties can agree to change it. Alternatively, each party could have a unilateral option right. In any of these cases, the gap in the contract leads to 'residual rights' to determine what the contract has failed to specify.²¹ Control rights arise as the 'residual' power to make those decisions that have not been stipulated in the contract or in a legal rule. Because in the absence of specific obligations the owner is free to dispose of an asset, property is a quintessential control right.

In legal and economic circles, the incompleteness of most real-world contracts is taken as a given. While there is no disputing that many contracts appear incomplete, understanding the causes is essential to evaluate potential remedies – such as differentiating control rights between parent and subsidiary in a corporate group. A first and rough explanation of incompleteness is that a fully specified contract would be too costly to negotiate and draft.²² But this can only be part of the answer because it is also a common view that courts can fill the gaps in incomplete contracts.²³ Even without the ability to describe all relevant contingencies, the contract or legal default

²⁰ Oliver Hart and John Moore, 'Foundations of Incomplete Contracts' (1999) 66 *Review of Economic Studies* 115, 134 ('if the parties would like to add contingent clauses, but are prevented from doing so'); Tirole (n. 16) 53–54.

²¹ For the term 'residual right,' see Sanford J Grossman and Oliver D Hart, 'The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration' (1986) 94 *Journal of Political Economy* 691, 692, 695.

²² Grossman and Hart (n 21) 695, 703 n 14; Oliver Hart and John Moore, 'Incomplete Contracts and Renegotiation' (1988) 56 *Econometrica* 755, 756–57; Oliver Hart and John Moore, 'Property Rights and the Nature of the Firm' (1990) 98 *Journal of Political Economy* 1119, 1125–26.

²³ A standard reference is Charles J Goetz and Robert E Scott, 'The Limits of Expanded Choice: An Analysis of the Interactions Between Express and Implied Contract Terms' (1985) 73 *California Law Review* 261. See also Hermalin, Katz and Craswell (n. 16) 70–75 (distinguishing 'literal' from 'economic' incompleteness).

rules could specify the desired outcomes in general terms.²⁴ For instances, it could be required that payoffs be allocated in a way that maximizes total surplus. In any particular contingency, a court would incorporate the term that attains efficiency under the circumstances. The main cause of contractual incompleteness, therefore, has to be the limited ability of the courts to fully appreciate the facts of the case and, by implication, what a complete contract would prescribe. The common phrase is that the information relevant for filling the gaps in the contract is ‘observable’ by the parties but ‘unverifiable’ by a court or other impartial enforcer.²⁵ Note that incomplete specification of the contract is one explanation for unverifiability: a poorly informed court may depend on a stipulation in the contract to learn about the relevant contingencies.²⁶

The assumption that the relevant contingency is unverifiable is often too stark. Although courts often face daunting difficulty in determining the efficient course of action, it would not seem fair to presume that their assessment, after lengthy hearing of evidence, lacks any information value, even if it contains a lot of random noise. To a limited degree, courts can verify almost every contingency and its implications for the contract.²⁷ Therefore, granting a party a right to unfettered control reflects more than just a natural constraint on judicial cognition; it is a design feature of the contract and applicable law. To take a well-known example from the corporate context, little suggests that a court’s evaluation of business decisions by managers is completely random. In fact, in judgments regarding personal liability of managers courts sometimes chastize the behavior in question but still grant it immunity under the business judgment rule.²⁸ The law thus deliberately dismisses a piece of information that a complete

²⁴ Eric Maskin and Jean Tirole, ‘Unforeseen Contingencies and Incomplete Contracts’ (1999) 66 *Review of Economic Studies* 83 (‘describability’ not needed for a complete contract as long as payoffs are specified and states of the world can be ascribed to desired payoffs).

²⁵ Hart and Moore (n 22) 759 (‘observable to the parties, [...] but] not *verifiable* to the court’); Hart and Moore (n 22) 1126 n 6 (‘... are *observable* even though they are not *verifiable*’).

²⁶ Hart and Moore (n 22) 759.

²⁷ Few contributions have explored this possibility: Benjamin E Hermalin and Michael L Katz, ‘Moral Hazard and Verifiability: The Effects of Renegotiation in Agency’ (1991) 59 *Econometrica* 1735; Oliver Gürtler and Matthias Kräkel, ‘Double-Sided Moral Hazard, Efficiency Wages, and Litigation’ (2010) 26 *Journal of Law, Economics, and Organization* 337.

²⁸ *Gagliardi v Trifoods Int’l* 683 A2d 1049, 1053 (Del Ch 1996) (‘that plaintiff regards the decision as unwise, foolish, or even stupid in the circumstances is not legally significant’).

contract, under the informativeness principle, would exploit to incentivize the manager.²⁹ There is excellent reason to insulate managers from judicial review: Other actors – the board, owners, the stock market – have lower information costs and better tools to incentivize managers. The standard legal remedy of monetary liability distorts risk-taking incentives and would have to be balanced by a steeper and more expensive compensation schemes.³⁰

Meanwhile, the observable-but-unverifiable paradigm appears too restrictive insofar as it confines control rights to settings where the relevant information is observable by the parties.³¹ Control rights also matter when information is not only unverifiable but also unobservable. An optimal complete contract can require and incentivize a party to report her private knowledge; the choice of announcement may well be considered an exercise of control.³² For instance, a fully verifiable pay scheme could

²⁹ This point is forcefully made by Holger Spamann, ‘Monetary Liability for Breach of the Duty of Care?’ (2015) <<http://www.ssrn.com/abstract=2657231>>.

³⁰ Andreas Engert and Susanne Goldlücke, ‘Why Agents Need Discretion: The Business Judgment Rule as Optimal Standard of Care’ [2016] *Review of Law and Economics* forthcoming; Andreas Engert, ‘Why Manager Liability Fails at Controlling Systemic Risk’ in Bertram Lomfeld, Alessandro Somma and Peer Zumbansen (eds), *Reshaping Markets: Economic Governance, the Global Financial Crisis and Liberal Utopia* (Cambridge University Press 2016) 161, 164–66, 177–80. Even if courts were able to adjust liability to produce a beneficial incentive effect overall, the improvement over other arrangements would remain minuscule and not justify the significant litigation costs, see Spamann (n 29).

³¹ The observability assumption distinguishes an incomplete contract from a complete one that still can use only public information. Observability thus emphasizes the new constraints added by the lack of verifiability. See n 16 and Hart and Moore (n 22), 756 (‘Note that a distinction can be drawn between problems [...] from contractual incompleteness and [...] from asymmetries of information, although the overlap between the two is considerable.’). Observability has been a central assumption for methodological reasons: The formal analysis of incomplete contracting started from the issue of ex post renegotiation of contracts as an impediment to incentivizing the parties ex ante (below II.2.a)). Including private information in ex post renegotiations would have distracted from this tradeoff as different informational assumptions lead to vastly different renegotiation outcomes. Also, observability allows informal sanctions, leading to an analysis of relational, implicit contracting as a partial remedy for incompleteness in explicit contracts, as in W Bentley MacLeod and James M Malcomson, ‘Implicit Contracts, Incentive Compatibility, and Involuntary Unemployment’ (1989) 57 *Econometrica* 447; George Baker, Robert V Gibbons and Kevin J Murphy, ‘Relational Contracts and the Theory of the Firm’ (2002) 117 *Quarterly Journal of Economics* 39. Recently, however, proponents of the incomplete-contracting approach have themselves invoked information asymmetries to dismiss the objection that certain sophisticated mechanisms could overcome non-verifiability, see Philippe Aghion and others, ‘Subgame-Perfect Implementation under Information Perturbations’ (2012) 127 *Quarterly Journal of Economics* 1843.

³² Of course, the contract optimally seeks to induce a truthful report or ‘decision.’ In fact, the fundamental revelation principle implies that no set of rules can do better than a direct revelation mechanisms in which the players are asked to announce their private information to

push a manager to reveal her best ideas on behalf of the firm. Shaping decision-making rights and incentivizing decision-makers influences whether private information will be acquired in the first place. Straightforward examples include information of a creative or evaluative character, such as finding the most promising strategy or assessing an employee's performance.³³ By encouraging the production and disclosure of information, control rights can become a source of observable information that would not exist without them. Therefore, the scope and assignment of roles like that of manager is a design problem for an optimal (complete) contract. Clearly, unobservable information is another reason for control rights to exist and for how they should be designed and allocated.

2. Functions of control rights

Given that control rights inevitably arise, attention turns to how they should be assigned. The answer will rest on the efficiency functions that control right allocations can serve. In the following, two such functions will be identified. The first builds on the power to capture economic value contained in the controlled asset. As such, distributing existing value one way or another does not change the outcome in terms of efficiency. However, being able to appropriate a larger share of surplus ex post increases the incentive to invest ex ante. Control rights in their role as ownership motivate greater effort in value creation (subsection a)). The second function of control rights relates to *Coase's* insight that firms substitute a hierarchy

an arbitrator who responds by suggesting individual strategies, Roger B Myerson, 'Incentive Compatibility and the Bargaining Problem' (2002) 47 *Econometrica* 61, 63–67.

³³ How allocating control rights in organizations creates incentives for information production is a key contribution of Philippe Aghion and Jean Tirole, 'Formal and Real Authority in Organizations' (1997) 105 *Journal of Political Economy* 1. For the second example in the text, consider the literature on subjective (i.e., unverifiable) performance evaluation George Baker, Robert Gibbons and Kevin J Murphy, 'Subjective Performance Measures in Optimal Incentive Contracts' (1994) 109 *Quarterly Journal of Economics* 1125; evaluation as private information figures inter alia in Helmut Bester and Johannes Münster, 'Subjective Evaluation versus Public Information' (2016) 61 *Economic Theory* 723.

for the price mechanism and for bargaining in markets.³⁴ To subject production to hierarchy, the firm has to mute divergent ownership incentives (subsection b)).

a) Motivation

The motivational function of control rights has been elaborated in the ‘property rights’ theory of the firm.³⁵ The corresponding model consists of two stages:³⁶ Ex ante, the parties have to make investments that increase the expected surplus from an intended transaction; ex post, they decide whether to consummate the transaction. The ex post trade should only occur if it creates positive surplus, such as when a seller’s production cost exceeds a buyer’s valuation. Because the initial contract is incomplete, it cannot stipulate the circumstances under which trade should take place. Instead, it only establishes control rights for the parties. Different control-rights allocations correspond to ‘integration’ in a firm and ‘non-integration.’ If the seller has control (ownership) over all assets needed in the transaction, she alone decides, bears the production costs and captures the benefits from using the good. The converse applies under integration in a buyer-owned firm. But control over the assets can also be divided. In this case, each of them has to agree to the transaction and will insist on receiving a share in the surplus, resulting in a market transaction at some price between the buyer’s valuation and the seller’s production cost.

The efficiency of the ex post decision is of no concern for the property rights approach. By assuming full observability of all relevant circumstances (production cost and value of the good), the model ensures that only surplus-creating transactions are carried out irrespective of the allocation of control rights: An integrated firm produces whenever the value of the good exceeds the cost; without integration, the parties likewise agree to trade if and only if it is efficient.

³⁴ Ronald Coase, ‘The Nature of the Firm’ (1937) 4 *Economica* 386, 388 (‘in place of the complicated market structure with exchange transactions is substituted the entrepreneur-coordinator, who directs production’).

³⁵ The seminal articles are Grossman and Hart (n. 21) and Hart and Moore (n. 22).

³⁶ See Tirole (n. 16) 745–49 for an exposition.

The property rights view instead focuses on the parties' ex ante effort to increase the chance of a large surplus. A key ingredient of the theory is that a contract cannot allocate control over these investments. For instance, although an integrated buyer firm has full control over the seller's ex post production it cannot direct the seller's ex ante investment. One straightforward explanation is that investments are tied to inalienable human capital, as when the seller has to put mental effort into developing or designing the good. In addition, the investment is thought to be neither observable nor verifiable; if it were, the buyer firm could simply pay the seller for making the investment. The only way ex ante investment shows, albeit noisily, is in surplus from trade ex post. A complete contract would set a pricing rule for transactions to share surplus in a way that incentives for ex ante investment are optimal. Yet courts cannot verify whether and how much surplus is available. Therefore, it is only the allocation of control rights that determines the distribution of value from the transaction: In an integrated firm, the owner of the firm captures all of the benefit. Without integration, each party's share in the surplus is determined in ex post bargaining. Even if the original contract contained a sharing rule, it would be subject to renegotiation as the parties can renege on their unverifiable and hence unenforceable obligations.³⁷ Contractual incompleteness, in the property rights view, is the inability to commit to ex post rewards for ex ante investment. Control rights act as a coarse substitute for an optimal sharing rule.³⁸

The property rights theory is meant to predict the optimal boundaries of the firm, that is, the choice between integrating production and sourcing supplies in the market ('make or buy'). Integration is understood as uniting assets under single ownership, allowing the owner to appropriate all surplus from employing the assets. Whether and how integration should take place depends on the weight of the parties' investments: Integration under the ownership of the buyer entices optimal effort by the buyer but destroys any incentive to invest for the seller. Likewise, non-integration with divided ownership leads to positive but suboptimal ex ante

³⁷ For relational contracting as a curb on opportunistic renegotiation, see Baker, Gibbons and Murphy (n. 31).

³⁸ If one applies the Nash bargaining solution, different allocations of property rights only allow either the seller or the buyer to reap all surplus or a 50% split.

investment on both sides. As the title of the seminal article of the property rights literature highlights,³⁹ ownership causes both ‘benefits’ – better incentives for the owner – and ‘costs’ – lesser incentives for the non-owner.

b) Coordination

Not all control rights serve to distribute value. Clearly, the authority of the board of directors in a corporation is not meant as a lever to appropriate value for the directors. The scope and allocation of control rights often aim at improving the very decisions over which the rights give control – the ex post decision to trade in the property rights model. Considering the efficiency of the controlled decision pursues the original idea of *Coase* that firms and markets are two different ways of making decisions, ‘alternative methods of co-ordinating production.’⁴⁰ Whether a firm or the market is the better coordination method depends on the costs of decision making or ‘transaction costs’ for short, which include the costs of incentive misalignment, bargaining failure, and the like. Property rights theory captures just one, albeit important, aspect of control and the market-firm divide.⁴¹

(1) Coordination failure under non-integration

To understand how control affects the potential for value-creating cooperation, one best begins with the divided allocation of control rights that characterizes markets. A transaction then requires an agreement between parties. A first potential inefficiency of market contracting stems from *private information*. Suppose two parties, say a supplier of car engines and a manufacturer, face a trading opportunity. Both have differentiated their products to increase surplus and reduce competitive pressure. Because demand for their final product, as a result, is less than perfectly elastic, the two parties jointly face the familiar tradeoff between elevating prices, which as such

³⁹ Grossman and Hart (n 21).

⁴⁰ Coase (n 34) 388.

⁴¹ The more comprehensive view is often referred to as ‘transaction cost economics’, see Oliver E Williamson, ‘The New Institutional Economics: Taking Stock, Looking Ahead’ (2000) 38 *Journal of Economic Literature* 595, 605–607. Initiators of the property rights approach willingly acknowledge its limitations, O Hart and J Moore, ‘Contracts as Reference Points’ (2008) 123 *The Quarterly Journal of Economics* 1, 2 (‘emphasis on noncontractible *ex ante* investments seems overplayed’).

raises revenues, and lowering prices to increase demand. Assuming that both the car maker and the supplier have specialized, each of them possesses some amount of market power. If they set prices independently, the final price for cars will be above that of a single, integrated firm and fail to maximize their combined profits ('double marginalization').⁴² This implies that the two parties could gain from coordinating their pricing. But private information gets in the way of a mutually beneficial agreement: The supplier's production cost for the engines are private information, as is the manufacturer's production costs and possibly the demand function for the cars. The supplier is inclined to pretend high costs to improve her bargaining position, and correspondingly for the manufacturer. It is a well known result that often no bargaining protocol or other mechanism can ensure an agreement even if there were gains from trade.⁴³ Cooperation opportunities are lost to bargaining impasse. In a competitive market, the problem would be less acute because competition tends to force traders to reveal their costs and valuations. But competition provides no help for the extra value that only a specialized supplier can deliver for the particular manufacturer.

Another inefficiency of divided control can arise from the parties' inability to commit to a course of action. The literature often refers to this *limited commitment* as non-contractibility 'ex post' to distinguish it from the lack of commitment to ex ante investment.⁴⁴ An action is non-contractible⁴⁵ insofar as verifying it – or important

⁴² In competition theory, the greater concern is the loss in consumer surplus.

⁴³ Roger B Myerson and Mark A Satterthwaite, 'Efficient Mechanisms for Bilateral Trading' (1983) 29 *Journal of Economic Theory* 265, 273. The result presupposes a positive probability that the transaction produces no (positive) surplus. For an analysis of the issue in the context of ex post bargaining, see Niko Matouschek, 'Ex Post Inefficiencies in a Property Rights Theory of the Firm' (2004) 20 *Journal of Law, Economics, and Organization* 125.

⁴⁴ Aghion, Dewatripont, and Rey (n. 16) 746–47; George Baker, Robert V. Gibbons and Kevin J Murphy, 'Contracting for Control' (2006) 2–4, 10–12; George P Baker, Robert Gibbons and Kevin J Murphy, 'Strategic Alliances: Bridges Between "islands of Conscious Power"' (2008) 22 *Journal of the Japanese and International Economies* 146, 147, 153; Patrick Bolton and Mathias Dewatripont, 'Authority in Organizations' in Robert V. Gibbons and John Roberts (eds), *Handbook of Organizational Economics* (Princeton University Press 2013) 342, 344.

⁴⁵ Ex post non-contractibility is often assumed but rarely explained and justified. A remarkable exception is Eric Van den Steen, 'Disagreement and the Allocation of Control' (2010) 26 *Journal of Law, Economics, and Organization* 385, 394–95. The argument in the text should be consistent with Van den Steen's view. Note that *Hart* and *Moore* are advocating 'shading' as an alternative justification of unilateral control rights, see Oliver Hart and Bengt Holmstrom,

aspects of it – is too costly or impossible. There is, for example, a significant difference between a task carried out with genuine attention and ‘perfunctory’ performance;⁴⁶ while the other party perceives the difference, courts will find it hard to distinguish the two. Moreover, in spite of the label, ‘ex post’ non-contractability can involve commitment over time: Verifiability becomes more troublesome and unavailing when an efficient strategy requires a sequence of decisions in response to information that arrives only later and is hard to evaluate. Such a complex decision scheme can be needed to coordinate different parties and to implement a strategy consistently over time.⁴⁷

A last potential failure of coordination, *underspecialization*, returns to the matter of ex ante investment. Now, however, control rights function not only to motivate investment but also to guide it. In the property rights model, the holdup problem occurs because the investment is relation-specific in the sense that the parties can garner respective surplus only within the relationship, not with outside partners. The problem is highly relevant because specialization is the primary source of value creation in firms; only differentiation from other producers confers a competitive advantage that allows profits beyond factor costs.⁴⁸ Yet if control over investment decisions is spread over several parties, specialization tends to fall short. To the extent investments in assets are made by different owners, they will be concerned that greater specialization increases the threat of ex post holdup and expropriation.⁴⁹

‘A Theory of Firm Scope’ (2010) 75 *Quarterly Journal of Economics* 483, 484–86, 488–89, n. 10, 492–93; Hart and Moore (n. 41); an exposition can be found in Oliver Hart, ‘Reference Points and the Theory of the Firm’ (2008) 75 *Economica* 404.

⁴⁶ The term is borrowed from Hart and Moore (n. 41).

⁴⁷ The need to commit to a uniform strategy excludes the possibility to negotiate over each decision, paying off other participants who would favor a different strategy, see the (second) objection raised in Hart and Holmstrom (n 45) 488 n 10.

⁴⁸ Raghuram G Rajan, ‘Presidential Address: The Corporation in Finance’ (2012) 67 *Journal of Finance* 1173, 1176–77.

⁴⁹ This variation on the original property-rights theme is an important element in Baker, Gibbons and Murphy (n. 31); specialization of human capital is at the heart of Raghuram G Rajan and Luigi Zingales, ‘Power in a Theory of the Firm’ (1998) 113 *Quarterly Journal of Economics* 387; Raghuram G Rajan and Luigi Zingales, ‘The Firm as a Dedicated Hierarchy: A Theory of the Origins and Growth of Firms’ (2001) 116 *Quarterly Journal of Economics* 805.

In addition, the various participants may genuinely disagree about the most promising strategy, impeding coordination one particular specialization.⁵⁰

(2) Centralizing control

The main characteristic of firms is that control rights are centralized with a single natural or legal person, the entrepreneur or corporation. The property rights approach hardly explains this extreme concentration of control rights. If all that mattered were the incentives of stakeholders to invest in the joint production activity, one would expect to observe more ownership in the hands of these contributors. Instead of spreading (fractional) property rights in assets across collaborators to create incentives, most of them are amassed with the owner of the firm.⁵¹ The firm seems to reflect a tradeoff between encouraging investment and centralizing control to promote coordination.

Centralizing control rights facilitates coordination regarding the decisions directly governed by the respective right. Control rights concern the use of assets, but they also extend to the behavior of employees and other contributors. Even if a contract cannot pin down an efficient course of action in an enforceable way, it may still be possible to assign a control right:⁵² Execution of a specific action selected by a controller can be verifiable.⁵³ An example is the employer's right to direct the employee. However, actions and decisions in many respects cannot be directly governed by control rights. This applies most evidently to human behavior. For obvious reasons, a natural person cannot be fully 'owned' and controlled by another. At any more demanding and sophisticated task, a person's behavior will cease to be fully verifiable, as when an employee has to devote attention, intellectual effort and perhaps creativity to a task.

⁵⁰ Rajan (n. 48) 1177–78; for disagreement generally see Van den Steen (n 45).

⁵¹ Bengt Holmstrom, 'The Firm as a Subeconomy' (1999) 15 *Journal of Law, Economics, and Organization* 74, 87–88.

⁵² For the assumption of contractible control, see the references in n 44.

⁵³ This dispels the (first) objection by Hart and Holmstrom (n 45) 488 n 10 that if decisions are non-contractible, then so should be decision rights.

The firm then needs to mold incentives to guide behavior. The property rights literature suggests that assigning control rights over assets is one way to incentivize collaborators. It is, however, a rather blunt method because it can only give the other party a share in transaction surplus through ex post bargaining power. By its own account, the property rights approach only matters if contractual incompleteness precludes more efficient incentives. The opposite strategy is to concentrate ownership rights with the firm in order to provide tailored incentives for coordination. The greater freedom in shaping incentives is the flip side of what the property rights approach considers the ‘cost’ of centralized ownership, namely the muting of ownership incentives. While the other party as owner would be more willing to invest in the asset, tying her rewards to the asset also distorts her incentives. At the heart of ownership is the right to withhold the asset and deploy it to an alternative use. It is this outside option that gives the owner bargaining power and allows her to claim a share in transaction surplus. The amount of bargaining power and appropriable surplus depends on the value of the asset in its next best use. Therefore, the owner has a strong incentive to increase the outside value of the asset. Not only can this incentive conflict with the optimal degree of asset specialization.⁵⁴ It also can lead the owner to devote excessive effort to increasing asset value and insufficient effort to other surplus-enhancing tasks that do not materialize in a particular asset (for instance, providing customer service for the firm’s product).⁵⁵ It is easier to induce a non-owner employee to spend time and specialize on such tasks because one need not overcome conflicting incentives from property rights in particular assets. Specifically, centralizing ownership increases the firm’s power in relation to its employee. Since the employee cannot break off a specialized asset but only her own human capital, the firm can more credibly commit to firing the employee if she does not follow orders or shirks. In addition, the non-owner employee has little private interest in how the firm conducts its business. Paying her

⁵⁴ On insufficient specialization as a coordination failure, see above the text accompanying n. 49.

⁵⁵ Bengt Holmström and Paul R Milgrom, ‘Multitask Principal-Agent Analyses: Incentive Contracts, Asset Ownership, and Job Design’ (1991) 7 *Journal of Law, Economics, and Organization* 24, 35–38; Bengt Holmstrom and Paul Milgrom, ‘The Firm as an Incentive System’ (1994) 84 *American Economic Review* 972 (arguing that it is optimal to combine *either* decentralized ownership with high-powered incentives and free choice of work conditions *or* centralized ownership with low-powered incentives and close supervision).

a fixed salary above her reservation wage can suffice to induce effort and obedience.⁵⁶ Centralizing control over assets strengthens indirect control over people and their actions ('authority').⁵⁷ The firm becomes an 'island of conscious power'⁵⁸ to supplant bargaining in the marketplace.

Centralized control can address the coordination failures identified above. As regards *private information*, integration mitigates the incentive to preserve and to exploit an informational advantage.⁵⁹ Centralizing ownership turns an independent contractor into an employee whose tools and inputs are paid for by the firm. By and large, this implies a shift from a pay-for-performance contract (for instance, a fixed price conditional on delivery) to a 'cost-plus' contract where the firm covers expenditures and pays a fixed wage for the employee's work (plus possibly a modest reward for performance). The 'cost-plus' scheme eliminates the incentive to overstate costs in order to improve the supplier's bargaining position.⁶⁰ An employee more readily agrees to an inspection right than an independent contractor.⁶¹ Only the employee's

⁵⁶ The argument is not that the employee is easier to incentivize because she is poor. Rather, the point is that she does not own assets *used in the firm*. Therefore, she does not face the decision to redeploy the asset, only her human capital.

⁵⁷ Eric Van den Steen, 'Interpersonal Authority in a Theory of the Firm' (2010) 100 *American Economic Review* 466, 475–76. The driver in Van den Steen's model is potential disagreement over business strategy. Absent centralization, dissenters would be tempted to withdraw their assets to put them to better use (as they perceive it).

⁵⁸ Dennis H Robertson, *The Control of Industry* (Nisbet 1923) 82; cited by Coase (n 34) 388. See also Holmström (n 51) (firm as a 'subeconomy').

⁵⁹ But see Grossman and Hart (n 21) 695 n 3 (questioning that integration changes the information structure); Matouschek (n 43) 128, 142 (likewise).

⁶⁰ Patrick Bajari and Steven Tadelis, 'Incentives versus Transaction Costs: A Theory of Procurement Contracts' (2001) 32 *RAND Journal of Economics* 387, 395–97 (efficiency of renegotiation under a cost-plus as opposed to a fixed-price contract); Steven Tadelis, 'Complexity, Flexibility, and the Make-or-Buy Decision' (2002) 92 *American Economic Review* 433 (applying the former result to the integration decision).

⁶¹ This is more subtle than first meets the eye because a manufacturer and an independent supplier could also agree on inspection rights to reduce ex post inefficiencies. There, however, the other party would have less incentive to ensure the confidentiality of valuable information obtained incidentally in an inspection. By contrast, a firm has every incentive to preserve information from an internal audit.

own effort remains private information. While she will be inclined to exaggerate her personal cost, the problem is significantly reduced.

The second possible coordination failure under non-integration relates to *limited commitment* or ex post non-contractibility. Centralizing control directly addresses this problem insofar as it allows the firm's owner or her hired managers to implement a consistent strategy. Of course, concentrating control in one party comes at a cost. As the controller pursues only her own interests, it is a natural tenet that she should bear the (marginal) consequences of her decisions. Exercising centralized control should, as a general rule, be accompanied by a right to the firm's (residual) cash flow.⁶² Inefficiencies arise if other contributors enjoy private benefits that the controller fails to internalize.⁶³ A unilateral control right enables the controller to execute her strategy even against other parties whose private interests are affected by it. Like under the property rights view, control rights continue to distribute value between the parties. Acquiring control rights in a contract therefore usually requires compensating the parties that subject themselves to control.

Finally, integration can also foster *optimal specialization*. This is evident where the firm as owner of an asset can determine how the asset is specialized. But even when specialization refers to human capital investment, control over relevant assets and authority over people enables the firm to choose the particular activities employees engage in, thereby determining the specialization employees build in the process.⁶⁴ Letting the collaborator own the asset as an independent contractor would introduce his concern for the outside value of both the asset and her human capital, leading to underspecialization. Once employees specialize, they are tied more to the firm, facilitating the exercise of authority: human capital sticks to assets.

⁶² This is of course the standard argument for uniting control and the residual claim in the firm, Armen A Alchian and Harold Demsetz, 'Production, Information Costs, and Economic Organization' (1972) 62 *American Economic Review* 777, 782–83.

⁶³ See Hart and Holmström (n. 45) 486 (private benefits from 'job satisfaction broadly defined'); Baker, Gibbons and Murphy (n. 44).

⁶⁴ Rajan and Zingales (n. 49) 389–91, 395–411 (access to asset or critical resource as a way to incentivize specialized investment); Rajan (n. 48) 1178–84.

III. Control rights in the corporate group

The discussion so far has contemplated control rights and control in the firm or indeed in any hierarchical organization. In applying these concepts to the corporate group, one should first characterize the allocation of control rights. By adopting a group structure, the firm divides itself into at least two entities. While the group is commonly defined by the parent's control over its subsidiaries, the existence of multiple entities suggests a more complex distribution. Subsection 1 proposes to understand the group structure as splitting control along the two functions identified above. Subsection 2 explores how such an arrangement could improve incentives as compared to the unitary firm.

1. The group as integration and non-integration

The corporate group is a hybrid between integration and non-integration: The subsidiary as a separate legal entity holds its own rights and obligations. In particular, the parent legally does not own the subsidiary's assets even though the latter may be specialized to the parent's assets. At the same time, the parent is by definition a 'controlling' shareholder of the subsidiary and as such influences how the subsidiary's assets are employed. The parent exercises its control through its shareholder rights. Accordingly, corporate law governs the scope and limits of the parent's control.

a) The parent's control over the subsidiary

Control matters when the parties cannot contractually commit to ex ante investment and ex post decisions. To establish the parent's control over the subsidiary, the latter could assign a control right to the parent empowering it to issue binding orders to the subsidiary or its management. In practice, there appears to be little need for an explicit arrangement.⁶⁵ It is largely taken for granted that the managers of the subsidiary follow the directions of a controlling shareholder even without an explicit control right. The reason resembles the one for the authority of a unitary firm over its

⁶⁵ But see § 308 AktG (German Stock Corporation Act) ('domination agreement' establishes right to issue instructions to subsidiary's management board) and § 9 European Model Company Act (giving the parent a statutory right to instruct the subsidiary's management).

employees: Having the power to replace directors, a controlling shareholder can threaten to withhold the asset – the subsidiary – to which the manager’s human capital is specialized and to cut off the corresponding income stream. Unless the law provides for effective constraints, the ability to terminate directors usually forces the subsidiary’s managers to conform. As an additional source of influence, the parent can elect its own managers and employees to the subsidiary’s board. As such envoys remain subject to the hierarchy and incentive system of the parent, they likely follow the parent’s game plan.

Capturing the subsidiary’s management delivers to the parent control over the subsidiary’s assets and hierarchy. But effective coordination also requires information. For instance, to set the optimal output for the car manufacturer (subsidiary) and the amount of engines to be delivered, the supplier-parent should know the demand for the manufacturer’s cars as well as its production costs. The parent also must be able to observe whether her orders have been followed. As a general matter, to overcome limitations of market contracting, it has to be that the parent as controller can use information that would not be verifiable or observable in a contractual relationship between independent parties.

Access to information is facilitated significantly by the parent’s centralized control. Since directors and managers do not own the subsidiary or its assets, they themselves have less incentive than an independent firm to withhold information. Through their authority over managers, the parent can also force the subsidiary to disclose information or otherwise become more transparent to the parent: Besides intra-group reporting or on-site inspections, the parent can place its employees at various levels of the subsidiary’s hierarchy. The prospect of returning to the parent organization or of being sent elsewhere in the group ties their loyalty to the parent rather than to their formal employer. The parent can also link incentive pay to the success of the overall group, making employees more willing to share information. All of this gives a parent-supplier of car engines a far better chance to estimate the subsidiary-manufacturer’s demand and production costs than an independent supplier would have.

From a legal perspective, one may wonder whether the practices just described conform to the fiduciary duties of directors and controlling shareholders.⁶⁶ Directors of a stand-alone corporation would never concede such far-reaching access to an outsider. The parent owes its deep insight to what would constitute an outrageous conflict of interest of the directors if the interest of the subsidiary were that of an independent corporation. If group integration is to be accomplished, the law must, implicitly or explicitly, license such behavior by redefining the subsidiary's interests.

The benefits of parent control are those generally associated with integration, namely improved coordination. Double marginalization is a case in point. The production costs of an independent supplier for car engines are private information, as are the production costs of the manufacturer and possibly the shape of the demand function it faces. In view of the true costs, both parties would maximize their joint profits by producing larger quantities. But because production costs are private information, both parties have an incentive to overstate their costs to justify a higher price and to capture a larger share of surplus, thereby reducing output and diminishing total surplus. If integration permits the supplier to uncover the manufacturer's production costs, the supplier – as parent – has all information needed to determine the optimal level of production for engines and cars.

b) The subsidiary's remaining ownership

So far, it appears that the parent should wield unfettered control over the subsidiary through its influence on directors and the rest of the subsidiary's hierarchy. For the group to constitute a hybrid form in an economic sense, there needs to be a more substantive difference from a unitary firm beyond the mere formality of a separate legal entity. The subsidiary has to retain some part or aspect of its control rights. One plausible split is between the two functions of control rights, coordination and motivation: the power to direct how assets are used and the right to appropriate their value. The parent can exercise control over how the subsidiary's assets and the

⁶⁶ A liberal approach is adopted by European Model Company Act (n 1), Chapter 16, § 10 (right of parent to request information). The issue has been discussed extensively under German law, see Florian Mader, *Der Informationsfluss im Unternehmensverbund* (Mohr 2016).

human capital attached to them are employed. But the subsidiary remains entitled to claiming the value generated from its assets and operation.

How the group form under corporate law separates control from value appropriation requires some elaboration. The first element is allowing the subsidiary's board of directors to defer to the demands of the parent. It bears repeating that opening the subsidiary to the parent's influence leads to decisions that an independent firm would never take, such as revealing private information about production costs, expanding output to increase the parent's profits or specializing to the parent's needs more than a stand-alone business would do. Control of the parent over the subsidiary hinges on the law's admitting such influence. At the same time, the fiduciary duties of the subsidiary's directors remain in place. They continue to run to the subsidiary, not the parent. The directors are still expected to assert the interests of the subsidiary against the parent. Licensing control by the parent while emphasizing the self-interest of the subsidiary poses an apparent contradiction. It can be resolved when the subsidiary's gain is understood as purely financial: The subsidiary subordinates itself to the strategy and greater good of the group. In exchange, it must receive a share in the total surplus that its contribution helped to create.

Securing a fair share for the subsidiary within the group poses a very different challenge from value distribution between independent parties. In the classic property rights model, divided ownership (non-integration) means that either side can put its assets to the next best use. Outside options determine the surplus from the contemplated transaction and the distribution of bargaining power. Each party can capture a share in the surplus because she can threaten to walk away from the deal. The symmetry of the threat usually leads to an assumption that surplus is split evenly. By contrast, centralized control in the group setting implies that the parent alone decides over the transaction and its volume. The very purpose of integration in a group is to eliminate the subsidiary's outside option to mitigate information problems and other coordination failures.⁶⁷ If control by the parent is an intended feature of the group, wresting control from the parent – for instance, by making the

⁶⁷ Group integration also fosters ex ante investment by the parent insofar as value captured by the subsidiary ultimately belongs to the parent through its cash-flow rights as a shareholder.

board completely independent of the majority shareholder – would not solve the problem. True arm’s-length bargaining with an outside option cannot be admitted in the group.

To substitute for bargaining in the shadow of market opportunities, fiduciary law can be seen as a framework for setting a fair price in a forced transaction. Given that directors of the subsidiary are allowed to conform to the strategy of the group, their fiduciary duties narrow to ensuring an appropriate sharing of surplus. In this view, directors are instituted as gatekeepers or referees to guarantee evenhanded distribution of transaction value. To avoid breaching their duty to the corporation, directors have to refuse to sign a contract with the parent or another group entity if they perceive the price to be unfair to the subsidiary. The parent can insist on the transaction at the desired price but only by replacing the recalcitrant directors with other persons who must be either less concerned over the fairness of the transaction or more willing to take a personal liability risk. The directors, in turn, can invoke their fiduciary duties to counter excessive demands from the parent. In their own bargaining strategy, they trade off a potential liability risk against the probability of losing their post or impairing their career prospects in the group.

So much confidence in fiduciary duties and their judicial enforcement might seem surprising. It was said above that control rights reflect limitations of verifiability and outside enforcement of contractual rights and duties. If the parties cannot commit ex ante how much to trade, why should fiduciary duties be any more capable of setting a fair price for the transaction? One main answer lies with an exclusive focus on the price term. Rather than reviewing the efficiency of the transaction in all its dimensions, or having to explore which transaction should have taken place, a court only needs to evaluate whether the subsidiary received a reasonable share of the surplus from the transaction that did take place. This requires far less insight and information than the original task of identifying efficient opportunities to trade.⁶⁸ In addition, fiduciary duties can be designed to elicit information from the parties and to

⁶⁸ Tax authorities conduct a similar review of transfer prices, particularly in cross-border transactions for purposes of allocating taxable income. See OECD, *OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations* (2010).

encourage fair sharing. An example is burden-of-proof shifting and the evidentiary value that Delaware law attaches to involving a special committee of independent directors.⁶⁹ Another approach adopted by German law is to require a domination report from the subsidiary's management board listing all transactions and measures taken at the request of the parent and certifying whether fair consideration was given.⁷⁰ Such procedural safeguards generate evidence for potential litigation and enhance the court's ability to review the fairness of pricing. Against the prospect of possible litigation, once the parties have produced the relevant information about mutual costs and benefits from the transaction it becomes harder for the parent to insist on, and for the subsidiary directors to accede to, a very lopsided pricing scheme to the detriment of the subsidiary.

Although reducing the contested issue to the price term simplifies the problem, the difficulties for the courts remain disheartening. Fortunately, concentrating the fiduciary analysis on the fair distribution of value has the further significant advantage of diminishing the cost of judicial error. For good reason, the law tends to avoid meddling with business decisions and subjecting them to a threat of liability. One key argument is that uncertainty over fault could distort business decisions.⁷¹ For example, liability looms larger for transactions with a probability of loss, potentially deterring the taking of worthwhile risk. By contrast, no distortion arises as long as the law only intervenes in value distribution. In deciding over a business strategy, project or transaction, the parent and the subsidiary are primarily interested in the expected value of its share in the surplus. As long as the court's errors are

⁶⁹ Note that the Delaware case law mostly concerns mergers or other control transactions. See, eg, *Kahn v Lynch Communications Systems*, 638 A2d 1110, 1115–18 (Del 1994) (entire fairness review but appropriate special committee can shift burden of proof to plaintiff); see now *Kahn v M & F Worldwide Corp.*, 88 A3d 635, 644–46 (Del 2014) (standard of review reduced to business judgment rule if transaction concluded with proper approval by a special committee and a majority-of-minority shareholder vote).

⁷⁰ § 312 AktG (German Stock Corporation Act). See also §§ 313, 314 AktG (auditing of the report by the subsidiary's auditor and supervisory board). However, survey evidence suggests that compliance with this procedural duty remains spotty, Jens Ekkenga, Christoph Weinbrenner and Katja Schütz, 'Einflusswege Und Einflussfolgen Im Faktischen Unternehmensverbund: Ergebnisse Einer Empirischen Untersuchung' (2005) 3 *Der Konzern* 261, 275.

⁷¹ See n 30 above.

symmetric around a truly 'fair' share (which is itself an elusive, uncertain concept), the uncertainty over value distribution should not affect the incentives to create value by making the most efficient decision.⁷² The transaction as such is allowed to proceed and not subject to review; only the distribution of surplus can be challenged after the fact.

In spite of the simplification and relative tolerance to error, the fiduciary duties of directors, of the parent as controlling shareholder and possibly other gatekeepers likely remain an imperfect safeguard. One major reason is that there is little litigation, especially for common intra-group transactions such as the supply of car engines. Oftentimes, only the bankruptcy of the subsidiary (and usually also the parent) creates a situation where the fairness of prices will be challenged. Directors will nonetheless be somewhat sensitive to liability as they would be forced to pay from their own pockets for an advantage taken by the parent. Also, other circumstances work in favor of fair sharing of transaction surplus. For one thing, the parent is often the sole, in any event a major shareholder of the subsidiary. Depending on the size of the parent's stake and possible restrictions on payouts, the incentive to shortchange the subsidiary is substantially lessened. Meanwhile, when rewards for the managers of the subsidiary are tied to the success of the subsidiary as a separate entity, they will bargain harder with the parent. Conversely, the parent derives an indirect benefit from maintaining the group's incentive system. This should make the parent less inclined to take advantage of the subsidiary, even if that means leaving more to the stakeholders of the subsidiary.

2. Advantages of separating control from value appropriation

Centralized control aims at avoiding or alleviating coordination failure from private information, lack of commitment or under-specialization. The existence of a group indicates that these concerns prevail over potential benefits from market contracting.

⁷² The analysis is complicated by the fact that liability is imposed on the directors of the subsidiary and only if the price is found to be unfair. The resulting asymmetry induces directors to claim too much for the subsidiary. The ultimate outcome depends on incentives from both liability and the parent's power combined. Even so, errors of the courts in tailoring the directors' incentives tend to be less harmful than for decisions over value creation.

Given that the balance tilts towards integration, the question arises: why not full integration? A plausible answer lies in motivating ex ante investment, the other function of control rights besides coordination.

a) Basic idea: maintaining motivation in the subsidiary

For all the benefits that better coordination confers, the original insight of the property rights theory remains that control-as-ownership encourages ex ante value-enhancing investment. Centralizing control pulls away ownership incentives from many collaborators, which facilitates coordination but at the same time discourages investment that only an owner would find worthwhile. According to the property rights view, the fall in non-contractible investment is the inevitable drawback of centralizing control provided that control rights shape the distribution of available surplus ex post. Framing the problem in this way highlights the potential gain from a hybrid structure: To the extent the group form succeeds at separating control from value appropriation, it could reap the advantages of centralized control – enhanced coordination – and combine it with some of the motivational benefits of decentralized ownership. By ensuring the subsidiary a fair share of the surplus from transactions with the parent or other group members, the group mimicks the economic outcome of divided ownership. This could preserve some of the benefits of market contracting under integration. It is a common presumption that some degree of responsibility and limited self-interest at subordinate units can improve the performance of large organizations. The idea is familiar not least from the political and constitutional sphere where it serves to justify different levels of government. To substantiate its validity as an economic rationale of the group form, one has to pinpoint the kind of investment that the subsidiary's separate ownership – the right to claim transaction value – serves to encourage.

b) Which investment in the subsidiary needs motivation?

In the property rights theory of the firm, 'investment' originally referred to a non-financial contribution to the success of the later transaction. Motivating employees and the organization at large could be a leading reason to establish a different entity with its own self-interest in value appropriation (subsection (1)). Once a legal entity exists and partitions assets and liabilities, the firm could also want to motivate the

provision of credit and other financial investment specifically to the subsidiary (subsection (2)).

(1) Non-financial contributions

In large firms, decision-makers even higher up in the hierarchy have only a limited effect on the bottom line of the business. Common sense and agency theory advise to base rewards on indicators over which the agent has relatively greater control and which are, therefore, more informative of an agent's effort.⁷³ This already suggests to devise measures of performance that are closer to agents. Establishing smaller units (divisions, profit centers) and accounting for their profits separately is a widely used organizational technique. It enables the firm to increase a manager's responsibility for the particular unit they oversee. Accordingly, variable pay, promotion or demotion can be linked to the performance of the subsidiary. Greater accountability of managers then trickles down the corporate hierarchy: Knowing that the unit is measured by its performance, employees will pay attention to these indicators to curry favor with their superiors. The same could be true, for instance, of outside suppliers whose fortunes depend on the subsidiary.

It may seem obvious that the firm should seek to incentivize managers, employees and other stakeholders to work hard, be attentive and make the best decisions for the subsidiary. Yet upon closer reflection, there is an inherent tension between motivation at the subsidiary level and the centralization of control in the group. One aspect is that the parent's control might seem to replace any need for independent 'investment' decisions by the subsidiary. An immediate response is that in any hierarchy, genuine effort and attention to crucial decisions are hard or impossible to monitor, so that direct control over them remains elusive. But it is not just a natural restriction that the parent cannot control every decision at the level of the subsidiary. Rather, the degree of centralization is itself an organizational choice. Even if the parent were able to obtain and evaluate information to substitute its judgment for that of the managers and employees of the subsidiary, it would be very costly to do so. As

⁷³ The more random noise an indicator contains the greater the risk the agent has to bear (for which she needs to be compensated) and the more her information rents rise. For the informativeness principle, see above n 17.

an organization grows larger, delegating decisions to agents becomes increasingly preferably and indeed inevitable. How much freedom should be left to the lower level is a perennial issue of organizational economics. By and large, the tradeoff is one between the relative importance of coordination across units and of local knowledge, both in the geographical and figurative sense.⁷⁴ Although the parent may not agree to legal restrictions on its power to interfere, it can de facto commit to relinquishing control by limiting the amount of information it collects about certain aspects of the subsidiary.⁷⁵ Abandoning control has the virtue of encouraging the subsidiary and its management to develop and execute its own strategies. Self restraint of the parent fosters initiative on the part of the subsidiary.

Delegation becomes more desirable the more the agent's incentives are aligned with the interests of the principal.⁷⁶ Establishing the subsidiary as a distinct entity with separate accounting shapes incentives in a particular way. Rather than only following orders and coordinating with the needs of the parent, managers of the subsidiary become aware of the subsidiary's own bottom line. More active involvement and initiative at the lower level is unequivocally beneficial insofar as it concerns the efficiency of the subsidiary's production and its interaction with the market outside the firm. The parent of a car manufacturer will welcome and indeed demand the subsidiary's endeavor and commitment to exploiting cost efficiencies in production, developing innovative cars and marketing them successfully. In this regard, measuring management performance in terms of the subsidiary's own profits is well in line with the interest of the firm as a whole. Even in its dealings with other group entities, accounting for separate profits of the subsidiary can improve incentives. Suppose a process innovation allows the subsidiary-manufacturer to cut production costs. Given demand for the product, the firm should expand its joint output to

⁷⁴ This is the classic debate over the costs and benefits of the multi-divisional firm ('M-form') vs. the unitary firm ('U-form'). For an application to centralized planning economies, see Eric Maskin, Yingyi Qian and Chenggang Xu, 'Incentives, Information, and Organizational Form' (2000) 67 *Review of Economic Studies* 359.

⁷⁵ A similar point is made by Aghion and Tirole (n. 33) 19–20 (overload of the principal as a commitment to less oversight of the agent).

⁷⁶ Aghion and Tirole (n. 33) 10, 20–22; Dessein (n. 33).

maximize total profits. But as long as the parent refrains from claiming all additional surplus for itself through higher engine prices, the subsidiary's own profit still reflect part of the gains. While in an ideal world the subsidiary would capture all gains from its innovation, the incentives of its managers could still resemble those of an independent manufacturer.⁷⁷ This compares favorably with a fully integrated firm where cost efficiencies would only show in profits of the overall firm, far detached from the responsible managers. Acknowledging the subsidiary as a separate entity tends to restore the situation under non-integration, avoiding some of the disadvantages of centralized ownership identified by the property rights literature.

Of course, reanimating the subsidiary's own profit motive within the group has a flip side. If a valid reason existed to integrate the subsidiary in the first place, having it assert its own interests threatens to also restore the coordination problems that integration sought to overcome. As explained earlier, to maximize its own profits by extracting price concessions from the parent-supplier, the manufacturer can be tempted to overstate its production costs. Distorting this information would bring back double marginalization and dampen total profits for the group. In this respect, the parent should exercise control and force the subsidiary to be as transparent as possible about its production costs. As long as the parent does not use this information to claim all surplus (which would violate its fiduciary duties as well as those of the subsidiary's directors), the management of the subsidiary retains an incentive to innovate and enhance efficiency.

The analysis also predicts when splitting the firm into separate entities can be valuable. Because the benefits of the group stem from spurring investment – in the sense of human effort and commitment – in the subsidiary's own performance, they tend to be greater when the more potential surplus the subsidiary can generate from transactions outside the firm. Ownership sets incentives to produce for the market but less so to promote coordination within the firm. Keeping some limited ownership

⁷⁷ Note that in an independent firm, professional managers would likewise only obtain a small share of any additional profits.

ownership alive in a sub-part of the firm is advisable if the respective unit optimally should appeal to the market.

(2) Financial investment

The standard property rights model is about incentivizing ex ante investment that is unobservable and unverifiable. If it were otherwise, the firm could induce the other party to invest through a simple contract for a fixed consideration. Financial investment does not fit this picture because whether an investor has provided funds is most easily observed and verified. What brings financial investment into the ambit of the property rights approach are the funding constraints that force the firm to seek external financing.⁷⁸ Evidently, the firm cannot 'buy' capital in exchange for an immediate consideration. Just like in the original model, it has to motivate financiers to provide funding. The only inducement it can offer are control rights in the value created from employing the capital together with other inputs. Property rights offered to financiers usually relate to cash-flows but can extend to control over the firm and its assets: Under ordinary conditions, shareholders exercise control over the firm; creditors can take control if their fixed claims are not served.

The motivational benefits of the group result from establishing the subsidiary as a separate, gain-seeking owner. For non-financial collaborators, motivation is indirect and largely shaped by the parent (for instance, through measuring managers by the success of the subsidiary). Compared to the unitary firm, the group structure only modestly varies the incentives of managers and employees. For financial investors, the difference is more fundamental and direct. Control rights of investors attach to legal entities and their assets. Therefore, the legal separation of parent and subsidiary profoundly changes investor rights. Specifically, financiers can hold claims against the parent, the subsidiary, or both. The difference can be consequential for the willingness to fund the firm. Whether the greater variety in financial control rights is

⁷⁸ Philippe Aghion and Patrick Bolton, 'An Incomplete Contracts Approach to Financial Contracting' (1992) 59 *Review of Economic Studies* 473 (introducing wealth constraints to the framework analyze financial contracts).

valuable will be deferred to the discussion of specific advantages of legal, as opposed to merely organizational, separation.

For now, one should recognize that the subsidiary's ability to appropriate value in its dealings with the parent is highly significant for financial investors in the subsidiary. Given that the subsidiary is a legal entity distinct from the parent, financiers will only be willing to fund the subsidiary if there is assurance against the parent usurping the entire surplus from mutual transactions or, worse still, abusing transactions to siphon existing value from the subsidiary. Separating control from value appropriation is imperative if a group structure is chosen and if the subsidiary is to have its own financing. Indeed, for transactional ease it will often be desirable that the subsidiary be a respectable debtor for trade credit, even if financial investment in the group is centralized in the ultimate parent or a designated financing entity.

IV. Advantages of legal separation

So far, it has been argued that the group offers a framework for a moderated form of decentralized ownership within the firm. By empowering the subsidiary to appropriate value in spite of being controlled by the parent its profits can serve to incentivize its managers, employees and other collaborators. These potential benefits become available regardless of whether they have been sought for in adopting the group form. Even when the firm has become a group by historical happenstance or for regulatory or tax reasons, it could still harness the incentives from a decentralized profit goal. It is, therefore, a different question whether the organizational advantages can justify the choice of the group form. One reason for skepticism is that there seems to be a simpler, less expensive alternative: The firm can avoid the complications of corporate law by establishing virtual business units within one and the same legal entity (subsection 1). This possibility raises the question whether the group form has anything to offer that the firm cannot mimic in its internal organizational routines (subsection 2).

1. Division versus subsidiary

The benefits of measuring and rewarding performance at the level of smaller, more local business units within the firm has not gone unnoticed in management and

managerial accounting. Among other strands of the economic literature, decentralized responsibility within the firm figures prominently in the discussion about the multi-divisional firm or ‘M-form.’⁷⁹ This literature identifies the advantages not only of vesting decision-making rights in the management of divisions but also of attributing profits to them. The performance of divisions – alternatively, ‘profit centers’ or ‘segments’ – is also seen as a relevant information for investors and shareholders, as witnessed by accounting rules. International Financial Reporting Standard 8 (IFRS 8) concerns the disclosure of profits or losses and other financial information of ‘operating segments’ within a legal entity or a corporate group. Under the standard, an operating segment is defined by three elements: The unit must engage in business activities involving revenues and expenses, including with other parts of the firm, its operating results have to be used in the firm’s management, and distinct financial information about its operations has to be available.⁸⁰ If an operating segment is found to exist, the financial information to be reported mostly mirrors the information generated for internal management purposes.⁸¹ The standard thus piggybacks on an existing practice in managerial accounting. Yet nothing suggests that separate accounting for divisions or segments is or should be tied to the existence of separate legal entities. On the contrary, the standard contemplates segments within one and the same legal entity.⁸² Casual accounts by practitioners indicate that segments often cut across the boundaries of legal entities and overlap with them. For instance, geographical segments of a firm may contain the respective local operations of the same set of different subsidiaries.

These observations hardly encourage the view that firms rely on corporate law to decentralize incentives in their organizations. Virtual divisions constituted by internal rules within a unitary firm have much to commend itself compared to the

⁷⁹ See n 74.

⁸⁰ Para 5 IFRS 8.

⁸¹ Para 23–27 IFRS 8.

⁸² Para 2(a) IFRS 8 (application of segment reporting to individual financial statements of an entity as opposed to consolidated financial statements of a group); para 5(a) IFRS 8 (‘transactions with other components of the same entity’).

group form. Operating a legally distinct corporation as subsidiary entails formalities that contribute little to the desired core function of separate accounting and decision making. Examples of costly corporate housekeeping include registration of the entity, the need to file and otherwise disclose changes in the composition of the board, procedural requirements attaching to board and shareholder meetings as well as duties to produce and disclose full-fledged financial statements. The rigidity of corporate law could even make it the less preferred choice for the core function of dividing value within the firm. While it provides a rulebook for that purpose, the fiduciary duties of directors and controlling shareholders are mostly mandatory.⁸³ As they stand, they may not match the firm's limited purpose of performance measurement.⁸⁴ The incentive effect of a profit center would presumably not suffer much from coarser rules for transfer prices and an informal conflict resolution scheme. Also, since the firm itself bears the costs and benefits of its incentive system, its central management should have the power to modify, rearrange or overrule the current scheme when it is seen as conflicting with the broader interest of the firm. The mandatory character of much of corporate law precludes such flexibility or raises the cost of exercising it. Not least expensive is the fact that directors face personal liability for the breach of their fiduciary duties. Bending the rules necessitates directors that are willing to expose themselves to such a threat, even if it is remote – possibly not an ideal trait in business leaders.

2. Reasons for legal separation

Of course, introducing the rules of corporate law into the firm produces effects not available under internal arrangements. They relate to the inimitable 'essential' function of the law of organizations, the ability to partition assets and liabilities.⁸⁵ It is only by establishing a subsidiary that the firm can grant financial claims to creditors and (minority) equity holders that attach specifically to the assets of this

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⁸⁴ Note that virtual divisions do not affect the claims of financial investors.

⁸⁵ The standard reference in contemporary scholarship is Hansmann and Kraakman (n 6); Henry Hansmann, Reinier H Kraakman and Richard C Squire, 'Law and the Rise of the Firm' (2006) 119 Harvard Law Review 1333.

part of its operations and, crucially, precede the firm's other claimholders. Entity boundaries constitute not just virtual but actual financial ownership. This explains the strictness of corporate law. The following subsections examine three potential benefits of entity boundaries to assess whether they justify the extra cost.

a) Reducing risk and funding needs?

An often-heard claim is that placing certain activities into a subsidiary reduces the firm's risk. At first blush, it seems that a legally distinct entity might allow the firm attract outside financiers to bear part of the subsidiary's risk. The flaw in this argument is that it misconceives the relevant alternative: Keeping the assets within a single entity increases the funding needs of that entity and exposes it to the accompanying risk. At the same time, however, it enlarges the asset and cash-flow base of the entity and hence its ability to raise capital and bear risk. Holding the scope of the firm constant, the only difference is in the design and apportionment of financial entitlements. The choice between a group or a unitary firm merely changes how identical expected cash flows from an identical pool of assets are divided among claimholders.

A version of the Modigliani-Miller irrelevance of capital structure applies to corporate structure:⁸⁶ Slicing entitlements differently should not affect the firm's cost of capital and hence its ability to finance and bear risk. Although the perfect arbitrage conditions of the Modigliani-Miller theorem are rarely satisfied, especially when financial claims are not traded in liquid markets, the law and economics literature nonetheless – and justifiably – assumes that sophisticated creditors or shareholders adjust their terms to the type, scope and priority of financial claims, thereby ensuring the law of one price for capital and risk bearing capacity.⁸⁷ For instance, a bank will ask for a higher interest rate, collateral, guarantees or more stringent covenants or refuse to lend if the firm only offers a claim against the subsidiary. These demands internalize changes to financial claims from varying the corporate structure. True,

⁸⁶ Franco Modigliani and Merton H Miller, 'The Cost of Capital, Corporation Finance and the Theory of Investment' (1958) 48 American Economic Review 261, 268–71.

⁸⁷ The term 'adjusting' creditors appears to have been coined by Bebchuk and Fried, .

other creditors may be less sophisticated and fail to respond to the corporate structure and the identity of their debtor. The paradigmatic example is involuntary creditors. Certain contractual creditors may also not appreciate the variation in expected cash flows on their claims. The firm can use the group form to shortchange such non-adjusting creditors by restricting their claims to a subsidiary. Yet evidently, this constitutes an externality, not an efficiency justification for the group. The latter is ruled out by the logic of Modigliani-Miller that no gains can be had from slicing differently the pie that makes up the firm.

b) Tailoring capital structure to assets?

Another assumption underlying the Modigliani-Miller theorem is that changes in the capital structure leave the firm's expected cash flows unaffected. The pie is sliced differently, but its size remains the same. This claim is more contestable. Starting with the seminal contribution by Jensen and Meckling,⁸⁸ a broad literature has explored the effects of capital structure on incentives and value creation in firms. If one views capital structure as an incentive scheme for managers and other decision makers, the group could extend the range of design options. In this vein, it has been suggested that dividing the firm into separate legal entities is a way of tailoring capital structure to the different types of assets held by a firm.⁸⁹

The degree of leverage and the composition of shareholders and creditors is specific to a legal entity; it can only be varied between entities.⁹⁰ Different business models and risk profiles favor different capital structures.⁹¹ Creating subsidiaries could permit the firm to adopt different capital structures and to attune them to the particularities of the respective activity. For instance, established industries with stable cash flows can sustain high debt levels without incurring large bankruptcy risk

⁸⁸ Michael C Jensen and William H Meckling, 'Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure' (1976) 3 *Journal of Financial Economics* 305.

⁸⁹ Iacobucci and Triantis (n 5).

⁹⁰ Iacobucci and Triantis (n 5) 524–33 (explaining the link between entity status and the ability to have a separate capital structure).

⁹¹ Iacobucci and Triantis (n 5) 543–54 (expounding the relation between asset characteristics and capital structure).

and expected bankruptcy costs. They can benefit from leverage because this allows more concentrated shareholdings and increases the per-Euro returns for active shareholder monitoring (leverage effect).⁹² Conversely, if the firm expects to encounter valuable investment opportunities, a heavy debt burden can impede financing the firm's growth because part of the value from new funding accrues to existing creditors whose default risk declines.⁹³ The windfall to existing creditors can make the investment unprofitable from the shareholders' perspective ('underinvestment'). Also, shareholders in a highly leveraged firm can increase the default risk of creditors by making the firm's business more volatile. Even if the strategy delivers lower returns on the firm's assets, shareholders have an incentive to prop up risk because they receive the potential upside of greater volatility while the greater expected losses fall on creditors ('risk shifting').⁹⁴

Upon closer inspection, however, differentiating capital structure within the group offers almost no efficiency gain. To begin with, consider the potential benefits of *higher* leverage in the parent (and correspondingly a lower debt level in the subsidiary). At first blush, this could allow more concentrated ownership in the parent and greater returns to monitoring by parent shareholders. Yet again, the proper comparison is to a unitary firm. As it turns out, the parent shareholders' equity relative to the total assets of the firm should not differ between a unitary firm and a group. The limiting factor for leverage is the creditors of the parent or a unitary firm. Creditors seek to reduce expected bankruptcy costs and to mitigate the shareholders' risk shifting incentives. Neither of these two concerns differ depending on whether the firm is unitary or a group. In a group, the subsidiary's net worth is an asset in the parent's balance sheet and counts towards the parent's net worth. Therefore, the bankruptcy risk of the parent corresponds to that of a unitary firm with the same level

⁹² Also, high interest payments discipline managers because they are forced to access the capital market to finance new investment, Michael C Jensen, 'Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers' (1986) 76 *American Economic Review* 323.

⁹³ Stewart C Myers, 'Determinants of Corporate Borrowing' (1977) 5 *Journal of Financial Economics* 147.

⁹⁴ Jensen and Meckling (n 88) 335–37; Dan Galai and Ronald W Masulis, 'The Option Pricing Model and the Risk Factor of Stock' (1976) 3 *Journal of Financial Economics* 53, 70–71.

of equity. The same argument applies to risk shifting, which the parent shareholders and managers can implement in the subsidiary as well as in the parent. Creditors therefore have no reason to agree to a lower equity investment by the firm's ultimate owners relative to total assets just because the firm is organized as a group.

Assuming more debt at the parent level only translates into less debt at the subsidiary level. As a consequence, the group structure cannot enhance ownership concentration or returns to monitoring in the parent.

Greater leverage in the subsidiary equally carries no benefit. Firstly, a unitary firm by definition has full ownership of its divisions. Since a parent can never be more than a sole shareholder in the subsidiary, greater leverage in the subsidiary never increases ownership concentration compared to a unitary firm. Secondly, as regards returns to monitoring from the leverage effect, because the ultimate owners of the firm hold the same amount of equity irrespectively of the firm being a group or unitary, greater leverage in the subsidiary does not enhance effort incentives of parent shareholders or managers with respect to the subsidiary. Any additional value accrues to the shareholders as residual owners, independently of whether it is created in the parent or in the subsidiary.⁹⁵ Greater leverage in the subsidiary does not help shareholders to reduce their overall equity investment, which is held fixed; it only substitutes for leverage in the parent.

With regard to the potential advantages of *lower* leverage in either the parent or the subsidiary, the analysis yields more mixed results. Lower debt levels mitigate the shareholders' risk incentive. But as demonstrated before, the incentives of parent shareholders depend for the most part on their equity position relative to the firm as a whole, that is, group leverage. Due to centralized control, shareholders and managers at the parent level determine the group's risk profile, including the risk taken by the subsidiary. The only qualification is that choosing a high debt level in the subsidiary can induce an additional risk incentive compared to the unitary firm. The reason is that limited liability makes the subsidiary a stand-alone risk-shifting opportunity for the parent. If anything, this possibility makes the group less efficient than the unitary

⁹⁵ Excessive leverage in the subsidiary can hamper incentives because part of greater firm value is captured by creditors in the form of reduced default risk.

firm. The group form offers a potential improvement only for the underinvestment problem. There, capital structure sets the incentives not for the risk strategy chosen by the firm but for outside investments of capital or effort. A ‘debt overhang’ deters such investment as much of the returns would accrue to existing creditors through relaxed default risk. But old claims reach no further than the legal boundaries of the debtor entity. Investment in another less leveraged entity of the group can remain profitable, provided that corporate law and appropriate financial covenants prevent the more indebted entity from capturing part of the return. Hence, lower leverage in the parent or the subsidiary could permit investors from inside or outside the firm to commit additional funds or effort to an entity with valuable investment opportunities.⁹⁶ To provide an example, equity carve-outs as an alternative to raising capital at the parent level could reflect the more healthy, lower leverage of the subsidiary (relative to the riskiness of its assets and business model).

Summing up, apart from addressing debt overhang varying capital structure across legal entities holds little promise of improving incentives and increasing the firm’s value. Because the overall leverage of the group governs the risk-taking incentives of the firm’s owners and the managers of the parent, sophisticated lenders pay attention to leverage of the group level and less so to leverage of individual entities. Casual observation of corporate groups indeed suggests that financial creditors rarely lend to single entities within the group. Instead, borrowing tends to be concentrated in the parent or a centralized funding entity and then channeled to the various entities in the group. In return, the operating entities provide guarantees and possibly collateral, making them indifferent to intra-group transfers.⁹⁷ Likewise, the overwhelming majority of subsidiaries appears to be wholly owned by the parent. Another hint that the group’s overall capital structure matters for incentives is the exclusive focus of investors on consolidated financial statements instead of financial reporting by single entities. Although the matter awaits thorough empirical study, there is little

⁹⁶ Hansmann and Squire (n 7) 7–8, 13 (describing entity shielding as a remedy to underinvestment but noting that groups seem to be rarely using it for that purpose).

⁹⁷ Hansmann and Squire (n 7) 11–13.

indication that groups benefit from matching capital structure to the peculiarities of their activities.

c) Bankruptcy as a renegotiation and disciplining device

A last potential efficiency argument in favor of legal separation returns to the theme of motivating stakeholders in the subsidiary. It was argued above that subsidiary profits serve as a performance indicator to incentivize effort or other investments in the subsidiary. For managers and higher-ranking employees, the link to incentives can come from variable pay or career concerns. Other stakeholders can hope for more favorable terms – for example, a more generous wage rise – when the subsidiary becomes more profitable. Such expectations can be founded in the firm's reputation or in the specialization of a stakeholder that makes her difficult to replace and allows her to claim a share of the higher subsidiary's surplus.

Yet stakeholders not only trust that they will participate in superior performance. They also typically obtain fixed claims that define their minimum share in the output of the subsidiary or, more generally, the firm. Many of the firm's contracts are long-term, recurring at intervals over a specified or indefinite period. Prominent examples include payments of interest or principal on loans, wages and pension arrangements under labor contracts, and rent payments for long-term leases. The firm can terminate some of these contracts at will; for others, it needs the consent of the other party and may have to pay for it. Insofar as the firm cannot easily back out, these long-term obligations constitute an enormous liability backed only by future cash flows.

The long-term claims against the firm often include a premium for specialization that increases the inside value of the delivered good or service. They not only compensate the other party for the market value of its contribution but also distribute the surplus created by specific investments. Yet future surplus is of course uncertain, especially in the long run. When surplus falls short of expectations, fixed claims give their holders a larger share at the expense of the residual surplus of the firm and its owners. In addition, fixed claims are insensitive to the market value of the respective contribution. When market prices fall but the entitlements of stakeholders remain fixed, the firm finds itself with more expensive supplies relative to what newly entering competitors can obtain in the marketplace. This depresses prices for the firm's output and hence the available surplus.

When the firm's residual surplus net of fixed obligations turns negative, the firm approaches insolvency. This implies that the original business plan has failed. It may be that financiers and other stakeholders overinvested relative to actual surplus, or that owners initially offered too generous entitlements to their collaborators leaving the firm with a negative residual. Be that as it may, insolvency does not necessarily mean that the firm should be shut down and liquidated. It should continue to operate as long as it has the capacity to produce surplus above the current market value of its specialized assets and other needed input. Impending or actual insolvency provides an opportunity to adjust contracts to new information about the firm's surplus. Because creditors anticipate pro rata satisfaction in bankruptcy and long term contracts can be terminated, the prospect of bankruptcy encourages holders of fixed claims to renegotiate their relationship with the firm and accede to a reduction of their claims. Besides bargaining out of court, many bankruptcy proceedings themselves seek to facilitate coordinated renegotiation.

To prevent abuse, bankruptcy as a renegotiation device for fixed claims and long-term contracts is subject to restrictions. A natural limitation is that bankruptcy cannot be invoked selectively to renege on individual obligations or contracts. Instead, the ability to 'become insolvent' and undergo bankruptcy proceedings is confined to legal entities. This suggests an additional explanation for legal separation within the firm. By incorporating part of its organization as a distinct entity, the firm empowers itself to use the bankruptcy device on this business unit alone. The more of the subsidiary's transactions involve the parent or other group entities, the simpler it is for the firm to interrupt the subsidiary's revenue stream and trigger illiquidity or balance-sheet insolvency. Initiating bankruptcy is even more straightforward when the subsidiary relies on the group's centralized lending facility. Needless to say, bankrupting the subsidiary is usually not a desirable outcome for the firm. It can, however, be a preferred choice to bearing sustained losses from the subsidiary. This only happens when the subsidiary, because of its long-term commitments and other expenses, no longer produces positive surplus for the firm through both the parent's shareholding and its dealings with the subsidiary. Under these extreme conditions, the firm would rather liquidate the subsidiary than continue satisfying obligations that consume more than the available surplus. Bankruptcy presents an opportunity to either liquidate the subsidiary or to revise the surplus sharing embodied in the

subsidiary's contractual relations. To minimize the reputational damage, the parent can 'sell' the subsidiary at a negative price (for instance, through assuming additional obligations) to an investor; this is a strong signal to stakeholders that owner are no longer willing to sustain negative residual surplus. These options exist for a subsidiary but not for a division. A unitary firm can shut down one of its divisions only by paying off all fixed claims, including long-term contracts.

While separate bankruptcy improves the firm's bargaining position, it is less clear why it should create an efficiency, rather than an externality. In response, it bears repeating that bankruptcy of a subsidiary is not only costly to the firm. Besides losing control over the subsidiary and part of the parent's financial position, there is also often a reputational penalty for abandoning an entity that the market associates with the firm. The large price tag ensures that the firm considers bankruptcy only if the firm's expected surplus from continuing the subsidiary has reliably turned negative.

Even so, one might argue that fixed-price contracts naturally include the risk that one party suffers losses when the transaction produces less-than-expected surplus, or even negative total surplus. Based on this reasoning, the threat of selective bankruptcy still looks like an opportunistic attempt to undo a sharing rule agreed on ex ante. To counter this objection, one needs to return to the notion of the group as a hybrid of integration and non-integration. The efficiency rationale of the group form, if any, has to lie with the combination of centralized control and decentralized value appropriation. The idea of ensuring the subsidiary a fair share in joint surplus is hard to reconcile with subsidizing losses from the subsidiary's operations from other more profitable activities of the firm. The economic argument is that the subsidiary's stakeholders can be motivated not only by accounting for the subsidiary's success independently from the parent but also, and perhaps at least as much, by the threat of failure and ultimate demise. The firm's ability to sever the subsidiary without honoring its long-term obligations creates an incentive for managers, employees and other contributors to keep the subsidiary profitable and productive for the firm at large. This minimum standard may have little relevance most of the time but will loom large in stormy weather.

An alternative perspective on the efficiency of selective bankruptcy is to compare the parent-subsidiary setup to two stand-alone firms. Clearly, neither the shareholders

nor the main trading partner of an independent corporation has a duty to infuse additional funds to ensure that the corporation satisfies all fixed claims from long-term contracts. As a result, there is a credible threat of bankruptcy, which the corporation can use to renegotiate the entitlements of stakeholders in order to restore profitability. Now consider the case that bringing the corporation under the control of its trading partner offers benefits from enhanced coordination of the kind expounded above. If the only form of integration were the unitary firm, it would result in a windfall to stakeholders who would gain the financial backing of the acquirer for their fixed claims and long-term contracts. By the same token, integration would become less worthwhile for the acquirer. At the margin, the hybrid group form could promote valuable coordination.⁹⁸

V. Conclusion [to be added]

⁹⁸ The point resembles one made by Hansmann and Squire (n 7) 5, 13–14, who argue that legal separation prevents a windfall for existing creditors of an acquired firm. In their view, however, this advantage disappears as old debt is replaced by new loans taken or guaranteed by the parent.