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## **Contracting About Private Benefits of Controls**

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# Contracting About Private Benefits of Control\*

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## *Abstract*

The separation of control and ownership – the ability of a small group effectively to control a company though holding a minority of its cash flow rights – is common throughout the world, but also is commonly decried. The control group, it is thought, will use its position to acquire pecuniary private benefits – to take money – and this injures minority shareholders in two ways: there is less money and the controllers are not maximizing firm value. To the contrary, we argue here that pecuniary private benefits may compensate the control group for monitoring managers and otherwise exerting effort to implement projects. There is an optimal level of pecuniary private benefit consumption, we show, that maximizes the control group's profits, induces constrained efficient controller effort levels and compensates public shareholders for funding the firm's projects. This result assumes that a controlling group can credibly commit not to consume more than these efficient private benefit shares. When potential entrepreneurs cannot solve this credibility problem, some ex ante efficient firms fail to form because their potential principals cannot raise money. The ability of controllers to commit is increasing in the accuracy of judicial review of controlled transactions. Private contracting, we argue, would materially improve judicial accuracy. Our principal normative recommendation therefore is to demote corporate fiduciary law from mandatory to a set of defaults. Many developing countries, however, lack an effective legal system, but their public corporations commonly have a controlling shareholder. We explore various non-legal methods by which this shareholder can commit credibly to a private benefit cap, though these methods are less efficient than contracting in a mature legal system.

## 1. Introduction

Controlling shareholders, long no more than shadowy characters in the background of the corporate governance debate, now figure prominently.<sup>1</sup> Outside the United States, controlling

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\* In December 2012, the authors prepared a report on behalf of an Israeli company for filing with an Israeli Law Reform Commission concerning proposed amendments to the Israel corporate law that would affect the corporate governance duties of companies that exerted control over other companies in which the controlling shareholder held a minority equity stake. Certain of the thoughts we expressed in that Report were a highly inchoate version of the ideas developed below.

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<sup>1</sup>In a "controlled company", a group has effective power over corporate actions though the group's voting control exceeds its cash flow rights. Common cases include control exerted through a pyramid corporate structure or a dual class stock structure. We note here, though, that the classic Berle/Means public

shareholders *are* corporate governance.<sup>2</sup> They are ubiquitous not only in jurisdictions with poor shareholder protection, as the law and finance literature shows, but also in jurisdictions like Sweden and other northern European countries with good shareholder protection.<sup>3</sup> Commentary now recognizes that controlling shareholders are also a significant feature of the U. S. corporate governance landscape. Families with large block holdings are commonplace, though not as widespread as outside the U.S., and newly public U.S. companies increasingly preserve control in a founders' group. From the beginning of 2010 through the end of March 2011, 20 companies went to the market with dual class common stock and other structural features that allow the controlling shareholders to retain control with a less than equivalent equity investment.<sup>4</sup> Facebook is the most compelling current example, but those with only a slightly longer memory will recall Zynga, Groupon and Google.<sup>5</sup>

The emergence of controlling shareholders (herein sometimes “controllers”) is coming to affect the corporate governance discussion. The traditional view holds that controllers and public shareholders have opposing interests: the public prefers controllers to maximize share values while controllers prefer to maximize their own utility.<sup>6</sup> In this view, weak corporate governance rules make the existence of controlling shareholders both possible and necessary – a

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company is controlled in the sense meant here: the directors and officers hold a small fraction of the cash flow rights in a “B/M” company but commonly exercise effective control.

<sup>2</sup> As examples, “In emerging economies, business groups are responsible for the vast majority of sales, assets, and value added. A business group is in essence a leverage device: firms within the group band together to fund investments and startups and to share production, R&D, and marketing knowledge. The group also enables a single entrepreneur to control vast knowledge-creating resources with a fraction of the capital that would be needed by a stand-alone entity.”, Jordan Siegel and Prithwiraj Choudhury, “A Reexamination of Tunneling and Business Groups: New Data and New Methods”, 25 *The Rev. of Financial Studies* 1763 (2012); “... a series of recent studies on ownership structure reveals that in most markets a large number of listed companies do not have a widely dispersed ownership structure. In general, they have one or more large shareholders that can be categorized as families, states and other industrial and financial companies”. Dusan Isakov and Jean-Philippe Weiskopf, “Are Founding Families Special Blockholders? An Investigation of Controlling Shareholder Influence on Firm Performance”, Working Paper No. 428, Faculty des Sciences Economiques et Sociales, Freiburg 1 (2012). In the US, approximately 35% of the S&P are family controlled. R.C. Anderson and D.M. Reeb, “Founding-Family Ownership and Firm Performance: Evidence from the S&P 500”, 58 *J. Finance* 1301 (2003).

<sup>3</sup> Ronald J. Gilson, “Controlling Shareholders and Corporate Governance: Complicating the Taxonomy”, 119 *Harv. L. Rev.* 641 (2006).

<sup>4</sup> IIRC Institute, *Controlled Companies in the Standard & Poor’s 1500: A Ten Year Performance and Risk Review* 15 (2012). For example, in 2012, there were 114 controlled firms in the S&P 1500. *Id.*

<sup>5</sup> For a disapproving description of Google, see Simon C.Y. Wong, “Google’s Stock-Split Would Replace Stewardship with Dictatorship”, *Harvard Business Review Online*, April 2012.

<sup>6</sup> As an example, “The conventional wisdom in the financial literature is that business groups are primarily expropriation devices for their controlling shareholders.”, and “The prevailing hypothesis in the corporate governance literature ... is that business groups function as expropriation devices and will wither as a country embraces the rule of law.” Siegel and Choudhury, *supra* note 2, at 1795, 1796.

controlling shareholder would not part with control if a new holder of control obtained through the market could exploit non-controlling shareholders.

A contrasting view, that we examine here, posits that controllers are not simply a response to bad law; rather, they reflect an alternative approach to constraining the agency costs of professional management, a specialization that Alfred Chandler so persuasively argued was central to the success of the modern business organization.<sup>7</sup> The idea is that controlling shareholders may monitor management more effectively than rationally passive dispersed shareholders or the market for corporate control.

Better monitoring, however, comes with a corresponding cost: in the case of controlling shareholders, that of private benefits of control. A private benefit, broadly speaking, is a pecuniary or nonpecuniary gain that the controlling shareholder acquires by virtue of its position, and does not share with minority shareholders. For example, a controller may make an interested transaction, one in which the controlling shareholder stands on both sides of the deal. On one side is the company he controls; on the other side is a party in which the controller has a larger equity stake. A pecuniary private benefit exists when the terms unduly favor the company in which the controller has the larger equity stake.<sup>8</sup> A nonpecuniary private benefit may accrue to a controller if, say, he uses his position as head of a substantial company to advance his political agenda. We focus here on pecuniary private benefits. The theme we pursue is that pecuniary private benefits (herein sometimes “pb”) are not inherently bad. Controllers must be compensated for helping to bring corporate projects to fruition; for monitoring managers; and for the reduced diversification that a controlling stake imposes. Minority and public shareholders (sometimes “outside shareholders”) benefit from greater effort and better monitoring. A controller, however, may use his position to exploit. The issue that the existence of a controlling shareholder poses thus is whether the market or the state can keep the costs of pecuniary private benefit acquisition below the benefits outside shareholders realize from more efficient controller performance.<sup>9</sup>

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<sup>7</sup> Alfred Chandler, *The Visible Hand: The Managerial Revolution in American Business* (1977). Philippe Aghion and Patrick Bolton, “An Incomplete Contracts Approach to Financial Contracting”, 59 *Rev. Econ. Studies* 59 (1992), in a different framework, suggest that investors may benefit by permitting entrepreneurs to consume private benefits. Their analysis of the issue is original and important but also is preliminary. We attempt to carry it forward here.

<sup>8</sup> Bengt Holmstrom and Jean Tirole define managerial shirking as a pecuniary private benefit because the managers “divert” the fraction of returns they do not produce. See “Private and Public Supply of Liquidity”, 106 *J. Pol. Econ.* 1 (1998); “Financial Intermediation, Loanable Funds, and the Real Sector”, *CXII Quarterly J. Econ.* 663 (1997). We focus here on actual diversion.

<sup>9</sup> Ronald J. Gilson & Jeffrey Gordon, *Controlling Controlling Shareholders*, 152 *U.Penn. L. Rev.* 785 (2003).

The United States constrains pecuniary private benefit acquisition by controlling shareholders through the fiduciary duty of loyalty.<sup>10</sup> Fiduciary regulation rests on three related premises. First, pb acquisition is unequivocally bad – the reward for monitoring function is implicitly denied – but the transactions through which pb acquisition may take place are not. Thus, in Delaware an interested transaction such as that described above is not prohibited.<sup>11</sup> Rather, the controlled company can void the transaction or receive damages unless a reviewing court determines that the terms of the transaction are “entirely fair” – the most rigorous of all corporate law standards of judicial review.<sup>12</sup> Second, with only limited exceptions, the duty of loyalty, and its implied strict judicial review, is mandatory. Third, and following from the second, pecuniary private benefit acquisition should not be regulated by contract. A corporation has limited freedom to contract *ex ante* with investors to modify fiduciary duties. Instead, fiduciary law is applied *ex post*.<sup>13</sup>

Mandatory heightened review of pb acquisition is puzzling from two perspectives. First, Delaware corporate law is widely praised as enabling: it supplies default rules that suit many corporations, but the rules permit individual corporations to create bespoke terms that better match their particular circumstance. Why is the duty of loyalty almost entirely mandatory?<sup>14</sup> This is not a rhetorical question. Delaware courts are aggressive in curbing what they believe to be the excessive consumption of private benefits of control, and the standard doctrinal rhetoric accords controlling shareholders no deference at all. Chancellor Strine’s treatment of Conrad Black in *Hollinger v. Hollinger International, Inc.*,<sup>15</sup> is more distinctive in the Chancellor’s broad denial that a contractually designed control structure gives a controlling shareholder *any* special treatment under Delaware law, than in his condemnation of the techniques Black used to funnel money to himself and his confederates.

The mandatory character of the duty of loyalty also is puzzling when examined through the prism of contract theory. Since Jensen and Meckling’s seminal article in 1976,<sup>16</sup> a

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<sup>10</sup> Corporate law does not directly regulate nonpecuniary pb acquisition.

<sup>11</sup> Our discussion sometimes stresses Delaware law. This is because many companies are incorporated in Delaware and also because, as will appear below, Delaware has an expert corporate court.

<sup>12</sup> Under entire fairness review, the court exercises its own judgment concerning whether the terms of the transaction being reviewed correspond to those that would be observed in a similar arm’s length transaction, without the usual strong deference to director approval.

<sup>13</sup> Delaware General Corporation Law section 122(17) authorizes a corporation by contract or in its charter to alter the application of the corporate opportunity doctrine but is mandatory for everything else.

<sup>14</sup> This issue has been extensively analyzed, though no persuasive conclusions have been reached. For typical treatments see Symposium, “Contractual Freedom in Corporate Law”, 89 Colum. L. Rev. 1395 - 1774 (1989).

<sup>15</sup> *Hollinger Inc. v. Hollinger International Inc.*, 858 A. 2d 342 (Del. Ch. 2004)

<sup>16</sup> Michael C. Jensen & William H. Meckling, Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure, 3 J. Fin. Econ. 306 (1976).

corporation is commonly seen as a nexus of contracts, understood broadly as a platform on which explicit “legal” contracts (including the corporation’s articles and bylaws) and implicit “relational” contracts combine to regulate the interactions of those who supply inputs to the corporation’s activities.<sup>17</sup> Why should duty of loyalty contract regulation be an exception to this private regulatory regime?

The controllers’ acquisition of pecuniary private benefits is thought to justify fiduciary regulation for three reasons: (i) outside shareholder payoffs are reduced when controllers siphon money from the company; (ii) the ability of controllers to acquire pb reduces their incentive to maximize shareholder value; and (iii) a controlled company may face an excessive cost of capital if potential shareholders anticipate but cannot quantify the later acquisition of pb (shareholders assume that controllers take everything so the shareholders offer little for a stake). Let these concerns be valid. Then how do controlled companies exist? On the common view, minority shareholders are lambs but, unlike real lambs, the investor lambs volunteer for the slaughter. This seems implausible because there are many investment vehicles that effectively constrain stealing.

We address the existence question here. Initially, our model of the pb acquisition process shows that concern (ii) is incorrect. The controllers’ incentive to maximize value actually is *too low* because a portion of the returns from their efforts go to the minority. The ability to acquire pecuniary private benefits improves the controllers’ incentives because it increases their payoff from maximizing behavior. This result implies that concern (i) is incorrect in its simple statement. The outside shareholder payoffs from a realized project are reduced when controllers take money. The outside shareholders have an equity stake, however, and the value of that stake may increase because the prospect of taking the money induces the controllers to invest effort in raising the probability of project success, whether directly in managing the company or indirectly by monitoring professional managers. Outside shareholders thus face a tradeoff. The controllers’ ability to consume private benefits increases the size of the pie but reduces the fractional slice that minority shareholders get. We show that the shareholders’ problem has an internal solution: to permit but cap the controllers’ acquisition of pecuniary private benefits. This result implies that investors supply capital to controlled companies when and because their controllers increase value.<sup>18</sup>

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<sup>17</sup> In non-corporate areas, including contracting that provides the basis for platforms, analysis takes the form of “braiding” explicit and non-explicit contracts. See Ronald J. Gilson, Charles Sabel & Robert Scott, “Braiding: The Interaction of Formal and Informal Contracting in Theory, Practice and Doctrine”, 110 Colum. L. Rev. 1377 (2010).

<sup>18</sup> A few studies are said to support the opposite view, but these studies seem incomplete. For example, Raji Kali and Jayati Sarkar, “Diversification and tunneling: Evidence from Indian business groups”, 39 J. Comparative Econ. 349 (2011) and Marianne Bertrand, Paras Mehta and Sendhil Mullainathan, “Ferretting out tunneling: an application to Indian Business Groups”, 117 Quarterly J. Econ. 121 (2002),

The third concern, that controlled companies may face excessive costs of capital, is serious only if controllers cannot commit to the cap. To see what is meant, realize that controllers maximize their joint return – from equity and from pb consumption – subject to a serious constraint. Controllers require outside money to finance their projects.<sup>19</sup> The constraint, as just said, is that investors will not supply money that controllers will steal. Controllers thus propose to the market (i) a project; and (ii) a commitment to take no more than their share of pecuniary private benefits. It is the combination that induces investors to contribute a project’s cost.

Controlling shareholder regimes raise two serious concerns under current law. First, when corporate governance rules are too restrictive, controllers spend project returns inefficiently or attempt to conceal them. Corporate law creates this concern because it attempts to eliminate pecuniary private benefit acquisition altogether. Controllers thus may buy corporate jets that allegedly serve a corporate purpose rather than take cash.<sup>20</sup> The second concern is more important: Can controllers make credible promises not to take more than the pb shares they propose to the market? Controllers today cannot commit “directly” – that is, with a contract – to consume no more than the specified pecuniary pb levels. Reputational constraints, we argue, partially substitute for contract. Judicial review that attempts to constrain controllers to specified pb shares also is helpful; hence, the controllers’ commitment ability is increasing in the effectiveness of judicial review. Neither reputation nor judicial review always succeed, however. When they fail, ex ante efficient controlled companies may fail to form: potential investors believe that controllers will take too much, and so do not contribute enough money.

Before summarizing the policy implications of this analysis, we note that society’s preferences and outside shareholder preferences are aligned. Society should not want to force

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find that higher firms in pyramids sometimes transfer resources to themselves from lower firms. This type of study cannot tell whether the transfers compensate the controllers for monitoring or are just theft. Similarly, Stijn Claessens, et al, “Disentangling the Incentive and Entrenchment Effects of Large Shareholdings”, 57 *J. Finance* 2741 (2002), find that the market to book ratio of controlled companies increases in the controllers’ cash flow rights but declines in the wedge between those rights and voting rights. When this wedge is large, the implied consumption of pb exhibited in this data also may reflect either compensation for efficient effort or stealing. The relevant counterfactual is what the ratio would have been holding cash flow and control rights constant but constraining private benefit consumption to zero. Note 43, *infra*, summarizes recent evidence that is consistent with our view that pb consumption, over a range, adds value. We stress here, however, that our goal is to make this view plausible. More pointed empirical studies are required to resolve the issue.

<sup>19</sup> We assume that controllers finance projects with equity because the current concern is that controllers exploit minority shareholders by consuming private benefits.

<sup>20</sup> A recent study reports that firms that allow their CEOs personal use of corporate aircraft underperform relevant benchmarks by 4 percent annually. David Yermack, “Flights of Fancy: Corporate Jets, CEO Perquisites, and Inferior Shareholder Returns”, 80 *J. Fin. Econ.* 211 (2006).

pecuniary private benefit consumption to zero because those benefits have positive incentive effects. Outsider investors similarly value these effects if the principals of controlled corporations can be prevented from consuming inefficient levels of pbs. It is that society and the outside shareholders are on the same page that leads us to focus below on the potential of contract as a regulatory device.<sup>21</sup>

Turning to private ordering, we argue that express contracting over pb shares would improve the ability of courts to detect, and so to deter, controller cheating. Thus, our principal normative recommendation is to reduce fiduciary law to a set of defaults.<sup>22</sup> Controllers should be permitted to opt out of the current legal regime in favor of committing to positive levels of private benefit acquisition.<sup>23</sup> Were the duty of loyalty a default, contracting costs would prevent parties from specifying and explicitly constraining the many ways in which controllers could acquire pecuniary pb. This suggests that contracts regulating pb acquisition would rely partly on standards. For example, a contract may restrict the more likely ways that controllers could exploit interested party transactions, but then require the controllers to keep pb acquisition in connection with such transactions to “a reasonable level”. An expert court, such as the Delaware Court of Chancery, is best suited to apply such a standard to circumstances as they arise.<sup>24</sup>

We finally consider how controlling shareholders could and do credibly commit to limit private benefit acquisition when strong courts are not available. Here we ask a question that the Law and Finance literature does not address: in countries without effective legal systems, why do we nonetheless observe minority shareholders? We suggest that there is an industrial organization of private benefits. As an example, related party transactions that create large benefit transfers to controlling shareholders often are observable. Our analysis implies that a

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<sup>21</sup> Our argument could be challenged on the ground that controller pb should not count in a welfare calculation. These benefits should count, however, for two reasons. First, they exist. Second, as said, pb are a payment for monitoring. A controller’s ability to consume pecuniary private benefits sometimes exists in virtue of the controller’s position atop a pyramid structure. Such structures raise antitrust concerns when they create opportunities for collusion among the subordinate companies. We focus on corporate governance concerns in this article, and so do not consider antitrust issues.

<sup>22</sup> The apparent legal and majority view, as said, is that the optimal level of pecuniary pb is zero. A more moderate view is that the issue is unclear as a matter of theory. See, e.g., Isakov and Weisskopf, *supra* note 2, at 2: “From a theoretical point of view, it is not clear which of the two effects [monitoring gain from concentration; diversion of profits by the control group] prevails in companies with a large shareholder.” We argue below that theory implies, and recent data are beginning to confirm, that the monitoring effect prevails when pb are appropriately constrained.

<sup>23</sup> In Delaware, the prohibition on contracting about fiduciary duties applies rigorously only to public corporations; closely held corporations and non-traditional entities like limited liability companies are allowed to contract over the level of fiduciary duty, including their elimination. Our proposal would extend freedom of contract to the public corporation as well.

<sup>24</sup> See Ronald J. Gilson, Charles Sabel & Robert Scott, “Text *and* Context: A Unified theory of Contract Interpretation” (Working Paper 2012).



controlling shareholder may commit to capping private benefits of control by, for example, foregoing vertical relationships with companies in which the controller has an interest. This would reduce the potential for transfer pricing arrangements that unduly favor the controlling shareholder.

Part 2 below sets out a simple model of pecuniary private benefit acquisition, supposing that current law applies. Part 3 uses the model to derive the results summarized above. Part 4 then argues that free contracting would be efficient in the controlled company context. This Part assumes that courts are expert and independent. Part 5 then analyzes the private benefits problem in countries where expert and effective courts are scarce. Part 6 concludes and makes some remarks about nonpecuniary private benefits. Before reaching the analysis, we note that though private benefits figure largely in corporate governance scholarship and in the cases, there are few sustained analyses of their acquisition, and most of those are empirical.<sup>25</sup> What follows, then, has the virtues, and serious vices, of an early cut at a hard subject.

## 2. A Pecuniary Private Benefits Model

We introduce the model with a chronology:

$t^{-1}$ : The state enacts a mandatory corporate law that precludes contracting about private benefits and otherwise attempts to constrain them. Pb consumption nevertheless can be positive.

$t^0$ : A set of risk neutral entrepreneurs – the controllers -- choose a project to pursue. The project costs  $k$ , which the controllers raise by forming a firm and selling equity.<sup>26</sup> There is only one project, so the value of the firm is the expected value of the project.

$t^1$ : The controllers offer  $\lambda$  ( $0 < \lambda < 1$ ) of the firm's  $N$  shares to risk neutral investors.<sup>27</sup> Each investor will hold a small fraction of the total shares; hence, the  $(1 - \lambda)$  shares the controllers retain permits them to control the firm.<sup>28</sup>

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<sup>25</sup> As an example, the control premium is assumed to be an increasing function of the amount of pb a controller of the company can consume. There are papers that measure the size of control premia. See Tatiana Nenova, "The Value of Corporate Votes and Control Benefits: A Cross-Country Analysis", 68 J. Fin. Econ. 325 (2003); Alexander Dyck and Luigi Zingales, "Private Benefits of Control: An International Comparison", 59 J. Finance 537 (2004).

<sup>26</sup> Raghuram G. Rajan, "The Corporation in Finance", 67 J. Finance 1173 (2012), provides a thoughtful analysis of why entrepreneurs often issue equity first

<sup>27</sup> Because we assume that the controllers retain control, our results do not turn on whether the public shares vote or not. Other things equal, voting shares sell for more because the holders have both cash flow rights and the vote. The portion of voting and nonvoting shares matters in a model where controllers simultaneously choose a capital structure and an acquisition probability. For an analysis, see Suman Bannerjee and Ronald Masulis, "Entrenchment and Investment", Manuscript 2012.

$t^2$ : The controllers communicate their business plan to representatives of the investors who have purchased shares. The plan also may set out the technology that would permit the later diversion of project returns. For example, the controllers contemplate engaging in related party transactions. We need not specify actual diversion technologies here; the controllers are in control, and so choose the method that best permits them to realize private benefits.<sup>29</sup>

$t^3$ : The controllers invest “effort”  $e$  to implement the project. Effort comprises the congeries of activities that constitutes controller behavior, especially including monitoring managers. Controllers and outside shareholders cannot contract on effort because effort activities are too various and complex. A successful project returns  $v$ ; an unsuccessful project returns zero. The probability that a project succeeds is increasing in the effort level  $e$ . We denote this probability  $p(e)$ .

$t^4$ : The return from a successful project –  $v$  – is realized. The controllers divert a fraction of  $v$ , denoted  $\beta$ , to themselves at a diversion cost  $d > 0$ . The analytic problem is to identify  $\beta$  which, as said, the controllers realize in the (privately) optimal way.

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<sup>28</sup> Formally, denote the size of the controller set as  $C$ , where  $C \geq 1$ . We bracket two issues. First, a firm with two or more blockholders may behave differently than a firm with a single controlling group. The blockholders may compete with each other for minority shareholder votes. For an analysis, see Dev. R. Mishra, “Multiple Large Shareholders and Corporate Risk Taking: Evidence from East Asia”, 19 *Corporate Governance: An International Review* 507-528 (2011). Our concern is with how a *controlling* group behaves, so we initially assume that a multi-member group has resolved any conflicts before it chooses a project and enters the capital market. Part 5, when discussing countries with poorly functioning courts, consider how blockholders may affect pb consumption. Second, controllers with a large stake in a company may behave conservatively to protect the stake. We ignore this incentive for two reasons. First, controllers in the model are risk neutral and so maximize expected returns. Second, the incentive applies whatever the source of the controllers’ payoff.

<sup>29</sup> In the model, a pecuniary private benefit is any financial return that accrues to the controllers except the return that results from their cash flow rights. Part 4(b) below sets out the channels through which controllers realize these pecuniary private benefits. We motivate the assumption that controllers disclose their plans to representatives of the minority as follows: controlled transactions, which permit pb consumption, can be challenged, at least in the United States, as violating the controllers’ duty of loyalty. The probability that a court will uphold a controlled transaction increases if representatives of a disinterested minority acquiesce in the controllers’ plan. This creates an incentive for controllers to report their plans. The minority does not have hold up power because the controllers do not implement their project until after they report. Additionally, securities regulation and accounting principles typically require disclosure of some types of related transactions.

$t^5$ : The controllers distribute the remainder of  $v$  to shareholders according to the shareholders' cash flow rights. Hence, the controllers also share in the non-diverted fraction of firm value.<sup>30</sup>

Welfare is maximized when the controllers chose  $e$  to solve  $\max_e p(e)v - e$ . The probability function  $p(e)$  is assumed to be twice continuously differentiable, with the standard properties  $p'(e) > 0$ ,  $p''(e) < 0$ , and  $\lim_{e \rightarrow \infty} p(e) < 1$ .<sup>31</sup> We let  $e^*$  be the solution to this maximization problem, so that  $p'(e^*) = 1/v$ .

There are two endogenous sources of inefficiency in the model. First, controllers are liquidity constrained and so must raise outside money. Investors participate only if they anticipate receiving a return. As will appear, that controllers must share project returns with investors precludes first best efficiency in two ways: (a) sharing reduces the controllers' incentive to maximize project value; and (b) sharing may cause controllers not to pursue the potentially highest valued projects in their project portfolios. Second, minority shareholders are widely dispersed and so will not monitor the controllers. The minority's inability to monitor also precludes first best in two ways: (a) the minority cannot, by its own efforts, ensure that controllers comply with a commitment to limit  $pb$  consumption, should the controllers make such a commitment; (b) the minority cannot monitor controllers to ensure that controllers exert optimal effort to implement the firm's projects. An exogenous source of inefficiency, we later show, is that contracts on  $pb$  shares are not legally enforceable. Part 3 next attempts to explain how controlled companies can exist though they are at most second best efficient.

### 3. Efficient controller effort and the diversion share.

#### a. The controllers ex post preferred share.

We initially assume that the controllers' diversion behavior is unregulated or regulated ineffectually. The analysis begins at  $t^4$ , after the controllers have raised money from the public and implemented a project that turned out to be successful. Denote  $\beta(d)$  as the fraction controllers then prefer to divert, assuming that it costs  $d > 0$  to divert. Diversion reduces the sum available for distribution to shareholders, and so reduces the controllers' payoff on their shares. The controllers' payoff from a successful project thus is

$$(1) \quad \beta(d)v + (1 - \lambda)[v(1 - \beta(d))] - d$$

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<sup>30</sup> In this model, the controllers' payoff, either through their stock ownership or in the form of pecuniary  $pb$ , is variable. An unsuccessful project returns zero so the only settling up is ex post.

<sup>31</sup> These assumptions hold that effort costs are convex and that effort cannot ensure that projects succeed with certainty.

The first term is the controllers private benefit payoff. The second term is the controllers' stock payoff: the fraction of the firm they own times the value remaining after diversion. The last term is the diversion cost,  $d$ . The controllers' problem is to choose the diversion share that maximizes Expression (1) with respect to  $d$ . The solution is

$$(2) \beta'(d) = \frac{1}{\gamma v}$$

The fraction of returns controllers prefer to divert is decreasing in the value of the firm and is increasing in the share the public owns. Intuitively, when firm value is large, the controllers' payoff on their stock is large, in absolute dollars. Because payoffs from share ownership are almost costless to realize while diversion is costly, the controllers divert a smaller fraction of the firm as the value of the firm increases. On the other hand, the controllers' payoff on their stock falls as the public's ownership stake increases. Hence, the controllers divert a larger fraction of firm value when the public has a larger share. We let  $\beta^*(d)$  be the share of firm value that unconstrained controllers prefer ex post to divert from a successful project.

**b. The controllers' effort level conditional on their expecting to divert  $\beta^*(d)$  of project returns.**

We now turn to  $t^3$ , when the controllers choose an effort level to invest in the project. The controllers' problem at this stage is to choose the effort level  $e$  that maximizes their expected payoff, which is

$$(3) (1 - \lambda)[p(e)v(1 - \beta^*(d))] + p(e)\beta^*(d)v - e - d$$

The first term is the controllers' return on their stock; the second term is their return as consumers of private benefits; the third term is effort cost; and the fourth term is expected diversion cost.<sup>32</sup>

The solution to this problem is

$$(4) p'(e) = \frac{1}{v[(1 - \lambda)(1 - \beta^*(d)) + \beta^*(d)]}$$

Interpreting this expression, (a) if  $\beta^*(d) = 1$ —the controllers divert everything --, or if  $\lambda = 0$  — the public holds no stock -- the term in brackets becomes 1; the controllers choose the socially first best effort and monitoring level; (b) the term in brackets is less than one when  $\lambda$  is positive —

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<sup>32</sup> Discount rates are eliminated for convenience in all expected value expressions and values are net of project production costs.

the public holds a positive fraction of shares – and  $\beta^*(d) < 1$  – the controllers do not divert everything. In either case, the controllers choose a suboptimal effort level; and (c) the term in brackets is decreasing in  $\lambda$  and increasing in  $\beta^*(d)$ .

Regarding the intuition, (a) when controllers divert everything or own the entire firm, they are full residual claimants and so choose the efficient effort level; (b) controllers do not choose the first best effort level when they do not own everything or cannot divert everything; and (c) holding the public's stake constant, controllers invest more efficiently as they divert a larger share of project returns. Regarding this result, controllers in their status as owners share project returns with outside investors, but controllers in their status as controllers retain everything they divert. Hence, the controllers' disincentive to invest that sharing returns with outsiders creates is partly overcome by the controllers' ability to capture pb.

### c. Raising capital: further constraints on $\beta$ .

We now turn to  $t^0$ , when controllers offer shares to the capital market in order to raise the project cost  $k$ . Denote as  $s$  the sum controllers ask investors to provide. Controllers raise capital subject to two constraints. First,  $s \geq k$ : outside shareholders must contribute at least enough to fund the project. The inequality is strict in equilibrium because controllers need at least  $k$  and to raise more would require them either to reduce their equity stake – to raise  $\lambda$  – or to reduce the share of private benefits they take – to reduce  $\beta$ . Either action would reduce the controllers' return. The second constraint is that the project must be profitable for controllers to pursue when outside shareholders are entitled to  $\lambda$  of the firm's post-diversion value.<sup>33</sup>

We assume that investors have rational expectations and the capital market is efficient. Potential investors thus are willing to contribute  $\lambda[p(e)v^-]$ , where  $p(e)$  is the success probability of the project and  $v^-$  is the value remaining after controllers realize the pb share they commit to take. Let  $\beta(k)$  be the private benefit share that would induce outside investors to contribute  $s = k$ . Hence,

$$(5) \quad s = \lambda[p(e)v(1 - \beta(k))]$$
<sup>34</sup>

**Remark (1):** The diversion fraction that controllers specify when raising capital,  $\beta(k)$ , may not equal the diversion fraction that controllers prefer to consume at  $t^4$  from a funded successful project, which is  $\beta^*(d)$ . The difference between these shares is  $c = \beta^*(d) - \beta(k)$ . Controllers will not consume fewer private benefits than they have paid for, in the reduced price

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<sup>33</sup> Formally, this constraint requires Expression (3) to equal or exceed zero for at least one technically feasible project.

<sup>34</sup> We assume that the market can solve for  $s$ . Firms disclose  $\lambda$  and  $\beta(k)$  and both regulation and commercial practice causes firms coming to the capital market to disclose information about their projects, which illuminates  $v$ .

of shares: hence,  $c \geq 0$ . The consequence is that controllers have a commitment problem. Because private benefit contracts are not enforceable, controllers will stay with  $\beta(k)$  only if it is in their self interest to do so. Potential investors who believe that self interest is not enough expect cheating: controllers consume more pecuniary private benefits than they represent when raising money. The pb share  $\beta(k)$  was chosen to equate  $s$ , the public's contribution, with  $k$ , the project's cost. Investors who expect a diversion fraction that exceeds  $\beta(k)$  thus will offer  $s < k$ ; they will not fund the firm's project.

**Remark (2):** In this model, minority shareholders are not exploited. The price they pay for stock reflects the share of pecuniary private benefits they expect controllers actually to take. Controllers may attempt to bound the commitment concern by disclosing  $\beta^*(d)$  – that is, fixing  $c$  -- but disclosure apparently is hard to do.<sup>35</sup> Thus, commitment seems essential. Our claim in this paper thus is in two parts: (i) Some sets of controllers can solve the commitment problem some of the time<sup>36</sup>; and (ii) Solving the problem is a necessary condition to the existence of a controlled firm.<sup>37</sup> Hence, we argue, minority investors in controlled firms are paid through a lower share price for the pecuniary private benefits that a firm's controllers later consume.

**Remark 3:** The model here implicitly adopts a primitive version of the finance separation theorem. Project value does not depend on the financing method the controllers use, but rather depends on the controllers' monitoring level and the other variables in the model. Thus, Expression (5) above could apply to a debt issue as well as a stock issue. Put another way, on the analysis here controllers have no first order reason to leverage the firm. Whether controlled corporations are inclined to issue debt is unclear. Debt has two advantages. First, it is a credible commitment to restrict pb acquisition. Creditors take the firm if the controllers consume too large a fraction of returns.<sup>38</sup> Second, debt is tax deductible. On the other hand,

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<sup>35</sup> Suppose that firms can disclose  $\beta^*(d)$ . When  $\beta^*(d)$  approaches  $\beta(k)$ , the firm could raise the needed sum  $s$  because  $\beta^*(d)$  is the unconstrained firm's best response. Potential investors also may infer that  $\beta^*(d)$  approaches one – controllers will take everything -- when a firm fails to disclose; all controller types then would be compelled to reveal their  $\beta^*(d)$ . This unraveling result supposes that controllers can costlessly and credibly disclose the ex post optimal diversion share. These are strong conditions, which, we assume, seldom are met in the contexts we study.

<sup>36</sup> See Part 3(e) below.

<sup>37</sup> The second source of inefficiency noted above, that outside investors will not monitor controllers, thus can manifest in some firms with efficient projects not forming. Potential shareholders expect unconstrained controllers to cheat and so will not contribute enough money. Also, that  $\beta(k) \leq \beta^*(d)$  implies that controlled firms must sacrifice some efficiency in monitoring and project pursuit in order to raise capital.

<sup>38</sup> See Robert Townsend, "Optimal Contracts and Competitive Markets with Costly State Verification", 21 J. Econ. Theory 265 (1979). Controlled firms are more likely than BM firms to issue public debt, when they issue debt. See Chen Lin, et al., "Corporate Ownership Structure and the Choice Between Bank Debt and Public Debt", (Manuscript 2012).

debt payments consume private benefits that controllers would otherwise take.<sup>39</sup> Therefore, whether a controlled company has too much debt cannot be answered without a particular investigation.

#### d. Choosing the capital market diversion share $\beta(k)$ .

To begin, we fix the public's stake at an arbitrary value  $\lambda > 0$ . The controllers' problem now is to choose the pb share –  $\beta(k)$  – that maximizes their expected return subject to the constraint that the public contributes enough money: that  $s = k$ . This problem reduces to maximizing Expression (9) below with respect to  $\beta$ . Expression (9) actually is Expression (5), which sets out the public's contribution  $s$ , rewritten in relevant form

$$(9) \quad \lambda[p(e)(\beta(k))v(1 - \beta(k))]^{40}$$

Investors will own  $\lambda$  of the firm, and be paid from the project value that remains after the controllers consume private benefits; this value is  $(1 - \beta(k))v$ . We now write  $p(e)(\beta(k))$  because the probability that the project succeeds is a function of the controllers' effort level,  $e$ , *but* the controllers' effort level, as shown above, is a function of the private benefit share,  $\beta(k)$ , that the controllers commit to take.

Putting aside for a moment the credibility problem, the issue is what  $\beta$  share maximizes the controllers' profit subject to the constraint that shareholders fund the project.<sup>41</sup> Using the chain rule to maximize Expression (9) with respect to  $\beta$  yields

$$(10) \quad \frac{\delta e(\beta)}{\delta \beta} \frac{\delta p(e)}{\delta e(\beta)} (1 - \beta) = p(e * (\beta))$$

The first partial derivative on the LHS shows how controller effort is increasing in the share of project returns the controllers realize in the form of pb; the second partial derivative shows how

<sup>39</sup> In the BM company context, debt and the ability of managers to consume private benefits are negatively correlated. See Erwan Morellec, Boris Nikolov and Norman Schurhoff, "Corporate Structure and Capital Structure Dynamics", 67 J. Finance 803 (2012).

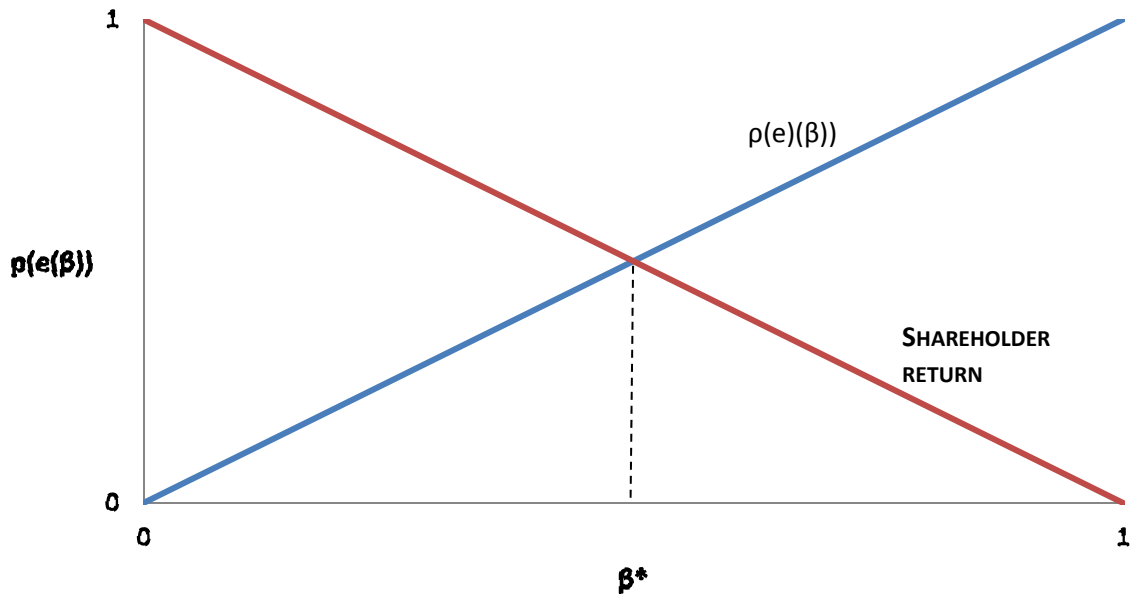
<sup>40</sup> For technical readers, first modify Expression (3), which sets out the controllers' expected return, to substitute  $\beta(k)$  for  $\beta^*(d)$ . Denote the modified Expression as  $(3)^m$ . Then we can write the controllers' objective function as  $Z = (3)^m + Y(k - s)$  where  $(3)^m$  is the controller's expected return and  $Y$  is the Lagrange multiplier. We need only solve for  $Y$  because investors are now expected to assume that controllers can commit: they choose their effort level on the assumption that they will consume only  $\beta(k)$  of the project return. Because the amount required,  $k$ , is a constant, the controllers' problem thus reduces to maximizing Expression (9) above.

<sup>41</sup> For ease of notation, we temporarily write  $\beta$  instead of  $\beta(k)$ . There are no closed form solutions to the optimal expressions, but we can derive qualitative results.

the success probability is increasing in the controller's effort level. The product of the two derivatives thus reflects the shareholders' marginal return as the controllers' share of private benefits varies. The marginal return is falling in  $\beta$  because the payoff to shareholders falls as the controllers' private benefit share increases. The RHS is the success probability, which is increasing in  $\beta$  through the effect of  $\beta$  on effort: the larger is  $\beta$  the higher is the effort level that controllers choose.

Expression (10) shows that the constrained efficient  $\beta$  – the share of pb the controllers propose to the capital market that they will later divert -- is positive and unique. Also, because we have assumed an arbitrary value for  $\lambda$ , this result holds for any  $\lambda$  the controllers choose. When there are minority shareholders, controllers consume a positive pb fraction. Figure 1 illustrates the result geometrically.

**Figure 1**



The vertical axis in Figure 1 plots the success probability as a function of  $\beta$ ; the horizontal axis plots the controllers' private benefit share of project returns. The  $p(e(\beta))$  curve is rising because the success probability is partly a function of  $\beta$ , increasing as the controllers' share increases. The shareholder return curve is falling, as a function of  $\beta$ , because outside shareholders realize a smaller fraction of project returns as  $\beta$  increases. The curves cross at  $\beta^*$ , which is the fraction of



project returns in the form of pecuniary private benefits that maximizes the controllers' expected profit subject to the financing constraint.

Controllers thus will want to commit to potential shareholders that they will later consume neither more than nor less than  $\beta^*(k) > 0$  of expected project returns. To review why controllers propose  $\beta^*(k)$ , recall that controllers need to raise  $k$ , the cost of their project, from the public. The outside shareholders' willingness to pay decreases as the share of private benefits the controllers take rises; this puts an upper bound on  $\beta(k)$ . On the other hand, the shareholders are asked to finance a project that is yet to be implemented. The likelihood that the project succeeds is increasing in  $\beta(k)$  through the effect of  $pb$  on controller effort. This puts a lower bound on  $\beta(k)$ ; shareholders do not want  $\beta(k)$  to be zero because then controllers may not work. Thus, there is a  $\beta^*(k) > 0$  that both maximizes the controllers' expected return and that induces outside investors to contribute the project cost  $k$ .

This is not to say that controllers always bring the highest value projects to the capital market.<sup>42</sup> When controllers choose a project, however, they need to finance it. Hence, controllers propose to investors a project and a related commitment to take a particular share of project value in the form of pecuniary private benefits.<sup>43</sup>

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<sup>42</sup> We show in Part 3(f) that controllers may prefer projects that permit more  $pb$  acquisition to higher value projects.

<sup>43</sup> There is little data studying the relation between private benefit acquisition and firm value or financing choices. Some recent studies are suggestive, however. A study of family controlled Indian business groups found that the center efficiently allocated resources from low growth areas to high growth areas. V. Ravi Anshuman and Niredita Sinha, "Power Struggles, Tunneling Incentives and Investment Efficiency in Diversified Business Groups", Working Paper (2012). Allocating resources efficiently is an aspect of efficient managing. Another study of Indian firms found that business groups with controlling shareholders functioned efficiently and grew as corporate governance regulation in India improved ("we exonerate many of the firms implicated in the literature's well-known finding that Indian business groups are typically expropriators: instead, we find that they are honest actors engaged in value creation". Seigel and Choudhury, *supra* note 2, at 1766). Mahoney asked whether the value of US public utilities declined when the Public Utility Holding Company Act banned pyramid structures; the utilities previously had been held in pyramid form. He found that, before the Act, controllers consumed  $pb$ s, but the evidence "is consistent with the hypothesis that the utility pyramids were beneficial to their members at all levels of the pyramid and that the dissolution of the holding companies was expected to harm public shareholders." Paul G. Mahoney, "The Public Utility Pyramids", 41 *J. Legal Studies* 37, 56 (2012). A recent study found in a very different framework – shareholders choose the firm's capital structure and the compensation contract and the managers' compensation is limited to a wage and an ownership stake -- that the optimal managerial input into production is increasing in the stake. Empirically, "increasing CEO ownership by one standard deviation, from 14.3% to 20%, implies an increase in firm value equal to \$662 million on average." Jeffrey L. Coles, Michael L. Lemmon, J. Felix Meschke, "Structural models and endogeneity in corporate finance: The link between managerial ownership and corporate performance", 103 *J. Financial Econ.* 149,150 (2012). Another study (using Canadian firms) found that family members received higher performance related compensation in dual class firms than in single firms with a concentrated family ownership structure. The difference applied to executives in general. The controllers

#### **e. Credible commitment to pb shares.**

A promise by controllers to consume no more than  $\beta^*(k)$  of project returns, the share they specified when raising money, rather than  $\beta^*(d)$ , the likely larger share that it is optimal for them to take conditional on the money being supplied, can be made credible in three ways: (a) market reactions to cheating; (b) judicial review; and (c) self enforcement. None of these methods always works. We argue here that some of them work some of the time.

Initially, when capital and labor markets are mature – i.e., information rich -- cheating may be costly to controllers. A minority can sell, or threaten to sell, stock when controllers materially deviate from the specified pb share. The prospect or reality of exit signals to the market that controllers probably cheated. This reduces the firm's stock price, which has three important effects. First, a fall in price directly reduces the value of the controllers' ownership stake, which is  $(1 - \lambda)$  of the firm. Second, a lower stock price may have a further indirect effect on the controllers' payoffs, both through their stock ownership and through pb consumption. In many companies a major portion of key employees' compensation is variable. The employee receives options or restricted stock, and is motivated to work by the prospect of increases in share values. Perceived cheating reduces share values, and so reduces the incentives that variable compensation contracts are intended to create. The consequent fall in employee motivation may materially reduce the value of the firm. Employees also may quit, and be difficult to replace, when controller cheating vitiates the compensation contract. The sum of these direct and indirect costs likely sometimes exceeds the controllers' cheating gain.

The possibility of judicial review of a controlled transaction also can increase the controllers' ability to commit. Delaware courts review these transactions under the "entire fairness" standard. In analyzing how judicial review can improve the controllers' ability to commit, we make two assumptions: (a) cheating is observable – i.e., detectable by the minority –

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of the dual class firms owned significantly fewer cash flow rights than the concentrated owners of single class firms. These results are consistent with the tradeoff we model, in which paying money and owning stock are substitutes. See Ben Amoako-Adu, Vishaal Baulkaran, Brian Smith, "Executive compensation in firms with concentrated control: The impact of dual class structure and family management," 17 J. Corporate Finance 1580 (2011). Another study found "a consistently negative correlation between firm value and blockholder dispersion, as well as between firm value and the total ownership stake of blockholders." The authors also noted: "Our results for blockholder size and presence suggest there may be room for private benefits of control by blockholders, possibly at the expense of other stakeholders." Sander J.J. Konjin, Roman Kraussl, Andre Lucas, "Blockholder dispersion and firm value", 17 J. Corporate Finance 1330, 1338 (2011). The relevant point is that increasing agents' ability to exercise control increases value, despite the increased opportunity to consume private benefits.

but it is imperfectly verifiable; the court detects cheating only with positive probability;<sup>44</sup> (b) cheating fails the entire fairness test.

We next characterize the equilibria in the one period judicial review game. Beginning with the minority, recall that controllers present their business plan to minority representatives at  $t^2$ . The minority has an incentive to investigate whether there is cheating if the controllers either fail to report or report that they will take a larger share than  $\beta^*(k)$ , the share the controllers proposed when raising money. In either case, controller cheating is likely so the minority will look for it.<sup>45</sup> The minority, however, also investigates when controllers present a plan along with the intention to consume only  $\beta^*(k)$  of returns. If the minority never investigates, controllers always cheat. Hence, the minority play the strategy of investigating to detect cheating whenever controllers implement a project and suing if they find cheating.<sup>46</sup> Given the minority strategy, the controllers play report, implement and comply or report, implement and cheat. Thus, there are two pure strategy equilibria: in each, there is report, implement and investigate. In one equilibrium, the controllers comply; in the other they cheat.

The compliance equilibrium is efficient relative to the cheating equilibrium: the controllers implement an expected positive value project and the parties save litigation costs. The probability that parties play the efficient equilibrium is increasing in the quality – here the accuracy – of the reviewing court. To see why, let the court be accurate – detect cheating – with probability  $\Theta$  and err with probability  $1 - \Theta$ . The controllers' compliance pb payoff is  $\beta^*(k)v$ . Controllers realize this payoff either by complying or by being found out as cheaters. In the latter event, the court restricts the controllers to the compliance gain.<sup>47</sup> Controllers cheat by consuming  $\beta^*(d)v$ . Denoting the controllers' litigation cost  $l_c$ , parties play the inefficient equilibrium – i.e., controllers cheat -- if

$$(13) \quad \Theta\beta^*(k)v + (1 - \Theta)\beta^*(d)v - l_c > \beta^*(k)v$$

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<sup>44</sup> Regarding the observability assumption, investors would not finance a controlled company unless they had some ability to detect cheating. Also, the assumption finds support in a number of institutional patterns. For example, securities law and accounting rules require significant disclosure of information that would facilitate observability of cheating. Regarding the verifiability assumption, the minority are insiders relative to courts and so are likely to be more informed than courts and better able to evaluate transactions. In addition, express contracting over shares is not permitted. Thus, the court would have to infer  $\beta^*(k)$  from other parameters. The court's inferences may be inexact, which reduces its ability to detect cheating.

<sup>45</sup> Recall that cheating is observable.

<sup>46</sup> For present purposes, we do not address the collective action costs associated with minority shareholder investigation.

<sup>47</sup> We assume that penalties are not permitted.

The minority is assumed to sue when controllers cheat (cheating is observable), so the LHS of Expression (13) is the expected return from cheating. The RHS is the value of complying: controllers realize the compliance gain with certainty and without incurring litigation costs because the minority does not sue.

The controllers' marginal gain from cheating is the difference in the pb share they take, denoted  $\Delta\beta$ , times the ex post value of the firm, or  $(\Delta\beta)v$ . We rewrite Expression (13) to show that controllers cheat in the one period version of the judicial review game when

$$(14) \quad (1 - \Theta)[v(\Delta\beta)] > l_c$$

The LHS of Expression (14) is the controllers' expected marginal return from cheating; the RHS is the marginal cost.

The court can err by failing accurately to identify the value of the firm; by mistaking the pb share the controllers took; and by failing to find the true  $\beta^*(k)$ . We show in an Appendix that, given these possible errors, the expected return to cheating often exceeds the return to compliance when the court can err. In essence, controllers who comply get the compliance payoff; controllers who cheat and are found out also get the compliance payoff; but controllers who cheat and are not found out get the higher cheating payoff. Cheating can pay. Expression (14) thus exhibits the importance of accurate courts. Cheating pays if courts detect it with low probability but does not pay if courts detect it with high probability.<sup>48</sup>

This simple representation of the controller/minority one period judicial review game shows that the ability of the minority to appeal to a court sometimes permits controllers to commit to the pb shares they specify when raising money. The better the court, the stronger the controllers' commitment power is. Thus, experienced and accurate courts increase the potential for efficient outcomes. This raises the question, taken up in Part 5 below, as to how controlled companies exist in jurisdictions where courts lack these attributes. One possibility, which applies here as well, is to repeat the one period game indefinitely.

It is helpful, before considering the repeated game, to address a question: what function does controller reporting at  $t^2$  serve if the minority always investigates? There are two. First, the probability that a court will disapprove a transaction – find cheating – sometimes is increasing in the failure to obtain the approval of the minority. More precisely, information that the minority rejected a transaction or was not asked to approve it may cause a Bayesian court to reduce its prior

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<sup>48</sup> When  $\Theta \rightarrow 1$ , the LHS of Expression (14) approaches zero and there is no cheating in equilibrium.

regarding compliance.<sup>49</sup> In the static framework used here, controllers respond by increasing the value they attach to  $\Theta$ , the probability that the court detects cheating, when the controllers either fail to report or proceed over the minority's objection. Second, a minority investigation is costly to controllers. A report that explains the transaction may reduce the cost of explaining it later.

To analyze the repeated game possibility, we add a  $t^6$  to the model's chronology. The controllers begin, at  $t^6$ , to repeat the actions taken at  $t^2 - t^5$ ; they propose a new project, choose an effort level for it, and so forth. Because firms are often long lived, such play can be repeated indefinitely. Assume that controllers reported in the first period, obtained acceptance of their project and then cheated. The minority has two responses in the repeated game. The first is as above: suing to upset the cheating transaction. Their additional response is to play a new strategy for the future; this strategy has the minority rejecting *all* future projects regardless of their merits and suing.<sup>50</sup> Courts are likely to reduce their prior estimate of compliance when minority shareholders reject. If controllers believe that the reductions are substantial – that courts will be tough -- controllers expect to be restricted to the compliance payoff in future periods. This payoff is  $\beta^*(k)v - l_c$  because the minority always sues. If the controllers comply, they realize  $\beta^*(k)v$  in future periods without litigation. When the game is played for  $N$  periods, the controllers' expected loss from cheating in period one thus is  $\sum \delta^N l_c = L$  where  $\delta$  is the discount factor. Denote the controllers' one shot cheating payoff (the LHS of Expression 13) as  $\pi_c$ . The controllers thus comply in period one when

$$(15) \pi_c < L$$

Credible commitment therefore is more likely when litigation costs are high and interest rates are low; then  $L$  is big. Controllers thus are likely to take only the one period specified share. If courts take minority rejections lightly, however, repeated play is unhelpful. The judicial review game then is static: if cheating pays in period one, it always pays.<sup>51</sup> This possible result reemphasizes the importance of judicial accuracy. Deterring cheating in the first period matters.

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<sup>49</sup> This possibility likely characterizes the US: courts there are less likely to uphold controlled transactions that representatives of the minority either do not approve or reject. European courts apparently are more lenient than US courts, but still exercise some review. See Simon Johnson, Rafael La Porta, Florencio Lopez-de-Silanes and Andre Shleifer, "Tunneling", 90 *Amer. Econ Rev.* (2) 22 (2000). The argument in text goes through if either the controllers' failure to notify the minority in some understandable way of their plans or the controllers' ignoring some credible expression of minority disapproval induces a nontrivial reduction in the court's prior. Neither formal reports to nor formally expressed rejections by the minority are required. A sophisticated court would not increase its prior regarding compliance just because controllers report because that would make cheating easier: bad controllers would report and then cheat.

<sup>50</sup> Game theorists sometimes refer to this as the "grim trigger strategy".

<sup>51</sup> An example may make this point more vivid. We rewrite Expression (14) to get . Let  $v = 300$ ,  $\Delta\beta = .4$ ;  $l_c = 35$ ; and  $\Theta = .6$ . The controllers then cheat in the first period because the LHS of Expression (14) is

To summarize, the three commitment methods of exit, judicial review and the repeated interaction permit controllers sometimes to make credible commitments not to consume a greater share of pecuniary private benefits than they disclosed to the capital market when raising money.<sup>52</sup> We later argue that express contracting over private benefit shares materially improves controller commitment abilities. Before reaching this issue, we consider the controllers' choice among technically feasible projects.

#### **f. Project choice.**

We turn now to  $t^0$ , when controllers select a project. That controllers consume private benefits affects the sums they can raise from the capital market, and so affects project choice. Controllers trade off consuming more private benefits against raising more money from the public. To begin analysis of this tradeoff, suppose that a controlled firm can choose between two projects, one with high expected returns, the other with low:  $E(v) \in \{v_L, v_H\}$ . The high value project requires more effort --  $e_l < e_h$  -- and is more costly --  $k_l < k_h$ . When considering which project the controllers propose, we make two simplifying assumptions. First, controllers can credibly commit not to consume pecuniary private benefits. Controllers who eschew this commitment consume their preferred ex post share  $\beta^*(d)$ . Second, the capital market will finance the high value project only if controllers commit not to take pb.

Regarding the second assumption, minority investors prefer controllers to take positive levels of pb in connection with any project they propose. When legal constraints on contracting exist, however, outside investors may prefer a different mix of pb consumption and equity payoff than is privately optimal for controllers. The controllers will never take less pb than investors prefer because pb consumption is a pure gain for them while equity consumption must be shared. On the other hand, controllers may propose pb shares that would reduce potential investors' returns below their opportunity cost of capital. Little generality is lost, when analyzing this disagreement, by assuming that investors will not finance the costly project if the controllers take pb but will finance the less costly project though the pb share is positive. We thus put here in stark form the controllers' common choice between pursuing more costly projects and taking less off the top, or pursuing less costly projects and taking more.

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120 and the RHS is 87.5. If the courts reduce their compliance prior such that controllers believe that cheating is detected with probability  $\Theta = .7$ , they will still cheat because the RHS increases only to 116.67. Cheating would be deterred if controllers believe the detection probability is .8 (the RHS then is 175). Hence, if courts are tough enough, and are perceived to be tough enough, the grim trigger strategy may deter cheating.

<sup>52</sup> Remark (1) above defined the controllers' cheating payoff as  $c = \beta^*(d) - \beta^*(k)$ . When controllers can credibly commit,  $\beta^*(d) = \beta^*(k)$  so  $c$  falls to zero. Then the controllers can raise just the project's cost -- i.e., satisfy Expression (5) exactly.

Turning to the analysis, and with subscripts denoting high and low, the controllers pursue the high value project when

$$(16) (1 - \lambda)[p(e_l)v_L(1 - \beta^*(d)) + p(e_l)v_L \beta^*(d) - e_L - d < (1 - \lambda)(p(e_h)v_H - e_h$$

The first term on the LHS is the controllers' payoff from owning shares when they implement the low value project: the fraction of the firm that they own times the expected value of the project, reduced by the fraction of value the controllers later divert. The second term on the LHS is the expected diversion payoff, which is the diverted share of the project's expected value. The third term and fourth terms are expected effort and diversion cost. The RHS of Expression (10) is the controllers' return from taking the high value project. The first term is the controllers' expected payoff, which is just their ownership share of the high expected return. The second term is effort cost. There is neither a diversion return nor a diversion cost because the controllers are assumed not to divert from the high value project.

Rearranging terms, we have

$$(17) (e_h - e_l) + \beta^*(d)[p(e_l)v_L] - d < (1 - \lambda)[p(e_h)v_H - (1 - \beta^*(d))p(e_l)v_L]$$

The first term on the LHS of Expression (16) is the marginal increase in effort and monitoring cost the high value project requires; the second term is the foregone expected payoff from diverting returns from the low value project; and the third term is diversion cost. The RHS is the controllers' marginal payoff from taking the high value project: the high expected return less the low expected return, which itself is diminished by the amount diverted. There is neither a diversion return nor a diversion cost because the controllers are assumed not to divert from the high value project. The difference in expected returns is multiplied by the fraction of the firm that the controllers own.

Expression (17) says that controllers would make the tradeoff in favor of the high value project when (i) the difference in effort cost between pursuing the high value and the low value project is small; (ii) the fraction of private benefits the controllers can optimally divert from the low value project is low; (iii) the difference in expected value between the high and the low value project is large; (iv) the diversion cost is high; and (v) the controllers own a relatively large share of the firm.<sup>53</sup>

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<sup>53</sup> Expression (16), for convenience, permits controllers to consume their ex post optimal level of private benefits or none. A more realistic set up would permit intermediate levels of pb consumption. In that context, the variables identified above would influence controllers toward taking the more valuable project.

To get a better sense of what these results imply, assume that the law could reduce private benefit consumption to zero, so that controllers would be paid only from their equity stake. They would then choose the high value project when

$$(18) (e_h - e_l) < p(e_h)v_H - p(e_l)v_L$$

The LHS of Expression (18) is the marginal cost of taking the high value project and the RHS is the marginal expected gain in project value. Comparing Expressions (17) and (18), the last two terms on the LHS of (17) – the cost of foregoing the low value project that permits diversion and the diversion cost -- do not appear on the LHS of (18). Thus, the inequality in Expression (18) is easier to satisfy than the inequality in Expression (17). The economic interpretation of this result is that the ability of controllers to acquire pb sometimes induces them not to pursue the highest expected value projects in their portfolios.<sup>54</sup>

We make two comments here. First, private benefits are benefits and thus should count in a welfare analysis. Also, these benefits, as shown above, have positive social value: they induce controllers to monitor more efficiently the projects they pursue. On the other hand, there may be social externalities. For example, higher value projects may create more jobs. Second, and relevant to the first, the project choice problem is general. The managers of B&M companies thus are alleged sometimes to empire build – to pursue projects that require much firm specific human capital to implement rather than higher value projects. When current managers have a particular advantage in running a firm, shareholders are reluctant to displace them. The source of these difficulties, for both company types, is asymmetric information: the capital market often can evaluate a firm's project, but the firm's project portfolio is private information. The project choice problem thus is both hard to fix and general.

### **g. Summary**

We have not made a formal welfare comparison between the controlled and the B&M firm. Rather, we showed how controlled firms can exist when investors have a choice of investment vehicles and the commercial and legal environment permits controllers to consume material pecuniary private benefits of control. The essential insight is that the controlled company sometimes must access the capital market for funds. Outside investors anticipate that controllers will consume pb but supply capital nevertheless because some level of pb

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<sup>54</sup> Maria Gutierrez and Maria Isabel Saez, "A Carrot and Stick Approach to Discipline Self-dealing by Controlling Shareholders", ecki Law Working Paper No. 138/2010 (2010), in a very different framework, obtain a similar result. They show that controllers sometimes prefer projects that permit self dealing to projects that do not.



consumption is efficient. The disincentive to invest in projects and monitor managers that a separation of cash flow and control rights creates in the controlled company is partly overcome by the controllers' ability, through pb consumption, to function more as residual claimants. The controlled firm thus can exist when and because their controllers can credibly commit not to consume more pecuniary pb than they specify when raising money. Positive levels of pb consumption thus do not necessarily exploit the outside minority. We argue elsewhere, however, that the controlled firm has advantages of its own: informed insiders – the controllers – can be superior monitors of managerial performance than are capital markets populated by dispersed investors.<sup>55</sup> Putting this issue aside, we turn to the question whether opening up the contracting space could improve the performance of controlled companies by facilitating the ability of controllers to commit credibly to promised levels of pb consumption.

#### **4. Contract, commitment and capable courts.**<sup>56</sup>

##### **a. General Considerations**<sup>57</sup>

Courts today regulate controlled transactions under the entire fairness rule. To see how contract could be an improvement, recall that controllers cheat, in the model here, by consuming  $\beta^*(d)$  of project returns rather than the (second best) efficient share  $\beta^*(k)$ . Denote the share the court believes the controllers to have taken as  $\beta(c)$ . Then the court should find cheating – the relevant transaction is unfair to the minority – when  $\beta(c) > \beta^*(k)$ . Letting  $z$  be the pb sum the controllers consumed in the case at bar and  $v_\alpha$  be the value the court finds the firm to have,  $\beta(c) = z/v_\alpha$ . To focus on the contribution contract can make, we assume that the court can identify  $z$  accurately (i.e., find how much the controllers took). Then the court can make two mistakes: it

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<sup>55</sup> See Ronald J. Gilson and Alan Schwartz, “Constraints on Private Benefit Consumption: Ex ante Structural Regulation versus Ex Post Judicial Review”, forthcoming, *J. Theoretical & Institutional Economics* (2013).

<sup>56</sup> If the minority could bargain as a unit, they would renounce their claim to project returns in exchange for an upfront payment. The controllers would then be full residual claimants and would choose the optimal effort level. That outside investors are widely dispersed precludes this solution.

<sup>57</sup> Gutierrez and Saez, *supra* note 55, also considers the pb problem in a contracting framework. In their model, projects are self financed; the controller has a choice whether to take a project that precludes self dealing or a project that permits it. The goal is to induce the controller to take the project that maximizes the sum of public and private benefits. The paper recognizes that pb consumption can have desirable properties and its concern is that European law does not appropriately regulate self dealing transactions. The paper's solution is a contract that permits the minority, if controllers choose the self-dealing project and it fails, to either put their shares to the controller or buy shares from him. In some circumstances, they claim, this contract improves the incentive of controllers to choose the self-dealing project only when that is efficient. This paper's approach complements ours, but there is a concern: the put/call contract the paper proposes apparently is permitted under current law, in the US and seemingly in Europe, but the contract is not seen. We consider below contracts that, we claim, parties would write were the law to permit them.

can err in finding the optimal share  $\beta^*(k)$  and it can err in finding firm value. Beginning with the second error, let the true value of the firm be  $v$ . Then if the court finds  $v_\alpha > v$ , it will underestimate the share the controllers took –  $\beta(c)$  would be too small -- and the court could find compliance when there is cheating. The court also could mistake  $\beta^*(k)$  because it must be recovered from other verifiable parameters.

An express contract could improve over judicial review of fiduciary duty in two ways. First, a contract could specify the permitted share, or a permitted range. Then the probability that a court will make the first mistake – compare  $\beta(c)$  to the wrong specified share – would fall. Second, a contract could facilitate the court’s search for the controlled firm’s value, primarily by being specific regarding the controlled transactions the parties intend to pursue and how they would function.<sup>58</sup> Then the probability that the court will make the second mistake – incorrectly find the pb share,  $\beta(c)$ , that the controllers took -- also would fall. Part 4(e) above showed that controllers are more likely to play the efficient strategy of taking only what they committed to take as the accuracy of the court increases. Hence, contract can materially improve the controllers’ ability to commit to pb shares in the one period version of the judicial review game.<sup>59</sup>

We conclude this analysis with two comments. First, when a contract is silent about shares, the only realistic default would set  $\beta^*(k)$  at zero because the optimal  $\beta$  is parameter specific.<sup>60</sup> Controllers then would disclose the applicable  $\beta$  when they intend to consume pb. Second, the entire fairness rule is unsatisfactory in two respects. First, “fairness” is vague. Second, the doctrine is unhelpful to the extent that it is concrete. The court is asked to compare the terms of a controlled transaction to the terms of a similar arms’ length transaction. When arms’ length transactions are more efficient than controlled transactions, however, there would not be a controlled firm. The relevant comparison, that is, is not between the transactions that different firm types conduct; it is between the share of firm value that controllers took and the share they committed to take. A contract would focus this comparison better than current doctrine.

The ability of controllers to commit, when contracting is precluded, increases in the repeated game, but high discount rates or moderate litigation costs can preclude commitment there as well. Permitting parties to contract expressly over shares thus would increase the set of

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<sup>58</sup> This second contribution is explored more fully in Part 4(b) below.

<sup>59</sup> Using contract theory language, the ability of parties to contract over pb shares would increase the verifiability of controlled transactions. A more general treatment of how contract can improve investment incentives by increasing judicial accuracy is in Alan Schwartz and Joel Watson, “Conceptualizing Contractual Interpretation”, forthcoming *J. Legal Studies* (2013).

<sup>60</sup> Practically, this would reduce current law from mandatory to a default.

efficient controlled firms a society can support and improve the functioning of the controlled firms that now exist. We turn next to how actual contracting could work.

**b. A possible contracting technology.**

Contracts can specify the particular diversion technology a company will pursue. Controllers acquire pecuniary private benefits in five ways:

- (a) Compensation that exceeds the market wage for the position at issue.
- (b) Loans at below market rates or that are excessively permissive regarding forgiveness.
- (c) Related party transactions: (i) asset sales to or asset purchases from another controlled entity at nonmarket prices; (ii) other interested party transactions, such as granting an exclusive territory to a controlled entity when exclusivity is not the market norm.
- (d) Taking business opportunities that would otherwise be pursued by the controlled company.
- (e) Amenities that are acquired with company money, such as corporate jets, country club memberships and corporate meetings held in desirable locations.<sup>61</sup>

Structure importantly determines which method controllers use. For example, controllers of the top firm in a pyramid may use related party transactions while controllers in a dual class stock structure may use direct compensation. Importantly, the five ways that controllers acquire private benefits are, or could be made, verifiable. Thus, serious controller business activities are hard to hide, compensation commonly is disclosed, controlled party asset sales also could be disclosed, transfer pricing between controlled entities could be made public and the like.

The contracting idea is that controllers commit to particular volumes and pricing levels for transactions that would permit the consumption of private benefits. As examples, the controllers of firm A could commit that asset sales to or asset purchases from controlled firm B

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<sup>61</sup> A fuller description is in Vladimir Atanasov, Bernard Black and Conrad S. Ciccotello, “Law and Tunneling”, 37 J. Corporation Law 1 (2011). These authors argue that current prohibitions on pb acquisition are largely ineffective: controllers realize substantial pb shares despite the law. Hence, these authors conclude, the prohibitions should be strengthened. Also along these lines, see John Farrar and Susan Watson, “Self Dealing, Fair dealing and Related Party Transactions – History, Policy and Reform”, manuscript (2012) (discussing English law). Partly to the contrary, and consistent with the results here, perks appear often to be used in situations where they enhance managerial productivity (i.e., a corporate jet when factories or mines are hard to reach). See Raghuram G. Rajan and Julie Wulf, “Are perks purely managerial excess?”, 79 J. Financial Econ. 1 (2006).

would aggregate no more than \$X annually, and at prices within one standard deviation from market value. Similarly, controllers could agree to cap compensation to a control group that also holds management positions at a level that exceeds a comparable company market basket of salaries by no more than a specified percentage.<sup>62</sup> In a related vein, controllers could commit that their company would satisfy no more than a specified portion of the company's procurement needs from controlled entities. The price of these transactions could then be compared to the price in market transactions to ensure that the prices in controlled sales did not exceed market prices by more than a pre-specified amount. Intra-corporate group loans could be regulated similarly.<sup>63</sup> Controllers could commit to limiting their outside business activities to specified areas.<sup>64</sup> When an express share isn't specified, the court could discover the share of firm value – the approximate  $\beta^*(k)$  -- that controllers commit to take by aggregating the sums that these contractually regulated transactions involve. Also, contractual disclosure of the diversion technology channels the court's inquiry; it could better compare the share the controllers specified to the share they actually took.<sup>65</sup>

Interpreting and applying pb commitment contracts could be challenging even for good courts, however. Contracting costs and asymmetric information commonly would cause contracts to be incomplete: a contract seldom would specify every method or contingency for consuming pb. Therefore, contracts commonly would combine explicit regulations with standards. These contracts would supplement particular commitments with promises to cabin pecuniary private benefits within "reasonable" limits. Able courts could use these standards to police ex post controller opportunism.<sup>66</sup>

We note three things about possible pbs contracts. First, our proposal presupposes competent – that is, accurate -- and independent courts. The contracts would regulate complex business arrangements and use standards; inexpert courts could not conveniently recover and apply the intentions regarding pb that the contracts attempt to implement and the values on

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<sup>62</sup> Corporate salaries today are partly a function of a comparison between what a company pays and what a comparable set of companies pays.

<sup>63</sup> The size of a company's airline fleet also could be contractually capped. Controller perks likely would decline, however, if controllers could contract directly for money.

<sup>64</sup> Line of business restrictions are common in lending agreements today.

<sup>65</sup> Simeon Djankov and his coauthors suggest that regulation of self dealing transactions is best done by requiring extensive disclosure and then having deals be ratified, or not, by disinterested shareholders. See Simeon Djankov, Rafael La Porta, Florencia Lopez-de-Silanas, Andre Shleifer, "The law and economics of self-dealing", 88 J. Financial Econ. 430 (2008). This proposal also would require judicial review. Courts would have to police the controllers' disclosure and compare it to the firm's results. Contract thus would usefully complement this proposed reform as well.

<sup>66</sup> The practice of contracting parties' sometimes to combine detailed specifications regulating behavior with standards is thoughtfully explored in Robert E. Scott and George Triantis, "Anticipating Litigation in Contract Design", 115 Yale L. J. 814 (2006).

which they condition. The Delaware Chancery Court and the courts of large commercial jurisdictions such as New York or the United Kingdom probably would perform well. The courts in other states or countries likely would do worse. Many US firms are incorporated in Delaware and commercial parties often choose to have their contracts governed by New York or United Kingdom law. Hence, our recommendation to change fiduciary law to a set of defaults is more plausible for jurisdictions like these than it would be elsewhere. Second, pb transactions would be more transparent than they are today and could be adjudicated more precisely to implement their efficient aspects. Third, our view that controllers could make credible contractual commitments to efficient private benefit shares is tentatively held. While Delaware can authorize contracting over pb, as it does with respect to corporate opportunities,<sup>67</sup> there is no literature concerning how or the extent to which commercial parties address these problems. Academics know too little about how contracting parties actually behave. Hence, we argue only that the case for free contracting in the controlled company context is sufficiently promising to give reform a chance. It thus is helpful to conclude with the observation that adding tools to a kit seldom destroys the tools that are already there: opening up the contracting space, that is, would not prevent parties from continuing with the commitment methods that they use today.<sup>68</sup>

## **5. Private benefit consumption under weak courts.**

### **a. Introduction**

The argument to this point establishes three propositions. First, conditional on the prior choice of the controlled company form, the private benefits problem has an internal solution; the optimal level of pecuniary private benefits that controllers should consume is positive. Second, a controlled company can implement the optimal solution only if the controllers' promise to shareholders to consume just the efficient private benefit level is credible. The level itself is parameter specific: it is a function of expected project value, project cost, and the diversion technology. Local conditions therefore affect the efficient pb level because they are inputs to the values of these parameters. Third, the ability of controllers to commit is today enhanced by expert judicial review of controlled transactions, and would be further enhanced were controllers permitted to make private benefit contracts. Effective judicial review together with the ability to

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<sup>67</sup> See note 13 supra.

<sup>68</sup> Controllers are sometimes said to be too reluctant to sell companies in order to protect their private benefits. This concern may be misplaced. To see why, denote the controller pb payoff as  $x$  and the controller ownership payoff as  $y$ . Both are functions of  $v$ , so  $x + y = q(v)$ . An acquirer would bid  $f \geq q(v)$  for the controlling stake if (i) the acquirer's pb payoff would equal or exceed  $x$  and (ii) the acquirer believes it could increase  $v$ . Controllers would sell for  $f$ . Hence, controlled corporation assets would transfer to higher valuing users (in expectation) unless condition (i) fails to hold. That acquirers are less able to consume pecuniary private benefits than targets, as a general matter, is not obvious. See Rrafael La Porta et. al., *Law and Finance*, 106 *J.Pol. Econ.* 1113 (1998).

contract are jointly sufficient to optimize the controllers' commitment ability, subject to transaction costs. Apparently to the contrary, the Law and Finance literature predicts that countries without effective legal systems nonetheless will be dominated by controlling shareholders, a prediction confirmed by observation.<sup>69</sup> Courts and contract thus are not necessary. Rather, the question, which is open in the literature, is how controllers in such countries use non-legal ways to commit.

Part 5 begins an analysis of this question – how a controlled company can credibly commit to a stated pb level in a country with relatively ineffective legal institutions. We consider two commitment categories: reputation-based commitment and structural commitment. The first captures the most familiar enforcement mechanism for implicit contracts; the second is more novel, showing how the characteristics of a company's industry, its business structure and its strategy can function as endogenous implicit enforcement mechanisms. The two categories are not intended to be exhaustive. Rather, we wish to open the issue of how possible implicit commitment techniques function, and to encourage further effort to understand these arrangements. Effective legal systems and related institutions take significant time to develop.<sup>70</sup> It thus is important in the meantime to better understand what works under the “Rule of Not-Law.”

The several informal arrangements that may permit controllers to restrict ex post pb consumption sketched in this Part are not aligned along a continuum under a common measure. Rather, we see an eclectic mix of techniques, both between and within countries. This is, we think, just as we should expect. Countries begin with different endowments of institutions given to them by their particular histories. They craft solutions out of the components they have,<sup>71</sup> in evolutionary biologist Stephan Jay Gould's terms, strategies are “jury-rigged from a limited set of components.”<sup>72</sup> The result is an endogenous “contraption,” Rube Goldberg not Frank Gehry.<sup>73</sup>

## **b. Reputation-based Mechanisms**

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<sup>69</sup> See, e.g., Rafael La Porta et. al., “Corporate Ownership Around the World”, 54 J. Fin. 471 (1999).

<sup>70</sup> Dani Rodrik, *One Economics Many Paths* 23 (2007); Jens Dammann & Henry Hansmann, “Globalizing Commercial Litigation”, 94 Cornell L. Rev. 1, 10 (2008)(collecting studies).

<sup>71</sup> See Ronald J. Gilson, “Corporate Governance and Economic Efficiency: When do Institutions Matter?”, 74 Wash. U.L.Q. 327 (1998).

<sup>72</sup> Stephen Jay Gould, *The Panda's Thumb: More Reflections in Natural History* 20 (1980); see Gilson, supra note 73; Rodrik, supra note 72, Ch. One.

<sup>73</sup> Gould, supra note 74, at 24. In this respect, our work is consistent with the emphasis of a literature exemplified by Masahiko Aoki and Avner Grief that institutions have to be assessed in the context of the particular circumstances and countries in which they involved. Masahiko Aoki, *Toward a Comparative Institutional Analysis* (2001); Avner Grief, *Institutions and the Path to the Modern Economy: Lessons from Medieval Trade* (2006).

Part 4 shows that the capital market sometimes cannot punish controllers who exceed a pb cap because many controlled companies, especially those in less developed economies, do not make repeated efforts to raise outside capital. Particular non-market organizational structures in these countries function partly to expand both the number of parties that the capital market can punish when controllers exceed a pb cap and the number of markets in which the punishment can be imposed. In effect, there is an expansion of parties on the sell side that parallels the expansion of parties on the buy (reputation) side, which together expand the potential scope of pb reputational enforcement.

### ***b.1. Conglomerate Organizations.***

Developing economies are dominated by conglomerates with a controlling shareholder group.<sup>74</sup> The controllers commonly raise equity to get the business going. Particular firms within the corporate group likely also will need equity to initiate their projects. The larger the conglomerate, the more likely it is for parts of it to require external finance. As a consequence, the capital market can punish controllers for exceeding an initial specified pb cap by withholding or increasing the cost of funding for later parts of the corporate enterprise. In sum, while individual controlled firms may access the capital market infrequently, the conglomerate structure itself creates an incentive for its controllers to establish reputations for keeping promises.<sup>75</sup>

That a company's ability to make reputation-based credible commitments increases with scale can be generalized beyond equity issues. A corporation can also send signals of its

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<sup>74</sup> Ronald J. Gilson, "Controlling Family Shareholders in Developing Countries: Anchoring Relational Exchange", 60 *Stan. Rev.* 633 (2007). Tarun Khanna & Yishay Yafeh, "Business Groups in Emerging Markets: Paragons or Parasites", 45 *J. Econ. Lit.* 331 (2007), collect the empirical evidence. See also authorities cited in note 2, *supra*.

<sup>75</sup> This reputation-based explanation is consistent with recent empirical evidence suggesting that there is less private benefit extraction in developing country conglomerates than is commonly thought. See Jordan Siegel & Prithwiraj Choudhury, *supra* note 2. It also differs from the most familiar explanation for the prominence of conglomerate organization in developing countries, which builds on Oliver Williamson's explanation for conglomerates: a trade off between the efficiency of external and internal capital markets. Oliver Williamson, *The Modern Corporation: Origins, Evolution, Attributes*, 19 *J. Econ. Lit.* 1537, 155-60 (1981). External capital markets are associated with an effective legal system to protect minority shareholders; as we argued in Part 3, the absence of minority shareholder protection results in an increased cost of equity capital. In that setting, the conglomerate's internal capital market can allocate capital among operating units – from those generating positive cash flow to those that need additional capital for investments – more efficiently than an external capital market unsupported by effective legal institutions. The reputation-based explanation for developing country conglomerates based on repeat play access to the external capital market by units of the conglomerate links the operation of the conglomerate's internal capital market and recourse to the external capital market. The result is to make the external capital market a more feasible source of equity capital.

commitment to integrity through its product market operations: making investments whose value depends on its future behavior. From the perspective of a signaling approach to the presence of minority shareholders, the more diverse the range of businesses in which the company participates, the more signals of cooperative behavior the company can send and the greater the extent to which scale and scope economies associated with reputation can be captured.<sup>76</sup> In this way as well, the credibility of controller commitments may increase in the size of its conglomerate enterprise.

David Kreps has argued that corporations serve importantly as a repository of reputation. Corporations, unlike individuals, have infinite life; they are thus less likely than individuals to have a predictable final period that then unravels into a current breach.<sup>77</sup> Though corporations are long-lived, individual decision makers are not. The individual decision makers may have short-term interests that conflict with the corporation's long-term interests – i.e., those of future shareholders. The public's recognition of these conflicts may undermine the corporation's ability to commit. Family ownership can serve to bridge the gap between current and future owners. Because of intrafamily inheritance and family ties, the current generation of decision makers should partly internalize the next generation's utility, which helps to mitigate the temporal distortion of incentives to maintain the corporation's reputation.<sup>78</sup>

## **b.2. State Ownership.**

The analysis of family controlled conglomerates in developing countries may also apply to Chinese state controlled companies.<sup>79</sup> The largest corporations in China have both a controlling shareholder and public minority shareholders.<sup>80</sup> China does not have an effective

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<sup>76</sup> Gilson, Controlling Family Shareholders, *supra* note 79; Khanna & Yafeh, *supra* note 76, at 340.

<sup>77</sup> David M. Kreps, Corporate Culture and Economic Theory, in *Perspectives on Positive Political Economy* 90, 111 (James E. Alt & Kenneth A. Shepsle eds., 1990) (“The firm is a wholly intangible object in this theory – a reputation bearer.”). See Gilson, Controlling Family Shareholders, *supra* note 77, at 641-45. Khanna & Yafeh, *supra* note 77, at 348-51, collect the empirical evidence.

<sup>78</sup> Gilson, Controlling Family Shareholders, *supra* note 77, at 643-44.

<sup>79</sup> We focus on China because of the size of its state-controlled sector. The same analysis may apply in countries where state control plays a smaller but yet substantial role. See generally Mariana Pargendler, “State Ownership and Corporate Governance”, 60 *Fordham L. Rev.* 2917 (2012) (surveying state ownership).

<sup>80</sup> Lin and Milhaupt describe the Chinese ownership structure. “More than two-thirds of Chinese companies in the Global Fortune 500 are state-owned enterprises. Excluding banks and insurance companies, 40% controlling stakes in the largest and most important of the firms are owned ostensibly on behalf of the Chinese people by a central holding company known as the State-Owned Assets Supervision and Administration Commission (SASAC), which has been described as ‘the world’s largest controlling shareholder.’ Though elite firms such as Sinopec or China Mobile are listed on stock exchanges in Shanghai, Hong Kong or other world financial capitals, they are nested within vertically integrated groups. Their majority shareholder is the “core” company of the group – which is itself 100% owned by



legal system that protects minority shareholders. The puzzle, again, is how the state commits to a cap on private benefits. In China, government ownership plays the same role as family ownership. As with family controlled conglomerates, the large number of companies controlled by the Chinese state expands the number of parties who can be expected to come to the capital market, either in IPOs or in later offerings.

### **c. Structure-based Explanations**

In Part b. we considered techniques and ownership structures that facilitate commitment when repeated play between controllers and capital market participants is unavailable. The common theme among the examples was that increasing the number of parties on both the sell side (by conglomerate organization) and the buy side (the market as counterparty rather than a single buyer) would cause controllers to expect that the capital market could punish the controllers through refusals to finance subordinate controlled firms or by increasing the cost of capital. In this Part, we shift from focusing on the expectation of future dealings to make credible a pb cap, to the potential for the character of the company's business and its industry to play that role.

In one of the earliest efforts to address how transactional and business structures could make credible a commitment not to cheat in a current transaction, Klein and Leffler suggested a bonding approach.<sup>81</sup> Prior to a transaction, the seller could make a large investment in an asset that loses its value if the seller's commitment, whether to the quality of the good being sold or to the seller's future performance, proves false. For example, a seller marketing an experience good could advertise to induce buyers to make initial purchases. Advertising would be irrational, however, if the firm expected a buyer's first use to be disappointing. Understanding this, buyers would make initial (and later) purchases. A famous male athlete's endorsement of women's stockings also illustrates the point: it is not that the athlete knows the quality of the product, but that it would make no sense for the seller to pay him a great deal to advertise the product if on first use a woman would discover the product's poor quality.<sup>82</sup>

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SASAC.” Li-Wen Lin & Curtis J. Milhaupt, “We are the (National) Champions: Understanding the Mechanisms of State Capital in China”, available at [www.ssrn.com/abstract=1952623](http://www.ssrn.com/abstract=1952623) (forthcoming, Stan. L. Rev., 2013)(quote from Boston Consulting Group, SASAC: China's Megashareholder (Dec. 1, 2007), available at [http://www.bcgperspectives.com/content/articles/globalization\\_strategy\\_sasac\\_chinas\\_megashareholder/](http://www.bcgperspectives.com/content/articles/globalization_strategy_sasac_chinas_megashareholder/)).

<sup>81</sup> Benjamin Klein & Keith B. Leffler, “The Role of Market Forces in Assuring Contractual Performance”, 89 J. Pol. Econ. 615 (1981).

<sup>82</sup> This example is drawn from the endorsement by Joe Namath, a famous New York football player, of pantyhose. See [http://en.wikipedia.org/wiki/Joe\\_Namath](http://en.wikipedia.org/wiki/Joe_Namath)

The examples below turn the Klein and Leffler analysis on its head. Rather than bonding the quality of a product through pre-transaction investments, controllers effectively bond their commitment through the corporate structure. Some corporate structures facilitate while others impede the extraction of pb – a pre-commitment rather than a direct bonding strategy. In effect, this approach represents the industrial organization of pb.

### ***c.1. Absence of Vertical Integration.***

Tunneling – transactions between a controlled company and other companies in which the controlling shareholder has a larger equity stake<sup>83</sup> -- is the most commonly highlighted form of pb.<sup>84</sup> Related party transactions, particularly in a vertical supply chain, are especially suited to pb extraction because, put simply, it is not so easy to transfer large amounts of money to a controlling shareholder (or companies she controls). As a result, interested transactions and other forms of tunneling are attractive because they provide a large volume of transactions that involve the appearance of a legitimate transfer of funds to a controlling shareholder from the controlled corporation. Thus, the absence of vertical integration, by limiting the possibility of intragroup dealings can serve as a credible signal that pbs extraction will be limited. Such a signal depends on industrial organization rather than on reputation or the legal system.<sup>85</sup> The empirical evidence on the extent of vertical integration in emerging market conglomerates is interesting; there is substantial variance both among countries and among companies within the same countries.<sup>86</sup>

A similar industrial organization analysis may help explain the recent pattern of founding entrepreneurs retaining control of large web oriented companies by going public with dual class structures– for example, Google, Facebook and Zynga.<sup>87</sup> Such companies have no supply chain relationships with their controlling shareholders. As a result, no easy method exists to transfer assets to the controlling shareholder. In that setting, the nature of the controlled company’s business may make credible a cap on pbs.

### ***c.2. Treatment of Minority Shareholders as a Signal in the Product Market.***

Conditions in a company’s product market can provide a means by which a controlling shareholder can credibly commit to a cap on private benefit extraction in jurisdictions with both bad shareholder protection and bad commercial law, a combination that is commonplace. A firm

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<sup>83</sup> See, e.g. Atanason, Black & Ciccotello, *supra* note 62\_\_.

<sup>84</sup> See *id.* (collecting sources).

<sup>85</sup> Gilson, *Controlling Family Shareholders*, *supra* note 73, at 1658.

<sup>86</sup> Khanna & Yafeh, *supra* note 77.

<sup>87</sup> See Emily Chasen, *The Big Number*, *Wall St. J.*, February 8, 2012, B5 (During 2011, 20 companies went public in the U.S. with dual class, up from 19 in 2010.).

may use the treatment of minority shareholders as a signal in the product market rather than in the capital market.<sup>88</sup> The treatment of minority shareholders sometimes is observable by a company's potential product market trading partners at a low cost, perhaps because such exploitation will be covered by the local newspapers.<sup>89</sup> Fair treatment of minority shareholders may then serve as evidence of the corporation's integrity, including its commitment to performing its contractual obligations, a signal that is credible because it is costly – private benefits must be given up and the company must raise equity capital in the first place despite its high cost in such capital markets. The presence of minority shareholders then can be explained not by the need for capital at the time of the initial public offering or in the future, but as a way of developing reputation that will be valuable in the product market. From this perspective, minority shareholders play the role of reputational canaries; they cheaply but credibly convey to potential traders that the corporation is an honest trading partner.

To be sure, this brief account of the relation between minority shareholder treatment and possible product market response is incomplete. For example, how do potential traders know what the acceptable level of pb is, so they can know when the canary is gasping? Any reputation-based account of exchange requires a shared understanding of what constitutes appropriate performance. The difference here is that using minority shareholders as a signal of commitment to contractual performance at least provides an enforcement mechanism.<sup>90</sup>

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<sup>88</sup> See Gilson, Controlling Family Shareholders, *supra* note 75, at 648-49.

<sup>89</sup> See Alexander Dyck, Natalya Volchkova & Zingales, "The Corporate Governance Role of the Media: Evidence from Russia", 63 *J. Finance* 1093 (2008)(treating newspapers as a corporate governance constraint).

<sup>90</sup> Corporate governance also can be affected by conditions in the corporation's product market in ways that can restrict the extent to which a controlling shareholder can extract pbs. The more intense product market competition in the controlled company's industry, the less freedom a controlling shareholder has to divert to itself needed resources from the company. Recent empirical evidence is consistent with this analysis. Guadalupe and Perez Gonzalez report that increases in the intensity of competition lead to a statistically and economically significant reduction in both the level of private benefits of control and their dispersion among companies. Maria Guadalupe & Francisco Perez-Gonzalez, "Competition and Private Benefits of Control, available at <http://ssrn.com/abstract=890814> (Oct. 2010). Other studies report similar results with respect to corporate governance generally. See, e.g., Julia Chou et. al., "Product Market Competition and Corporate Governance", 1 *Rev. Dev. Fin.* 114 (2011)(Corporate governance has a significant effect on firm value only when product market competition is weak; product market competition is a substitute for corporate governance); Stijn Classens & B. Burcin Yurtoglu, "Corporate Governance in Emerging Markets: A Survey", *Emerging Mkt. Rev.* \_\_\_\_ (2012)(corporate governance problems are less severe when competition is already high in factor markets). Because we are concerned here with how a controlling shareholder can take actions that credibly commit to a pbc cap, we do not pursue this issue further.

Mistreatment of minority shareholders will be punished in the product market, where the company is a repeat player.<sup>91</sup>

### ***c.3. Shareholder Composition***

The composition of the minority shareholder base also may serve to make credible a controlling shareholder commitment to a pb cap. We offer two examples, both of which operate by using shareholders as monitors. The first example contemplates that customers of or suppliers to the controlled corporation hold significant investments in the corporation, in effect endogenizing the controlled corporation constituencies. Their ownership creates an incentive for them to restrict controllers to particular pb shares since transferring assets out of the corporation may affect the corporation's performance. Their roles as customers and suppliers give them the information and the ability to enforce these restrictions through their commercial relationship. A similar analysis has been applied to the vertical *kieretsu* structure in Japan.<sup>92</sup>

The second example contemplates significant block holders in addition to the controlling shareholder. Here the point is that blockholders will have a sizable incentive to monitor the controlling shareholder's compliance with a pb cap – diversion above the cap comes out of their pockets. For just this reason, the controlling shareholder has an incentive to encourage blockholders to take a significant position. By putting in place shareholders who will have the incentive to police the pb cap, the controlling shareholder credibly commits to the cap.<sup>93</sup>

### ***c.4. Political Economy.***

A final structural support for the credibility of a pb cap comes from the government not market participants – a political economy analysis. For this purpose, suppose that having a stock market is for developing countries a badge of modernity that does not demand a complete economic justification. The government wants a stock market, the controlling shareholder goes

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<sup>91</sup> For empirical evidence in developed markets that listed companies who commit financial fraud (i.e., mistreat shareholders) are punished in the product market, see J.M. Karpoff, L.D. Scott & G.M. Martin, “The Cost to Firms of Cooking the Books”, 43 J. Fin. & Quant. Anal. 581 (2008). The product market role of minority shareholders is critically assessed in Sang Yop Kang, “Reenvisioning the Controlling Shareholder Regime: Why Controlling Shareholders and Minority Shareholders Embrace Each Other”, available at <http://ssrn.com/abstract=1857131>.

<sup>92</sup> Ronald J. Gilson & Mark J. Roe, “Understanding the Japanese Keiretsu: Overlaps Between Corporate Governance and Industrial Organization”, 102 Yale L. J. 871 (1993).

<sup>93</sup> Ronald J. Gilson, Henry Hansmann & Mariana Pargendler, “Regulatory Dualism as a Development Strategy: Corporate Reform in Brazil, the U.S. and the E.U.”, 63 Stan. L.Rev. 475 (2010) reviews this pattern in Brazil.

along by issuing minority equity and paying the implicit tax associated with a higher cost of capital, and citizens invest because external investment opportunities are limited by regulation. While this account also lacks an explicit limit on private benefits, the government may be able to enforce informally a ceiling that will come to be known to participants in the capital market.<sup>94</sup> This form of informal enforcement is generally understood to have been how the Japanese Ministry of Finance enforced the obligations of main banks to bail out failing borrowers despite the absence of any formal obligation to do so.<sup>95</sup>

## 6. Conclusion

The legal literature almost uniformly treats private benefits of control as bad: with only very limited exceptions, self-dealing is a breach of fiduciary duty. It follows that the optimal level of pb is zero. That we observe any pb at all is a consequence of the legal system's inability perfectly to deter bad acts by bad actors. In this article, we argue that there are efficiencies to the controlled company structure, but that those efficiencies are purchased at the cost of permitting controlling shareholders to consume positive levels of pecuniary private benefits. Controllers, we assume here, must access the capital market to fund particular projects. The public's willingness to invest, in turn, is a function of the public's ownership stake, the expected value of the firm's project and the fraction of value remaining after the controllers take anticipated private benefit shares. Controllers thus must commit to private benefit levels that are sufficiently low so that the public will contribute a project's cost, but high enough to reflect the fact that the controllers' incentive to manage efficiently is increasing in the level of private benefits they consume. A pecuniary private benefit level of zero minimizes controller effort and so fails to maximize expected project value. Therefore, there exists an optimal private benefit level –  $\beta^* > 0$  – that maximizes the controllers' expected gain and compensates outside shareholders for contributing money.

There is a question, however, whether the contracts that constitute the controlling shareholder structure are subgame perfect. The controllers' promise to take no more than the level of pb they specified when raising capital may not be credible because the controllers have an incentive, after getting the money, to consume the larger ex post privately optimal share. Controllers thus must be able to commit credibly to potential investors that they will cap the amount of pb they will take. In the absence of such a commitment, an adverse selection process

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<sup>94</sup> In the case of China, see Benjamin L. Liebman & Curtis Milhaupt, "Reputational Sanctions in China's Securities Markets", 108 Colum. L. Rev. 829 (2008). Private benefit acquisition in China is described and decried in Yuan George Shan, "Can Internal Governance Mechanisms Prevent Asset Appropriation? Examination of Type I Tunneling in China", Working Paper. University of Adelaide Business School (2012).

<sup>95</sup> See Masahiko Aoki, Hugh Patrick & Paul Sheard, "The Japanese Main Bank System: An Introductory Overview", in *The Japanese Main Bank System* 3, 31-32 (Masahiko Aoki & Hugh Patrick eds., 1994).

will result in a lemons market. Some projects for which a controlling shareholder is the most efficient ownership structure will not be funded, or will be undertaken by companies with less efficient ownership structures.

We show that Delaware law, which subjects transactions through which pb can be extracted to an entire fairness test, functions as such a commitment. On the one hand, the test requires only that the terms of such a transaction be within a range of reasonableness, which leaves room for the controlling shareholder to take some level of pb. On the other hand, the law puts a limit on their size. We also show that the controllers' commitment ability is increasing in the ability of reviewing courts to detect cheating. In contract theory terms, the more experienced and expert the reviewing court, the more accurate is judicial review, and the more effective, for both the controllers and the minority shareholders, is the controllers' capacity to commit.

Our principal normative recommendation builds on the importance of expert courts, such as the Delaware Court of Chancery, to the existence of efficient controlling shareholder structures. While expert application of a legal standard can be effective, existing law prevents parties from adjusting or explicating that standard through contract. This is so although a contract over pb, by setting the context and refining the standard to fit the transaction, could improve the performance of the reviewing court. Fiduciary duty and the corresponding entire fairness standard are, with few exceptions, mandatory. We propose that the governing standard be made a default rule, leaving parties free to improve on the standard when possible. The result, by improving judicial review, would be to increase the controllers' ability credibly to commit to a pb cap.

Finally, our theory yields predictions about the efficiency of and the circumstances in which public corporations with controlling shareholders are observed. Regarding efficiency, a controlling shareholder regime requires effective judicial enforcement of a private benefit cap, either through enforcement of a statute or, as we recommend, through enforcement of contracts. Therefore, controlled companies should function more efficiently in countries with advanced legal systems.<sup>96</sup>

Regarding existence, the presence of controlled companies should be independent of the quality of the legal system. The law and finance literature explains the existence of controlling shareholder regimes as the product of poor judicial protection of minority shareholders. This generates a prediction that the facts disconfirm: the controlled shareholder form should only exist

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<sup>96</sup> This result is contradictory to the common view in the literature. There, strong legal institutions are thought to deter tunneling and weak legal institutions to permit it. We argue to the contrary, that strong legal institutions would facilitate the ability of controlling corporate groups to commit credibly to optimal levels of private benefit consumption.

in developing countries. On the other hand, the controlled company form presupposes the ability of controllers to commit to efficient levels of pb consumption. In advanced economies, commitment is usually created by contract and enforced by capable courts. We observe, however, public corporations with controlling shareholders in jurisdictions that lack an effective judicial system, primarily but not exclusively developing countries. Absent a controlling shareholder's ability to commit to a pb cap, adverse selection should crowd out minority shareholders in these countries. We review a variety of reputational and structural techniques that are partial substitutes for an effective judiciary over the lengthy time necessary for the development of an effective judiciary. There is no reason to believe, however, that these substitutes are as efficient as the combination of contract and good courts would be. This qualification resolves the conflict between our prediction and that of the law and finance literature; it explains both the existence of controlling shareholders and the empirical evidence of the large minority share discounts in countries without an effective judiciary. Alternative mechanisms allow the market to calculate the appropriate size of the discount.

We conclude with two research issues. First, many current analyses ask how to reduce to zero the consumption of pecuniary private benefits in controlled companies. This focus is misplaced. The better question is why attempts to constrain pb consumption have been unsuccessful for so long. The answer, in our view, is that some level of pb consumption is efficient; hence, firms and shareholders agree, albeit informally and sometimes secretly, to permit it. A better legal approach would permit controllers to consume private benefits, but then consider how to improve the efficiency of their consumption. For example, some channels of pb consumption, such as related party transactions, are relatively easy for minority shareholders to observe, while others, such as taking a corporate opportunity, are easier to conceal from them. A promising legal response would create differentially rigorous disclosure requirements for contracting out of corporate opportunity regulation than for related party regulation. Pecuniary private benefit consumption is an efficient practice that is subject to abuse. Perhaps a better research agenda would ask how to preserve its virtues and curb its abuses rather than search for ways to stamp the practice out altogether.

Second, analysis should distinguish between the two varieties of private benefit consumption: pecuniary and nonpecuniary. The latter poses different issues. There are two difficulties. Initially, it can be hard to evaluate particular instances of nonpecuniary private benefit consumption. For example, let a controller use her status, and some firm money, to campaign for political office. Money used in this way will not improve controller incentives to maximize value. On the other hand, controllers commonly use political office to benefit their companies. Hence, using perks of control to enter politics could benefit minority shareholders. It may be objected that the controller will use political office to help avoid efficient regulation or implement inefficient regulation. On the other hand, existing regulation may be inefficient; if so, the controller would create social as well as private benefits by helping to change it. As another

example, the controller may leverage her corporate status to obtain prestigious nonprofit positions, such as being on the board of a local symphony or museum. A recent corporate governance concept holds that companies need “a social license to operate”, by which apparently is meant, among other things, that a company should be active in local community activities. Hence, socially active controllers may benefit their companies. There is a need for theory based criteria that would help the market and decision makers to distinguish good private nonpecuniary benefit consumption from bad.

There is a deeper and related concern. It is difficult to know how controllers act when their utility functions include pecuniary and nonpecuniary benefits. As an illustration, a controller may derive utility from a reputation as a good manager as well as from being a good citizen. If so, the controller likely acts as the controllers modeled above, and there is no policy problem. On the other hand, a controller may feel better about herself, and prize the resultant reputation, if she forgoes profits in order to build an environmentally advanced office complex or continues to operate unprofitable plants.

Our policy proposals probably would survive a more realistic treatment of controller preferences. It is difficult to know for sure. Thus, our best grounded recommendation is that there is more to be learned about private benefits of control.

December, 2012



## Appendix: Judicial Error

Controllers comply by taking the share  $\beta^*(k)$  from realized firm value and cheat by taking the share  $\beta^*(d)$ .<sup>97</sup> The decision is made at  $t^4$ , when value is realized. Denote as  $z$  the sum the controllers took:  $z_c$  equals  $\beta^*(k)v$  – compliance;  $z_s$  equals  $\beta^*(d)v$  – cheating. The court's task is to find whether the controllers took too large a share: that is, cheated. We let  $\beta(c)$  be the share the court finds that the controllers took. Because  $\beta = z/v$ , there are three sources of judicial error: The court is mistaken as to (i)  $\beta^*(k)$ ; (ii)  $z$ ; or (iii)  $v$ . The question is whether the possibility that a court will make one or more of these errors causes the controllers' expected return from cheating to exceed their expected return from compliance. Denoting the firm's true value as  $v$ , compliant controllers earn the certain return  $\beta^*(k)v$ .

We assume initially that the court errs only by misidentifying the value of the firm. More precisely, the court knows the value distribution but it does not know the value of the firm before it. Firms are difficult to value, so valuation errors – finding the wrong  $v$  -- are a likely source of mistake. To understand the effect of valuation errors, we let  $v_\alpha$  be the value the court finds. The court is accurate when  $v_\alpha = v$  and, on the assumptions here, the court will then correctly identify cheating. For example, let  $\beta^*(k) = .3$  and  $v_\alpha = v = \$1,000$ . The controllers would be correctly identified as cheaters if  $z = \$400$ : this amount of pb consumption when value is  $\$1,000$  implies a  $\beta(c)$  of  $.4$ , which exceeds  $\beta^*(k)$ .

The true value of the firm may be distributed on  $[0, v_{\max}]$  but the *relevant* distribution – the distribution a court sees -- is truncated from below. Controllers can only take money from a successful project. Hence, that there was money for controllers to take tells the court that the firm has positive value.

To pursue the effect of valuation errors, we assume that the controllers cheat by consuming  $z_s = \$400$  of pb and that the minimum firm value the court will find is  $v_{\min} < v < v_{\max}$ . First let  $v_\alpha$  be drawn from the  $v_{\min}$  to  $v$  part of the value distribution. The controllers then do worse than if they had complied. The court restricts them to the return  $\beta^*(k)v_\alpha$ . This is less than the return to compliance because the complier realizes  $\beta^*(k)v$ , and  $v$  is greater than any  $v_\alpha$  in the range  $v_{\min}$  to  $v$ .

The court also finds cheating if it believes that the firm's value is in the range  $v$  to  $v_{\alpha s}$ . Here,  $v_{\alpha s}$  is the value above which the court will find a cheater to have complied. Continuing with the example above,  $z_s = \$400$ ; hence any value of  $v_\alpha$  between  $v$  of  $\$1,000$  and  $\$1,199$  --  $v_{\alpha s}$  -- implies a  $\beta(c)$  above  $.3$ . The court also restricts controllers to the  $\beta^*(k)$  share in the value range  $v$

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<sup>97</sup> Recall that  $\beta^*(d)$  is the controllers' ex post optimal share. Hence, the controllers will either consume it or comply.

to  $v_{as}$ . Regarding the logic, when controllers cheat, they take more than  $\beta^*(k)$  of the firm's true value. Hence, a court can find cheating –  $\beta(c)$  is too high – when  $v_\alpha$  is greater than  $v$ . Cheaters, however, do better than compliers in the judicial value range  $v$  to  $v_{as}$ . The court permits controllers to keep  $\beta^*(k)$  of the value it finds the firm to have: controllers then do better because  $v_{as} > v$ . In the example above, let the court find the firm's value to be  $v_\alpha = \$1,150$ . Then it will correctly detect cheating but permit the controllers to keep  $.3 \times \$1,150 = \$345$ . Compliers realize only \$300 because they take  $\beta^*(k)$  of the firm's true value.

Finally, cheaters do better than compliers in the range  $v_{ac}$  to  $v_{max}$ . In this range, the court believes that the controllers have complied; hence, it permits cheaters to keep what they took. Continuing with this example, suppose the court finds  $v_\alpha = \$1,400$ . This implies a  $\beta(c)$  of .286, which is compliant, when  $z_s = \$400$ . The cheating controllers could then keep \$400. Had they complied, they would have realized \$300.

Turning to the expected value of cheating, recall that the value distribution is truncated at  $v_{min} > 0$  but it is unbounded from above. Such a distribution takes the form of what statisticians call the pareto distribution. Letting the parameter  $\Upsilon$  reflect the spread of the distribution, the probability that a value  $X$  is greater than some value  $x$  – the cumulative distributive of  $X$  – for a pareto distribution is given by

$$CDF = 1 - \left(\frac{x_{min}}{x}\right)^\Upsilon$$

In the literature, a conservative value for  $\Upsilon$  apparently would be two. Thus, when the true value of the firm is  $v = \$1,000$  and the minimum value is \$500, the probability that a court will draw  $v_\alpha > v$  is .75. Because cheaters do better than compliers in the entire range  $v$  to  $v_{max}$ , and because the probability that the court will find the firm's value to be in that range likely equals or exceeds 75%, the expected return to cheating --  $G_s$  – exceeds the certain return to compliance –  $G_c$  – when judicial errors take the form of mistaking firm values.

Regarding the other sources of error, plausible speculation suggests that the court is more likely to underestimate the amount the controllers took,  $z$ , than overstate it because today controllers have an incentive to minimize the appearance of their pb payoffs. Recall that the court compares the share it believes the controllers to have taken,  $\beta(c)$ , to the specified share,  $\beta^*(k)$ . Hence, underestimating  $z$  increases the probability that a court will erroneously find compliance; for  $\beta(c)$  falls as  $z$  falls. In the example above, suppose that  $v_\alpha = v$  but the court incorrectly finds that  $z_s$  is \$300. Then the court will find that the controllers complied, though they cheated by taking \$400.

Courts also may err in finding  $\beta^*(k)$  because today this must be recovered from other verifiable parameters; contracts that explicitly specify shares are not enforceable. Valuation

mistakes may influence courts to overestimate  $\beta^*(k)$  if the value the court finds the firm to have influences the court's finding of the ex ante expected value. The apparent prevalence of hindsight bias suggests that this mistake sometimes occurs. To see the effect, solve Expression (5), describing the shareholders' expected return, for  $\beta^*(k)$ . We have

$$\beta^*(k) = 1 - \frac{s}{\lambda p(e)v}$$

$\beta^*(k)$  increases as a finding of expected value  $- p(e)v -$  exceeds the true expected value. The higher is  $\beta^*(k)$ , in turn, the more likely the court is to find that  $\beta(c)$  is below it. Because  $\beta(c)$  is derived from  $z$ , the sum the controllers actually took, overestimating expected values increases the likelihood that courts will find compliance when controllers cheated.