A Contracting Model of Entire Fairness: An Analysis of Divestitures of Parent-Held Control Blocks

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ABSTRACT

We develop a contracting theory of entire fairness and apply it to divestitures of majority blocks held by controlling parent firms, including affiliate purchases of such blocks, transactions subject to entire fairness due to the potential for self-dealing. A parent can also divest its stake via business judgment rule methods. Theory and evidence indicate that under entire fairness affiliate purchases occur only when both parent and affiliate hold positive private information; premiums paid are equal to those paid in arm's length, third party deals. Affiliates gain value at block purchases but lose value in spin-offs and secondary stock issues.

1 Introduction

We develop a contracting model of entire fairness that applies within the framework of a divestiture transaction that has a potential for self-dealing. To this purpose we consider the divestiture of a parent-held control block in a listed affiliate, taking account of the alternative transactions available to a parent firm. In this context, when an affiliate purchases the control block held by its parent, there is ipso facto a potential for parent self-dealing. In the absence of legal protection of the affiliate's minority shareholders, the controlling parent could enforce a high enough transaction price to transfer wealth away from

the affiliate's minority shareholders to parent shareholders. However, entire fairness, an element of corporation law that occupies an important place in Delaware's common law (and by extension throughout the United States), applies to such a subsidiary purchase. Entire fairness affords protection to the minority shareholders of a listed subsidiary by empowering a court to make a substantive evaluation of this conflict transaction; i.e., shareholders are entitled to legally challenge the transaction and a court can call upon the parent to establish to the court's satisfaction that the transaction encompasses both *fair dealing* and *fair price*.[1]

Unlike a subsidiary purchase, other methods of divesting the control block, such as a sale to an unaffiliated third party, a spin-off to parent shareholders, or a public secondary offering to dispersed capital market investors, are not subject to entire fairness. These other divestiture transactions are governed by the business judgment rule, which establishes the right of controlling parent managers and directors to make good faith business decisions to enhance parent shareholder wealth, without fear of being second-guessed by a court, even if a decision later proves to be unwise.[2]

In this paper we develop an economic theory that takes account of the requirement of entire fairness for a subsidiary purchase. Our theory also shows the implications for the wealth of minority shareholders of a listed subsidiary when a parent firm undertakes alternative methods of divesting its majority stake in such a subsidiary, including the case of a subsidiary purchase. There are two important facets of our work. One, we consider under what conditions the divestiture will take the form of an affiliate's purchase of the parent-held block, given the requirement that the purchase comply with entire fairness, rather than the parent divesting the block via an alternative method that is governed by the business judgment rule. These business judgment methods include a sale to an unaffiliated third party, a spin-off to parent shareholders, or a public secondary offering to dispersed capital market investors. Two, we determine the fair price for an affiliate purchase, which establishes a benchmark for the fair price test of the entire fairness standard.

Our contracting theory of the choice of divestiture method takes account of entire fairness for affiliate purchases and generates several empirical predictions. We test the theory by examining samples of relevant divestiture transactions in which a parent divests a controlling interest in a listed subsidiary, so we can report evidence about the effect of each type of divestiture on the value of both the listed affiliate and the parent. Our empirical results indicate that

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[1]See Cinerama, Inc. v. Technicolor, Inc., 663 A.2d 1156, 1163 (Del. 1995), stating that once entire fairness applies, defendants must establish "that the transaction was the product of both fair dealing and fair price."

[2]For example, see In re CompuCom Systems, Inc. Stockholders Litigation, 879 A.2d 604 (Del. Ch. Sept. 29, 2005) ("a controlling stockholder has the right to sell his control share without regard to the interests of any minority shareholder, so long as the transaction is undertaken in good faith.").

affiliate purchases of parent-held control blocks enhance value for both parents and affiliates and are consistent with entire fairness. The results for the other types of divestitures of parent-held control blocks are also consistent with the predictions of our theory.

In our contracting theory a parent firm owns a controlling stake in a listed affiliate, so parent ownership is shared with minority shareholders. We assume that parent and affiliate managers (directors) each have private information about affiliate value, and that the parent is free to divest its control block via a transaction that is governed by business judgment, eliminating the potential legal challenge intrinsic to an affiliate's purchase of the control block (SP). We consider three types of divestiture transactions that are alternatives to an affiliate's purchase of the parent-held block: an asset sale (AS), where the control block is sold to an unaffiliated third party (without the participation of minority shareholders); a securities issuance (SI), where the block is sold to dispersed capital market investors via a public offering; and a spin-off (SO), where the shares are distributed pro rata to parent shareholders.[3]

We first show that if a subsidiary purchase can occur in the absence of entire fairness, the parent would enforce a transaction price that transfers wealth away from subsidiary minority shareholders and toward parent firm shareholders. We then develop a contracting model in which a subsidiary purchase meets the standard of entire fairness; i.e., a negotiation that leads to a fair outcome in the sense that, once the terms of the proposed deal are stated and each party's private information is revealed, each party has no regret at completing the deal, so there is no coercion. Formally, the model is a direct mechanism mapping each party's private information on to the method of divesting the control block and the terms of the deal, where both ex post individual rationality and ex post incentive compatibility constraints are satisfied. Ex post individual rationality implies that after learning the other party's private information, the deal structure, and the terms of the deal, each party is willing to accept it and has no regret in completing the deal.[4] Such equilibria are consistent with entire fairness.[5]

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[3]Unlike the United States, some countries (including the European Union) impose a mandatory bid rule so a parent-held control block cannot be acquired by another party without making an offer to all shareholders. For such countries the asset sale in our model could only apply to parent-held blocks below the mandatory bid threshold.

[4]This revelation of private information in the model can be viewed as paralleling the legal requirement that material information related to the transaction must be disclosed to a properly empowered special committee, including up-to-date internal management projections, asset valuations, and other information about the entity's prospects (In re Emerging Communication Shareholder Litigation, C.A. No. 16415, 2004 WL 1305745 (Del. Ch. June 4, 2004).

[5]Ex post incentive compatibility guarantees that the model's predictions do not depend on each party's specific beliefs about elements that are known by other parties and the Revelation Principle implies that the model's predictions are robust and would apply to any conceivable game theoretic situation between the parties.

We map configurations of parent and affiliate private information on to methods of divesting the control block. The affiliate's opportunity to purchase the control block (without coercion) is an essential element of the model and it gives affiliate managers (directors) an incentive to truthfully disclose their private information. We show that under entire fairness an affiliate purchase occurs only when both the parent and affiliate possess positive private information about affiliate value. The purchase occurs at a premium to the affiliate's current share price that reflects this positive information. The model predicts that, with entire fairness, at news of the purchase, the affiliate's value increases by an amount equal to the premium paid to the parent. Parent value also increases due to the premium it receives for selling the control block to the subsidiary.

In the case where both the parent and affiliate hold negative information, affiliate manager negative information deters the affiliate from purchasing the parent-held shares, and parent negative information deters the parent from maintaining ownership of the affiliate via a spin-off of the control block to parent shareholders. As a result, the parent divests the block via a secondary stock issue (to dispersed capital market investors) and affiliate share price falls, reflecting the dual negative information of parent and affiliate managers. When parent information is positive, but affiliate information is negative, the parent divests the block via a pro rata spin-off to parent shareholders. The spin-off allows parent shareholders to retain their ownership in the (spun-off) affiliate, which is worth more than the proceeds the parent would obtain in a secondary stock offering. Third party sales occur when affiliate private information is positive and parent information is negative. The sale of the control block to an unaffiliated third party acquirer (an arm's length transaction) provides a fair price benchmark for an affiliate purchase. This result implies that under entire fairness the premium paid to the parent in a subsidiary purchase does not differ from the premium paid in an arm's length asset sale. Because spin-offs and asset sales occur when there are mixed signals about affiliate value, market reactions for listed affiliates at announcements of these transactions are more favorable than for a secondary offering (which is associated with dual negative signals) but less favorable than for an affiliate purchase that occurs under entire fairness (which is associated with dual positive signals).

The tableau of market valuation effects of the various outcomes predicted by our contracting model can be interpreted as expected share price reactions (changes in market values) for parents and affiliates at news of the various types of divestiture transactions. Thus, our empirical work examines capital market responses to divestitures of control blocks in listed affiliates by listed parents. We find affiliate purchases of parent-held control blocks enhance value for both parties. In contrast, divestitures via secondary stock issues and spin-offs generate significantly negative effects on affiliate value. We also find that transaction price premiums do not differ between subsidiary purchases

and asset sales to unaffiliated third parties. The pattern of this evidence is consistent with the implications of our contracting model under entire fairness.

The remainder of the paper is organized as follows. Section 2 discusses our contribution to the literature and provides economic and legal perspective for divestiture transactions. The theory is in Section 3. We first describe the model and the problem of self-dealing that applies in the case of a subsidiary purchase in the absence of entire fairness protection for minority shareholders of a subsidiary. Then we characterize the divestiture choice problem given the entire fairness standard for a subsidiary purchase. Section 4 presents empirical implications. Section 5 reports empirical results for samples of divestitures of control blocks in listed affiliates. Conclusions are in Section 6. Proofs are in the appendix.

2 Contribution to the Literature

2.1 Methods of divestitures

Economic studies of divestitures invariably abstract from any legal framework (other than assuming that business judgment governs) and view divestitures as part of the broader market for corporate control. From this perspective, divestitures transfer assets to higher valued uses, whether through intercorporate asset sales (e.g., Jain, 1985 and Hite *et al.*, 1987) or spin-offs (e.g., Hite and Owers, 1983; Schipper and Smith, 1983; Fluck and Lynch, 1999). As such, a parent divests an asset that can be better managed by another firm or as an independent entity, so a divestiture signals greater cash flows at the subsidiary, increasing its value, and parent value rises to reflect this increase. This reasoning implies that a divestiture should convey favorable information about the value of the asset to be divested. Numerous empirical studies examine how a given type of divestiture of a wholly owned asset affects parent firm value, but not the effect on the asset to be divested.[6] Nanda and Narayanan (1999) argue that a parent has an incentive to divest an overvalued subsidiary, so a divestiture should be a negative signal about affiliate value irrespective of the type of divestiture. Zingales (1995) argues that a subsidiary with potential synergies should be divested through a sale to a third party while a subsidiary with limited potential for synergies should be divested through a spin-off. In contrast to prior work, our analysis shows that the equilibrium choice of divestiture method is linked to the signs of the private information of the different parties affected by the various transactions. We also show that a broad range of divestiture outcomes are feasible as long as third party acquirer synergies are neither so large as to make a third party

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[6]For a review of the numerous empirical studies reporting positive average parent returns at announcements of various types of divestitures, see Eckbo and Thorburn (2008).

sale the only relevant method of divesting the parent's stake nor so small that a sale to a third party is never viable.

Other studies consider the role of private equity in management buyouts of divisions (Hite and Vetsuypens, 1989) and divisional buyouts by private equity groups (Hege *et al.*, 2018). These studies show that parent shareholders sustain significant gains in wealth from such divestitures and reject the hypothesis that private equity involvement in a divestiture transfers wealth away from parent firm shareholders.

Unlike prior studies of divestitures, our theory generates empirical predictions about the effects of each method of divestiture on the value of the subsidiary, as well as on the parent and the parent stub (the non-subsidiary component of the parent). As such, our work details the wealth gains that arise from divesting control of an asset per se, gains that are apart from any gains (losses) that may result from the separate issue of initiating public trading in subsidiary shares (e.g., greater transparency and access to market-based managerial compensation). To the best of our knowledge, our paper is the first to analyze both theoretically and empirically the effect of alternative divestiture methods on subsidiary market value.

Our finding of the positive effects of affiliate purchases of parent-held blocks under the entire fairness standard is related to studies on the sale of control blocks. Prior evidence indicates that block transactions in which control is partially or fully transferred and that are not subject to entire fairness, typically occur at a premium to market price and generally increase share value (e.g., Barclay and Holderness, 1991; Holderness and Sheehan, 1988). Albuquerque and Schroth (2010) estimate that the presence of a control block increases share value by about 20%. On this basis, divestiture methods that involve the dissolution of a control block in a publicly traded affiliate, should decrease affiliate value, which is consistent with our findings for the negative impact on subsidiary value at spin-offs and secondary offerings of parent-held blocks in affiliates, but not for the positive effect of affiliate purchases.

2.2 *Legal and economic perspectives for going concern conflicted transactions*

Most corporate divestitures are governed by the business judgment rule which shields the actions of corporate directors acting in good faith from judicial review. However, an affiliate's purchase of a parent-held control block has a potential for parent self-dealing because of the parent's interest in obtaining a premium for its control block, and as such, it is subject to entire fairness. Entire fairness is Delaware's most onerous standard of review and the burden of proving fairness generally falls on the party with control. Delaware law sets standards for court scrutiny of entire fairness. When entire fairness applies, the defending corporation must be able to establish to the court's

satisfaction that the transaction was the product of both fair dealing and fair price.[7] Delaware courts are empowered to evaluate these deals de novo and can disallow (or adjust) deals judged unfair to minority shareholders. Delaware courts also specify safe harbor procedures a parent firm can adopt to lessen the risk of shareholder litigation. Eisenberg (1976), Brudney and Clark (1981), and Bebchuk (1989) argue that conflicts of interest entailed in deals between controlling parents and their listed affiliates are not effectively controlled by market forces, so entire fairness is needed to protect minority interests in conflicted going concern transactions. In contrast, Easterbrook and Fischel (1982) criticize Delaware's strictness, arguing that applying entire fairness discourages firms from undertaking some conflict transactions that would enhance value, and they suggest that such decisions deserve judicial deference.

Affiliate purchases of parent-held control stakes have not been examined in prior literature. From the economic perspective of the parent, an affiliate purchase is a corporate divestiture. It can also be viewed as a variant of a targeted share repurchase; i.e., an affiliate's repurchase of a share block held by a large shareholder (the parent). In each case the purchased stock is retired or becomes treasury stock. Corporate share repurchases typically occur at a premium to market price, generate negative share price effects for repurchasing firms, and can be viewed as a means of transferring wealth away from dispersed shareholders (Dann and DeAngelo, 1983; Bradley and Wakeman, 1983; Mikkelson and Ruback, 1991).

In an affiliate purchase of a parent-held control block, the price is negotiated between the parent and the affiliate. As a conflict transaction, courts retain the authority to evaluate the deal's entire fairness. Case law details the applicable criteria, including whether the procedure used to negotiate the sale is fair (fair dealing test) and whether the transaction price is fair (fair price test). Fair dealing covers whether negotiations are conducted by competent individuals free of conflict of interest. Given that a controlling shareholder often has considerable sway over directors, Delaware courts have indicated that even independent directors may find it difficult to evaluate objectively a deal involving the controlling shareholder. Thus, directors may have difficulty conducting independent bargaining with controlling shareholders (Kahn v. Lynch Communications Systems (638 A.2d (Del., 1994)).[8]

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[7]As indicated in Gesoff v. IIC Industries Inc., 902 A.2d 1130, 1145 (Del. Ch. 2006), "Not even an honest belief that the transaction was entirely fair will be sufficient to establish entire fairness. Rather, the transaction itself must be objectively fair, independent of the board's beliefs."

[8]This ruling, where the court held that Lynch's committee of independent directors had failed the test of acting in a truly independent manner, had numerous precursors in the form of cases concerning transactions that involve controlling shareholders, see for example, Sterling v. Mayflower Hotel Company, 93 A.2d 103 (Del. 1952).

Delaware case law has promoted the use of special committees of independent directors to cleanse conflict transactions and increase the probability that a transaction meets the entire fairness standard. A special committee must have the authority to bargain on behalf of minority shareholders, including the ability to retain independent legal and financial advisors. For the fair price test, the controlling shareholder has the burden of demonstrating that the deal entails terms that could be expected to apply if there were arm's-length bargaining.[9] In effect, Delaware law can be viewed as protecting minority interests in continuing corporations (McGinty, 1997). In practice, the entire fairness standard leaves some ambiguity as to the judicial treatment that will be accorded a specific affiliate purchase of its parent's controlling stake. An example of this ambiguity is the case of Activision Blizzard, a NASDAQ-listed firm majority controlled by Vivendi, which agreed to purchase the common stock held by its controlling parent for $6 billion. The Delaware Chancery Court issued an injunction prohibiting the deal until certain conditions were met (Hayes v. Activision Blizzard, Inc., C.A. No. 8885, 2013 WL 5293536 (Del. Ch. September 18, 2013). However, on appeal the Delaware Supreme Court lifted the injunction, and permitted the transaction to be consummated under the original terms (Activision Blizzard Inc. v. Hayes, C.A. No. 497, 2013 (Del. Nov. 15, 2013)).

Our contracting model incorporates two key aspects of Delaware's approach to conflict transactions: One, the need for a special committee to have the authority to engage in informed and effective arm's length negotiations, including the power to reject a deal deemed unfair to minority shareholders (Kahn v. Lynch Communications (638 A.2d (Del. 1994)). Two, the parent's right to act in its own best interest and to seek a premium for its control shares (Gentile v. Rossette (906 A.2d. 91 (Del. 2006)); i.e., the owner of a control block is generally free to divest it and to receive a premium not available to dispersed shareholders.

Our model designs a direct mechanism that permits a deal between an informed seller (parent) and an informed buyer (affiliate), as well as other potential buyers (capital market investors or an unaffiliated third party). A direct mechanism maps configurations of parent and affiliate private information on to methods and terms by which the parent can divest its controlling interest in the affiliate. Intuitively, a direct mechanism is a three step procedure where one, parties are asked to report their private information; two, based on the

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[9]In Weinberger v. UOP, Inc., 457 A.2d 701 (Del. 1983) the Delaware Supreme Court ruled that a squeeze-out merger was flawed by conflicts of interest and the denial of important information (about the value of the shares) to minority shareholders, so the deal was deemed as unfair to minority shareholders. The court set out conditions for entire fairness, including the responsibilities of a majority shareholder to provide relevant information that pertains to a proposed transaction, and it set out actions that can be undertaken by a majority shareholder to improve its chances of being able to show that such a transaction is fair.

information the parties report, a deal is proposed; and three, the parties can accept the terms and complete the deal or are free to reject it (i.e., no coercion). Given entire fairness, we focus on the fact that a direct mechanism satisfies two key properties. First, it is ex post incentive compatible, so it is in the interests of both the parent and affiliate to report the truth no matter what they think is the other party's information. Second, the mechanism is ex post individually rational, so after learning the other party's private information, the proposed deal structure, and the proposed price, each party is willing to accept the deal and has no regret in completing it. These characteristics comport with fair dealing in terms of Delaware law which requires that in a conflict case a majority owner (the parent) cannot gain value in a purchase by withholding information to a party (the subsidiary) to whom it owes a fiduciary duty.

The business judgment rule, a core element of corporation law, gives a parent firm the freedom to choose the method of disposing of a control block so, aside from an affiliate purchase, the direct mechanism encompasses three other divestiture methods that fall under business judgment and afford no role to affiliate minority shareholders: spin-off, secondary offering, and third party sale.

3   The Contracting Model

Consider a corporate structure consisting of two entities: the parent and its affiliate. The parent, which has a dispersed shareholder structure, owns non-affiliate assets, termed the parent stub, plus a stake β in an affiliate. We assume that $50\% < \beta < 100\%$, that is, the parent owns a controlling stake in the affiliate, but the parent's ownership is shared with minority shareholders who have no role in the decisions made about the entity given the parent's majority control. We interpret affiliate managers and minority shareholders as a single coalition, presumably led by the affiliate's independent directors (i.e., a special committee) charged with furthering affiliate shareholder interests.[10] Henceforth we name this coalition the *affiliate*. In what follows, we model the relation between a controlling parent shareholder (henceforth the *parent*) and the affiliate when there is a gain that can be created from divesting the controlling interest in the affiliate. We assume there exist some synergies to the parent from its control of the affiliate, but there are also some proprietary

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[10]Since the Delaware court ruling in the case of Weinberger v. UOP, Inc., 457 A.2d 701 (Del. 1983) it has become increasingly common for companies to appoint special committees of independent directors to cleanse a control transaction in which there may be a conflict of interest. Bainbridge (2002) considers the role of special committees for transactions with controlling shareholders.

(agency or rent-seeking) costs to its ownership of a listed affiliate.[11] Thus, a divestiture will affect the intrinsic values of both the divested asset and the parent stub.

The values of the parent stub and the affiliate within the current ownership configuration are known and equal to w_0 and v_0, respectively, so the initial wealth of parent shareholders is $w_0 + \beta v_0$ and of affiliate minority shareholders is $(1 - \beta)v_0$. At time 1, unexpected private information emerges about the value of parent stub and affiliate future cashflows should they be managed as separate independent entities. The parent (affiliate) receives a private signal σ_P (resp. σ_A) that is either positive, $\sigma_P = H$ (resp. $\sigma_A = h$) or negative, $\sigma_P = L$ (resp. $\sigma_A = l$). Thus, there are four possible states of nature $s \in S := \{(H,h),(H,l),(L,h),(L,l)\}$ reflecting the four possible combinations of private signals. Positive and negative refer to the affiliate's intrinsic value and its synergies with the parent in the sense that compared to a negative signal, a positive signal is associated with a higher stand-alone value of the affiliate asset and higher net synergies between the parent stub and the affiliate asset. We denote with $w(s)$ and $v(s)$ the parent stub and affiliate intrinsic values in a given state $s \in S$, respectively. That is, if the state is s and the parent stub and the affiliate asset are independent stand-alone companies, they will generate cashflows with present values of $w(s)$ and $v(s)$, respectively. In other words, in state s, by divesting its majority stake in the affiliate, the parent stub's intrinsic value becomes $w(s) = w_0 - d(s)$, where $d(s) := w_0 - w(s)$ and corresponds to the value in the parent stub that is lost by divesting the affiliate asset. The total value created in state s by separating the affiliated asset from the stub is equal to

$$w(s) + v(s) - w_0 - v_0 = v(s) - v_0 - d(s)$$

We assume that for all private signals $\sigma_P \epsilon \{H, L\}$ and $\sigma_A \epsilon \{h, l\}$, we have

$$v(\sigma_P, \sigma_A) - v_0 - d(\sigma_P, \sigma_A) \geq 0$$
$$v(\sigma_P, h) > v(\sigma_P, l)$$
$$v(H, \sigma_A) > v(L, \sigma_A)$$

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[11] Proprietary costs arise from potential conflicts of interests associated with managing a public affiliate (Dye, 1986; Darrough and Stoughton, 1990; Wagenhofer, 1990; Verrecchia, 1990). For example, placing intercompany dealings on a fair basis and allocating overhead costs are intrinsically difficult problems to solve. A loss in value to the parent also arises from the potential for affiliates to generate influence costs on a parent. Such rent-seeking activities arise from the efforts of affiliates with poor prospects to affect parent decisions to protect the unit (Milgrom, 1988; Milgrom and Roberts, 1990; Meyer et al., 1992; Scharfstein and Stein, 2000). These costs arise from the need for managers to be responsible to more than one set of stockholders, and represent real resources devoted to influencing the distribution of gains rather than creating wealth, implying a loss in efficiency.

$$d\left(\sigma_P, h\right) > d(\sigma_P, l)$$
$$d\left(H, \sigma_A\right) > d(L, \sigma_A)$$

The first inequality implies that divesting the asset can generate some value, so we can focus on equilibrium conditions that lead to a divestiture of the parent's stake. The other inequalities correspond to our definition of positive and negative signals. To assure that disclosure of private signals affects the value of the asset to be divested in a non-trivial way, we assume

$$\min\{v(L, h), v(H, l)\} \le v_0 \le \max\{v(L, h), v(H, l)\}.$$

Note that the above assumptions do not restrict the sign of $d(s)$ to be positive or negative.

3.1 The alternative divestiture methods

Our objective is to answer two questions. First, under what conditions will the divestiture of a parent-held control block take the form of an affiliate's purchase of this block as a voluntary outcome of a fair negotiation and at a fair price consistent with the entire fairness standard? Second, what conditions will induce a parent to divest the control block via alternative transactions that are governed by the business judgment rule?

To this purpose we detail four divestiture methods.

Affiliate purchase (SP): The parent sells the majority block to minority shareholders and receives a payment of C_{SP} from the affiliate. Because the parent is a controlling shareholder this transaction has a potential for parent self-dealing (such as by inducing the affiliate to overpay for the control block), so under corporation law the purchase is subject to entire fairness (including the fair price test). The parent's post-transaction value is

$$P_{SP} = w_0 - E\left(d\left(\tilde{s}\right)|SP, C_{SP}\right) + C_{SP}$$

The affiliate's post-transaction value is

$$S_{SP} = E\left(v\left(\tilde{s}\right)|SP, C_{SP}\right) - C_{SP}.$$

Third party asset sale (AS): The parent sells its stake to an unaffiliated third party at a price negotiated between the two parties. This type of divestiture can also be viewed as the negotiated sale of a block of stock because the third party buyer and the parent are free to negotiate the sale of control, effectively an intercorporate asset sale, without any shareholder involvement. The post-transaction value of the parent is

$$P_{AS} = w_0 - E\left(d\left(\tilde{s}\right)|AS, C_{AS}\right) + C_{AS}$$

where C_{AS} is the price paid by the third party buyer.[12] The affiliate's post-transaction value is

$$S_{AS} = (1 - \beta) E (v(\tilde{s})|AS, C_{AS})$$

Let us denote with $V(s)$, the value to the acquirer of a stake β in the affiliate asset in state s. This value will depend on the state of nature s, and on the acquirer's specific synergies with the asset. Hence, with minimal loss of generality we can decompose $V(s)$ as follows: $V(s) = \beta v(s) + d(s) + x$, where x incorporates the acquirer's idiosyncratic synergies component. Thus, the change in third party buyer value is

$$\Delta B_{AS} = E (\beta v(\tilde{s}) + d(\tilde{s}) + x|AS, C_{AS}) - C_{AS}$$

To assure that a sale to a third party buyer is neither a trivial solution nor an impossible outcome, we focus on the case where a third party acquirer's synergies satisfy $x^* < x < x^{**}$, where $x^* = \beta v(H, h) - \beta v(L, h) - d(L, h)$ and $x^{**} = \beta v(H, h) - \beta v(L, l) - d(L, l)$. The condition $x^* < x < x^{**}$ is equivalent to stating that third party acquirer synergies are neither so large as to make a third party sale the only relevant method of divesting the parent's stake nor so small that a sale to a third party is never viable.[13] We also assume that there is a small but strictly positive probability, $\varepsilon > 0$, that no third party acquirer is available.

Spin-off (SO): The parent divests its stake in the affiliate to parent company shareholders via a pro rata non-cash dividend. Unlike an asset sale, a spin-off avoids the need to find a suitable buyer and there is no need to sell the shares in the capital market. Thus, all of the necessary arrangements are fully within the discretion of parent managers. The post-spin-off wealth of parent shareholders is

$$P_{SO} = w_0 + E [\beta v(\tilde{s}) - d(\tilde{s})| SO]$$

and the post-transaction value of the affiliate is

$$S_{SO} = (1 - \beta) E [v(\tilde{s})| SO]$$

Secondary stock issue (SI): The parent sells its stake in the affiliate to capital market investors through a public secondary stock issue, where C_{SI} is the revenue from the sale of the shares. The post-transaction values of the parent and the affiliate are

$$P_{SI} = w_0 - E [d(\tilde{s})| SI, C_{SI}] + C_{SI}$$
$$S_{SI} = (1 - \beta) E [v(\tilde{s})| SI, C_{SI}]$$

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[12]The third party buyer is assumed to have some complementarities with the asset that motivate the purchase and allow the third party buyer to utilize the affiliate's resources in a manner that allows the buyer to offer a premium.

[13]These cases of extreme synergies are examined in the appendix.

Unlike a subsidiary purchase, which is subject to entire fairness, third party asset sales, spin-offs and secondary stock offerings, fall under the business judgment rule.

3.2   The self-dealing conflict

We first consider what the parent could obtain in a subsidiary purchase in the absence of the entire fairness standard. Because value can be created by divesting the affiliate asset and the parent owns a controlling stake in the affiliate, absent any legal protection for subsidiary minority shareholders, the parent could unilaterally impose an SP in which the affiliate acquires the parent's stake at some price C_{SP}^*. The only constraint the parent would confront in the choice of C_{SP}^* is the affiliate's limited liability. Thus, a parent with private signal σ_P will require the affiliate minority shareholders to purchase the parent stake at price $C_{SP}^*(\sigma_P) = v(\sigma_P, h)$. If the affiliate signal is $\sigma_A = h$, the present value of the affiliate asset's cashflow is equal to what is paid to the parent. If $\sigma_A = l$, the affiliate asset must be liquidated to pay $C(\sigma_P)$, but the parent will get $v(\sigma_P, l) < C_{SP}^*(\sigma_P)$. The affiliate will end up owning an asset that is worth $\max\{v(\sigma_P, \sigma_A) - C_{SP}^*(\sigma_P), 0\} = 0$. As a result of this transaction the affiliate's wealth decreases by $(1 - \beta)v_0$ whereas the parent's wealth increases by $w(s) + v(s) - (w_0 + \beta v_0) = v(s) - \beta v_0 - d(s)$. This amount is more than $v(s) - v_0 - d(s)$, the total value created by the deal. Note that we do not claim that in the absence of an entire fairness requirement, the parent will necessarily divest via an SP, as the other divestiture methods are also available to the parent. Instead, we have described how in the absence of the entire fairness standard parent and affiliate wealth would change should the stake be divested via an SP. We summarize this result below:

Proposition 1. *In the absence of entire fairness, if the parent is to divest the affiliate asset via an SP, parent wealth should increase by more than the total value created by the deal whereas the wealth of the affiliate's shareholders should decrease.*

3.3   The effect of the entire fairness standard

Let us now consider the situation in which the parent explores the affiliate's willingness to purchase the control block under the entire fairness standard, and also assess the three other divestiture methods that fall under the business judgment rule so minority shareholders have no role and cannot mount a legal challenge to these methods.

 We consider any conceivable game involving the parent, affiliate, third party buyer, and capital market investors, where the outcome specifies the type of transaction and the terms of trade. The Revelation Principle (Myerson, 1979)

implies that any equilibrium of such a game can be represented as a direct mechanism mapping parties' private information into an outcome. We rely on this principle and focus on *ex post direct mechanisms*, that is, the mapping from information to transactions must satisfy ex post individual rationality and incentive compatibility.[14] Ex post individual rationality implies that after learning the other party's private signal, and the resulting terms and the structure of the deal, each party is willing to accept the deal and has no regret in completing it. The no-regret characteristic implies that the mechanism implicitly entails a procedure that comports with provisions of Delaware case law with respect to entire fairness. Ex post incentive compatibility guarantees that it is in each party's self-interest to truthfully report its information, regardless of when and whether its information will be communicated to other parties, and what each party believes is the other party's information. This setup guarantees robustness of our results because it does not rely on any assumption about the probability distribution of the four states of nature nor on the specific negotiation procedure.

For expositional purposes we can interpret a direct mechanism as the outcome of the following three step game. First, the parent and affiliate each report to the mechanism a message $\sigma'_P \in \{H, L\}$, and $\sigma'_A \in \{h, l\}$, respectively. Second, given report $s' = (\sigma'_P, \sigma'_A) \in S$, the mechanism proposes a type of transaction and its terms. Third, parties involved in the transaction proposed by the mechanism decide whether or not to accept its terms. If all parties accept, the transaction occurs; otherwise, there is no deal and thus the divestiture does not take place. For a given report, $s' \in S$, let $(\beta_{s'}, C_{s'}, b_{s'}, c_{s'})$ denote the resulting deal. Here $\beta_{s'}$ represents the post-deal ownership that parent shareholders hold in the affiliate asset, whereas $C_{s'}$ denotes the cash received by the parent. Similarly, for the affiliate, $b_{s'}$ represents the post-deal ownership in the asset, whereas, $c_{s'}$ denotes the cash involved. The change in the value of the asset materializes only if the parent fully divests its participation in the asset, which implies $\beta_{s'} \in \{\beta, 0\}$, where $\beta_{s'} = \beta$ corresponds to a spin-off and $\beta_{s'} = 0$ corresponds to the other divestiture methods. Similarly, $b_{s'} \in \{1 - \beta, 1\}$, where $b_{s'} = 1$ in the case of a subsidiary purchase, and $b_{s'} = 1 - \beta$ otherwise.

In what follows we use the incentive compatibility and individual rationality constraints to derive nine necessary conditions that allow us to pin down the mapping from the parties' private information to the divestiture methods. Importantly, these conditions only apply to a mechanism that associates each of the four possible state of nature s $\in S$ to a different divestiture method. In

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[14]Ex post incentive compatibility is discussed by Holmström and Myerson (1983) and is often used to provide a more robust solution concept in mechanism design (Crémer and McLean, 1985). Ex post incentive compatibility requires that regardless of what one party believes is the other party's private signal, it is optimal for the parties to always truthfully transmit their information to the mechanism, given that they expect the other party to do the same.

Proposition 2 below we present the sufficient condition on x (the third party synergies) for such a mechanism to exist. In Lemma 1 and in the ~~A~~ppendix, we describe equilibria for the other levels of x.

Incentive compatibility constraints require that for each party it is optimal to report a message that reflects the party's actual private signal. More formally, for all states $s = (\sigma_P, \sigma_A) \in S$ and reports $s' = (\sigma'_P, \sigma'_A) \in S$, the parent and the affiliate incentive compatibility constraints are

$$\beta_s v(s) - d(s) + C_s \geq \beta_{(\sigma_{P'}, \sigma_A)} v(s) - d(s) + C_{(\sigma_{P'}, \sigma_A)} \tag{1}$$

$$b_s v(s) + c_s \geq b_{(\sigma_P, \sigma_{A'})} v(s) + c_{(\sigma_P, \sigma_{A'})} \tag{2}$$

respectively. Let us interpret these constraints. If the state is s and both parties truthfully report their signals, then $s' = s$ and the transaction (β_S, C_S, b_S, c_S) is realized. This leads the parent and the affiliate values to be equal to the l.h.s. of inequalities (1) and (2), respectively. If instead, the parent or the affiliate misreports its signal, whereas the other party truthfully reports its own signal, then another transaction is realized and the parent's, or the affiliate's, values are given by the r.h.s. of inequalities (1) or (2), respectively. Note that ex post incentive compatibility implies that truthfully reporting your own private information is optimal no matter what you think the other party's information is.

From these incentive compatibility constraints, we can already deduce some regularity. Because $v(s)$ is increasing in parties having positive signals, ex post incentive compatibility constraints (2) and (3) imply that $\beta_{H,\sigma_A} \geq \beta_{L,\sigma_A}$ and $b_{\sigma_P,h} \geq b_{\sigma_P,l}$, respectively. That is, in equilibrium, ownership in the affiliate that a party retains when having positive information cannot be small in comparison with its ownership when having negative information. Recall that in all four divestiture methods we have that $\beta_s \in \{\beta, 0\}$, $b_s \in \{1 - \beta, 1\}$, with $\beta_s = \beta$ only for the SO , whereas $b_s = 1$ only for the SP. We can then state the following necessary conditions

NC 1: *SO is associated with the positive signal for the parent.*

NC 2: *SP is associated with the positive signal for the affiliate.*

NC 3: *When both parties have negative signals, the asset is either divested via SI or via AS.*

Suppose that for some value of affiliate information, σ_A, the affiliate asset is fully divested by the parent for cash, i.e., $\beta_{(H,\sigma_A)} = \beta_{(L,\sigma_A)} = 0$. The divestiture method, however, can depend on the parent's reporting H or L. Then the parent incentive compatibility constraint requires that the parent's revenue from such divestitures does not depend on its report. Otherwise, a parent would behave as if it received the signal generating the higher

revenue regardless of its actual information. This reasoning has the following implication:

NC 4: *Suppose that for some value of the affiliate's signal σ_A the affiliate asset is fully divested by the parent for cash. Then the amount of cash received by the parent must be the same regardless of what the parent's signal is.*

Let us now consider the parent's individual rationality constraint. In all states s, the parent can always guarantee $\beta v(s) - d(s)$ by simply opting for an SO. Thus, the parent's individual rationality constraint is

$$\beta_s v(s) - d(s) + C_s \geq \beta v(s) - d(s) \tag{3}$$

for all $s \in S$. We can use this constraint to show that

NC 5: *SI can only be associated with both parties having negative signals. In an SI the parent's revenue is $C_{SI} = \beta v(L, l)$.*

Suppose that NC 5 is false; then SI emerges in some state $\neq (L, l)$, and because of NC 3, also in state (L, l) in the case where a third party acquirer is not available, an event occurring with probability $\varepsilon > 0$. Moreover, SO and SP cannot be used in this state, given NC 1 and NC 2. The cash proceeds, C_{SI}, from the SI equals the expectation of $\beta v(\tilde{s})$ given that the divestiture occurs via an SI. This implies $\beta v(L, l) < C_{SI} < \beta v(s)$. But in state s, this would lead the parent to gain $C_{SI} - d(s) < \beta v(s) - d(s)$, thus violating the individual rationality constraint (3). Hence, if an SI is realized, it must be that the true state is (L, l) and that the amount that the market will pay for a stake β in the affiliate asset is its fair value given this state: $\beta v(L, l)$.

Suppose $\sigma_A = l$ and the parent knows it. From NC 5, if the parent reports $\sigma'_P = L$, then an SI occurs, and parent revenue is $C_{SI} = \beta v(L, l)$. Suppose that by reporting $\sigma'_P = H$ the parent triggers an AS; then from NC 4, the parent revenue must also be $\beta v(L, l)$, leading to a payoff of $\beta v(L, l) - d(H, l) < \beta v(H, l) - d(H, l)$, thus violating the parent individual rationality constraint (3). Hence, we have

NC 6*: AS cannot be associated with the negative signal from the affiliate.*

Together with NC 1, NC 2 and NC 5, this implies

NC 7: *SO is associated with the positive signal from the parent and the negative signal from the affiliate.*

Furthermore, using NC 4 we can conclude that

NC 8: *AS and SP are associated with a positive signal from the affiliate and generate the same revenue to the parent.*

Suppose that SP occurs in state (L, h) and AS occurs in state (H, h). Then the affiliate participation constraint (given entire fairness) requires that the amount C_{SP} that the affiliate pays in an SP does not exceed the actual value of the block, that is $\beta v(L, h)$. But then from NC 4 and NC 8, this implies that in state (H, h) the parent proceeds equal $\beta v(L, h)$. But this would contradict the parent individual rationality constraint (3). Thus,

> **NC 9:** *SP must be associated with positive signals from both the parent and the affiliate, whereas AS emerges when the parent signal is negative and the affiliate signal is positive.*

The above nine necessary conditions must be satisfied in any ex post mechanism mapping of the four different states s into four different divestiture methods. The following Proposition completes the analysis showing that for intermediate levels of third party acquirer synergies, such a mechanism exists. This proposition characterizes the equilibrium outcome in the presence of the entire fairness standard.

Proposition 2. *For $x^* < x < x^{**}$, the unique ex post incentive compatible and ex post individually rational direct mechanism involving divestiture methods SO, SP, AS and SI is:*

- *If $(\sigma_P, \sigma_A) = (H, h)$, then the outcome is an SP: the affiliate buys the parent's interest for $C_{SP} = \beta v(H, h)$.*

- *If $(\sigma_P, \sigma_A) = (L, h)$, then the outcome is an AS: an unaffiliated third party buys the parent's interest for $C_{AS} = C_{SP}$.*

- *If $(\sigma_P, \sigma_A) = (H, l)$, then the outcome is an SO: the parent's interest is spun-off to parent shareholders.*

- *If $(\sigma_P, \sigma_A) = (L, l)$, then the outcome is an SI: the parent's interest is sold in the financial market to capital market investors via a secondary stock issue. The proceeds of the stock offering will be $C_{SI} = \beta v(L, l)$.*

We conclude with a brief discussion of the effect that occurs when a third party buyer has a level of synergies with the asset that is extreme, i.e., either higher than x^{**} or lower than x^*.

Lemma 1. *If third party buyer synergies are above x^{**} then in equilibrium, the divestiture of the parent's controlling stake will always take the form of an asset sale to an unaffiliated third party buyer. If third party buyer synergies are below x^* then in equilibrium, the divestiture of the parent's stake will never take the form of a sale to an unaffiliated third party buyer.*

This lemma shows that the full spectrum of methods for divesting a parent's stake would be incompatible with there being a third party buyer that has synergies that are either so large as to make any other type of divestiture inappropriate or so small as to make a sale to a third party buyer non-viable. The appendix shows the outcomes for such extreme values of x.[15]

4   Empirical Implications

Prior to divesting the parent-held shares in the affiliate, the value of the parent is $w_0 + \beta v_0$ and the value of the affiliate is v_0. The tableau of valuation effects for the affiliate, as well as for the parent stub and the parent, can be interpreted as predictions about share price reactions (for listed entities) at announcements of divestitures of parent-held majority interests. For a given method of diversting the stake $M \in \{AS, SP, SI\}$, let C_M be the payment to the parent. We denote with $q(M) = \frac{C_M}{\beta v_0} - 1$ the per share premium paid to the parent in a transaction of type M. For $M \in \{AS, SO, SP, SI\}$, we denote as $r_v(M)$ the effect on affiliate value when the parent's stake is divested via method M. We denote as $r_w(M)$ the effect on the parent stub's value.

Under entire fairness the affiliate buys the parent-held stake only when both the parent and affiliate have positive private information about the affiliate, and the increase in affiliate value reflects this dual positive information; i.e., $r_v(SP) > 0$. The price paid to the parent for the control block reflects this high value and hence $q(SP) = r_v(SP)$; that is, the affiliate pays a premium (measured relative to the affiliate's prior share price) to the parent that is equal to the increase in the affiliate's stock price observed at the deal's announcement. Also, a parent is paid the same premium for its control block in affiliate purchases and in third party sales, so the model implies that in the conflict transaction the affiliate pays the parent a premium for its control stake that is the same as that paid in an arm's length third party deal, a price that is consistent with the Delaware fair price standard. The affiliate is willing to pay this amount (without coercion) as a fair price for the parent's stake and the affiliate can expect to sustain an equivalent increase in its market value when the purchase is announced, reflecting the dual positive private information about the affiliate that is conveyed by news of the subsidiary purchase.

At the opposite extreme is a secondary stock offering of the parent-held shares, which occurs when both the parent and affiliate have negative private information, so affiliate value falls at news of the filing of the offering, $r_v(SI) <$

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[15]Note that for the case of $x < x^*$ no third party AS can occur because the level of third party synergies is too low to make an asset sale feasible. In this case there is no benchmark available to assess in court whether the transaction price set in an SP is fair. This situation would add a source of uncertainty to establishing a court judgment on entire fairness for an SP, should the subsidiary's minority shareholders legally challenge the transaction.

0. The lower proceeds to the parent from the sale of its stake via an SI reflect the dual negative information embedded in the stock offering decision. The shares in a secondary offering are priced after the decision is announced, and the per share discount (i.e., negative premium) the parent receives in the stock sale reflects the decline in affiliate value induced by the announcement of the offering: $q_v(SI) = r_v(SI) < 0$. The negative information about the affiliate conveyed by SI implies that $d(L, l)$ is negative and large in absolute value. These negative synergies (costs) are eliminated by the parent's divesting of the asset, implying an increase in parent stub value; i.e., $r_w(SI) > 0$. Thus, the parent's loss from the decline in the value of its stake in the affiliate at news of the secondary offering is at least partly mitigated by a gain to the parent from eliminating the net negative costs associated with its ownership of the affiliate.

Spin-offs and sales of parent interests to unaffiliated third parties occur when the two private signals are discordant. This result has two implications. First, the change in affiliate value for these transactions lies between the increase in value at an affiliate purchase and the decline in affiliate value at a secondary stock offering. Second, in each of these two transactions, the change in affiliate value will reflect the sign of the information of the party having the more relevant signal. We distinguish two alternative scenarios:

RS: The affiliate is aware of the more relevant information:

$$v(H, l) < v_0 < v(L, h) \quad \text{and} \quad d(H, l) < d(L, h)$$

RP: The parent is aware of the more relevant information:

$$v(L, h) < v_0 < v(H, l) \quad \text{and} \quad d(L, h) < d(H, l)$$

It is also apparent that, no matter which scenario applies, the sign of the change in affiliate value at a spin-off is opposite to that of a third party sale.

Finally, incentive compatibility requires that the revenue from the sale of the parent's stake to an unaffiliated third party must be the same as the revenue it receives from a sale of the stake to the affiliate.

These empirical predictions are summarized below:

For $x^* < x < x^{**}$, the ex post incentive compatibility constraints for the parent firm require the following relations:

$$r_v(SI) \leq r_v(SO) \tag{4}$$

$$q(SP) = q(AS) > 0 \tag{5}$$

The ex post incentive compatibility constraints for the affiliate require the following relations:

$$r_v(SP) = q(SP) \qquad (6)$$
$$q(SP) \geq r_v(SO) \qquad (7)$$

Under RS:

$$r_v(SI) \leq r_v(SO) < 0 < r_v(AS) \leq r_v(SP), \qquad (8)$$
$$0 \leq r_w(SP) \leq r_w(AS) \leq r_w(SO) \leq r_w(SI) \qquad (9)$$

Under RP:

$$r_v(SI) \leq r_v(AS) < 0 < r_v(SO) \leq r_v(SP), \qquad (10)$$
$$0 \leq r_w(SP) \leq r_w(SO) \leq r_w(AS) \leq r_w(SI). \qquad (11)$$

5 Empirical Results

5.1 Sample development

Our contracting model generates predictions about the impact on the value of an affiliate when it acquires the parent's controlling stake, a conflict transaction governed by entire fairness, as well as the effects of other forms of divestiture of the control block that are governed by the business judgment rule. For deals in which both parents and affiliates are publicly traded, we can obtain market-based changes in value for both entities (as well as the implied effects on parent stubs). These share price effects provide insight about the usefulness of the model and perspective about the effects of the legal framework of entire fairness that applies to affiliate purchases of such parent-held stakes.

To obtain our sample, we first identify 545 publicly traded, majority-controlled affiliates for the period 1973–2005 by examining proxy statements each year during this period for every exchange-listed firm. For each of these majority-controlled affiliates, we then conducted a search through year-end 2014 for transactions in which the affiliate acquires the parent's majority interest, and we find 26 such events. For reference, using similar criteria for listed subsidiaries and parents over a shorter time span (1970–1993), Slovin and Sushka (1998) find 105 parent-subsidiary mergers (conflict transactions in which parents acquire the interests of minority shareholders of the affiliate who have access to appraisal rights); they report positive excess returns to both subsidiaries and parents. Thus, affiliate purchases of majority stakes held by parents are relatively less common when compared to parent-subsidiary mergers.

Sample affiliate purchase transactions are exemplified by the September 1996 purchase by NutraMax Products (a personal products firm) of a controlling interest in the company held by Mediq Incorporated at a fixed price of nine dollars per share ($36.3 million). Mediq had acquired its controlling stake in NutraMax in 1991. After considering various strategic opportunities to enhance shareholder value (including a possible sale of the entire company), the parent company Mediq adopted a new strategic plan that called for it to focus on its core business (the rental of critical-care and life-support medical equipment) and to dispose of its non-core assets, by far the largest of which was its large stake in NutraMax. After several months of negotiations between the two parties, the purchase of the controlling stake was approved by the board of directors of Mediq and by a special committee of independent directors of NutraMax. Mediq used the proceeds of the sale to redeem all its publicly traded debt.

Among the sample of 545 listed affiliates of parent firms, over the same period we also find 44 spin-offs of majority interests, 32 secondary offerings, and 36 majority block sales to unaffiliated third party buyers (without a tender offer to minority shareholders). The difference in proportions of firms that sustain affiliate repurchases is not significantly different from control block sales to third parties ($p = 0.19$) but it is significantly less than for spinoffs ($p = 0.03$) and for secondary offerings ($p = 0.08$). The four divestiture samples comprise a total of 138 events.

Data reported in Table 1 include firm size (in constant dollars, measured one week prior to announcement) for both entities and the percentage of parent firm value represented by its interest in the affiliate. The data are obtained from Factiva, Compustat, SEC filings, National Stock Summary, and Lexis-Nexis. Divestitures that do not identify the buyer, do not disclose the transaction price, are related to bankruptcy, or result from a regulatory or judicial mandate are excluded. Transaction sizes relative to parent market values are similar across the types of divestiture. At the time of the deal, affiliates have traded as parent-controlled entities on average for 5.4 years. For each type of transaction, affiliates show normal stock price performance during the 6-month period before the announcement.[16] Using Barber and Lyon (1986) methodology we also find normal operating (profitability) performance for each set of parents and affiliates, relative to benchmarks, for the three years prior to the deal (not reported in the table).

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[16]Excess returns are obtained using the market model, where day 0 is the date of the initial announcement, the pre-event estimation period is -240 to -121, and the CRSP value-weighted index is used as the market return. The results are robust with respect to alternative event study methods, including multi-factor models and various estimation periods. We find there is little leakage of information prior to these announcements so 2-day returns provide an effective measure of the market's assessment of the change in value from these events.

Table 1: Descriptive Statistics for Divestitures of Majority Interests in Public Affiliates, 1973–2014.

	Affiliate purchase Mean (Median)	Sale to third party Mean (Median)	Secondary offering Mean (Median)	Spin-off Mean (Median)
Market value ($ 1997, mil.)				
Affiliate	262.6	365.9	974.3	1525.4
	(72.6)	(47.8)	(652.7)	(518.1)
Parent	3231.5	2641.2	8480.3	4931.3
	(913.3)	(505.5)	(3205.7)	(1062.6)
Parent ownership	56.4%	61.0%	55.6%	70.6%
	(52.0%)	(55.5%)	(53.0%)	(80.0%)
Parent stake/parent market value	21.10%	14.2%	23.2%	38.8%
	(12.9%)	(8.8%)	(12.1%)	(36.5%)
Years traded	6.4	6.4	4.5	4.6
	(5.5)	(4.0)	(3.3)	(2.5)
Pre-event return (−120, −2)				
Affiliate	−0.49%	1.40%	−9.14%	−2.24%

Note: This table reports statistics for listed controlled affiliates and parent firms disaggregated into four types of transactions: affiliate purchases of parent interests, sales of parent interests to unaffiliated third parties, secondary seasoned stock offerings, and spin-offs. Market Value is the number of shares outstanding multiplied by stock price one week prior to the divestiture announcement. Parent Ownership is the proportion of total affiliate shares owned by the parent. Parent Stake/Parent Market Value is the market value of the parent's stake in the affiliate divided by parent market value. Years Traded is the period over which the controlled entities are publicly traded. Market model methodology is used to generate cumulative excess returns for the pre-event period. Sources: Factiva, Compustat, SEC filings, National Stock Summary, and Lexis-Nexis.

Table 2: Excess Returns to Affiliates, Parents, and Stubs by Divestiture Method.

	N	Mean return	t-statistic	Median return	% Positive
Affiliate Purchase					
Affiliate	26	7.36%***	(7.89)	5.39%***	0.81
Parent	23	1.85%**	(2.59)	1.40%**	0.61
Stub	22	0.53%	(0.49)	−0.02%	0.50
Sale to Third Party					
Affiliate	36	1.41%**	(2.31)	1.00%	0.56
Parent	36	0.87%**	(2.01)	0.89%*	0.61
Stub	32	0.35%	(0.30)	−0.10%	0.47
Secondary Offering					
Affiliate	32	−6.89%***	(−8.85)	−6.96%***	0.06
Parent	40	1.44%**	(2.37)	0.86%*	0.63
Stub	30	3.98%***	(3.75)	4.33%***	0.80
Spin−off					
Affiliate	44	−4.59%***	(−6.86)	−4.03%***	0.11
Parent	39	3.83%***	(7.61)	2.99%***	0.79
Stub	39	5.22%***	(4.64)	3.60%***	0.82

Note: Two-day (−1, 0) excess returns, in percent, to listed affiliates, parent firms, and stubs (non-subsidiary component of parents) at announcements of divestitures of corporate controlling interests in public affiliates, by type of divestiture transaction, 1973–2014. Day 0 is the date of the initial public report of the transaction. Excess returns are estimated using the market model. Stub returns are obtained by valuing the parent's majority interest at the transaction price for affiliate purchases and third party sales and at the market price for spin-offs and secondary stock offerings. Statistical significance is based on the t-test for the mean return and the Wilcoxon signed ranks test for the median return. The t-statistic for the stub return is a test of the difference between the observed 2-day excess returns to parents and the calculated returns to parents based on the null hypothesis that the value of the parent non-affiliate operations remains unchanged in response to a divestiture announcement.
*$p < 0.10$.
**$p < 0.05$.
***$p < 0.01$.

5.2   Valuation effects

We first consider announcements of affiliate acquisitions of parent majority interests (SP). Consistent with our contract theory ($r_v(SP) > 0$), the 2-day average excess return to affiliates is strongly positive, 7.36% (t-statistic of 7.89), as reported in Table 2. Thus, an affiliate's purchase of the parent-held interest has a strongly positive effect on affiliate value. The magnitude of this gain in affiliate value and the high percentage of positive returns, indicate that this conflicted transaction is wealth increasing for affiliate minority shareholders. This gain in subsidiary shareholder wealth for subsidiary purchases is consistent with the implications of entire fairness and is inconsistent with the expropriation of subsidiary wealth implied by Proposition 1.

The average share price reaction for affiliates at these purchase announcements is close to the mean of the premiums (transaction price relative to undisturbed market price) paid by affiliates to parent firms, 7.16% ($p = 0.96$ for the difference in means). This finding of equality is consistent with equation (6), which indicates that the share price effect on the affiliate should equal the premium the affiliate pays for the parent's stake. The average premium paid by affiliates to parents in these transactions is also not significantly different from the 7.61% average premium that is paid to parents when majority stakes are sold to unaffiliated third party acquirers ($p = 0.94$). This finding is consistent with equality (5), which indicates that parent firms are paid the same premiums for their blocks of shares in affiliate purchases and third party sales. These results suggest that purchases by controlled affiliates of parent-held stakes occur on terms that are consistent with the predictions of our theoretical model and with the fair price standard of Delaware law.

The average excess return to parents at affiliate purchases is positive and statistically significant, 1.85% (*t*-statistic of 2.59), so parent shareholders also sustain an increase in wealth. To gauge the source of the gain in parent shareholder wealth, we obtain the implied return to the parent stub, valuing the parent-held shares in the affiliate at the negotiated transaction price.[17] The return to the parent stub is not statistically significant, 0.53% (*t*-statistic of 0.49)). This finding indicates that the observed increase in parent value at news of an affiliate purchase reflects the premium the parent receives for selling its interest in the affiliate rather than a change in the value of the parent stub.

Overall, this evidence is consistent with the prediction that under entire fairness an affiliate purchase occurs when there is dual positive information about the affiliate, so combined shareholder wealth rises. The median gain in combined wealth for the transactions in our sample is 2.98% (scaling the combined gains in wealth to the parent and affiliate by parent market value). Based on, one, the positive excess returns to both affiliates and parents; two, the equality of the premiums paid to parents by affiliates and by unaffiliated third parties; and three, the fact that the percentage wealth gains to affiliate shareholders are equal to the premiums they pay to parents, we conclude that there is no evidence of parent self-dealing in affiliate purchases of parent-held control stakes. Thus, our results indicate that affiliate purchases reflect effective contracting between the affiliated parties that occurs within the Delaware legal framework of entire fairness that applies to these conflict transactions.

Secondary offerings of parent majority interests (SI) are business judgment transactions conducted by the parent firm that do not involve another corporate entity. Our theory implies that these offerings are undertaken only when

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[17]The *t*-statistic for the significance of the return to the parent stub tests the difference between the 2-day parent excess return and the calculated return to the parent based on the null hypothesis that the parent stub's value remains unchanged in response to the announcement of the transaction.

negative private information is held by both the parent and affiliate, so affiliate value should fall at the announcement ($r_v(SI) < 0$). The negative information about the affiliate conveyed by SI implies that $d(L, l)$ is negative and large in absolute value, reflecting the elimination of substantial agency costs associated with the subsidiary.[18] For our sample of secondary offerings, we find strongly negative announcement returns for the affiliate, -6.89% (t-statistic of -8.85), consistent with the prediction that these offerings are associated with dual negative information. The severity of the decline in shareholder value greatly exceeds the -2% to -3% range of returns reported in studies of offerings of seasoned equity (e.g., Mikkelson and Partch, 1985, 1986; Asquith and Mullins, 1986; Masulis and Korwar, 1986; Dong *et al.*, Forthcoming), reflecting the dual negative signal associated with the parent's decision to sell its control block through a secondary offering.

The substantial decrease in affiliate share price for these offerings is necessarily reflected in the discount the parent sustains in the offering because the shares are sold to the public at the market price that applies after the filing information is disclosed. In our sample, on average the gain in parent firm value at these offering announcements is 1.44% (t-statistic of 2.37). Valuing the parent-held shares at the market price of affiliate shares that applies after the release of the filing announcement, we find a significant increase in implied parent stub value, 3.98% (t-statistic of 3.75). Thus, the gain in overall parent value reflects the elimination of (agency) costs associated with the affiliate, which on average are sufficiently large to fully offset the loss in the value of the block induced by the offering announcement.

Our contracting model implies that spin-offs of parent-held stakes (SO) occur when there is mixed private information (negative information held by the affiliate and positive information held by the parent). For our sample of spin-offs, affiliates sustain a significantly negative average excess return, -4.59% (t-statistic of -6.86). This result is consistent with the second inequality of equation (8), indicating that spin-offs are negative events for affiliates. Consistent with equations (4) and (7), the affiliate return at spin-offs is more favorable than at secondary offerings ($p = 0.09$) but more unfavorable than the return at affiliate purchases ($p < 0.01$). Given that spin-offs of parent-held stakes are negative events for affiliates, the positive return observed for parents at spin-offs, 3.83% (t-statistic of 7.61), is due solely to gains in parent stub values. The magnitude of the positive parent return at spin-offs is similar to that reported in studies of corporate spin-offs (e.g., Schipper and Smith, 1983; Miles and Rosenfeld, 1983; Hite and Owers, 1983). The parent stub return, evaluated by valuing the parent-held affiliate shares at the market price established after news of the spin-off, is a statistically significant 5.22% (t-statistic of 4.64).

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[18]Given the decline in the value of the parent's stake in the affiliate, the model's prediction about the direction of the change in parent value is ambiguous; i.e., there are differing expected signs for the change in the value of the affiliate stake and the parent stub return.

The model implies that arm's length, third party asset sales (AS) occur when there is mixed private information – positive information held by the affiliate and negative information held by the parent – and that the sign of the change in affiliate value for AS should be opposite to the sign observed in SO. Consistent with this prediction, we find that the average excess return for affiliates at asset sales is significantly positive, 1.41% (t-statistic of 2.31). Thus, third party sales convey a positive signal about affiliate value. This affiliate return is significantly greater than at secondary offerings ($p < 0.01$) and spin-offs ($p < 0.01$), but it is significantly smaller than at affiliate purchases ($p < 0.01$).[19] The parent stub return for asset sales, obtained by valuing the parent-held shares at the transaction price negotiated by the parties, is small and not statistically significant, 0.35% (t-statistic of 0.30). Thus, the gains in parent value for these asset sales are due to the premiums paid by third parties for parent stakes.[20] The average excess return to parents for asset sales, 0.87% (t-statistic of 2.01), is similar to the returns to sellers reported in other studies of corporate asset sales (e.g., Jain, 1985; Hite *et al.*, 1987).[21]

Overall, our empirical work suggests that under a regime of entire fairness, affiliate purchases of parent-held interests occur when there is dual positive private information. On average the share price effect on the affiliate is equal to the premium paid to the parent for its controlling stake, and premiums paid to parents approximate the premiums parents receive in third party sales, arm's length deals governed by the business judgment rule. Thus, under entire fairness, in an affiliate purchase the affiliate pays a premium that entails a fair price for the parent's stake, and the affiliate sustains an equivalent increase in its own value that reflects the dual positive private information about the affiliate that is conveyed by the purchase. Our empirical results suggest that there is no evidence of parent self-dealing in affiliate purchases, and the premiums paid by affiliates are consistent with the fair price standard of Delaware law.

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[19]The combination of positive affiliate returns at asset sales and negative affiliate returns at spin-offs is consistent with inequalities (8) rather than with inequalities (9). This finding suggests that in mixed signal cases, the financial market perceives the affiliate as holding the more relevant information.

[20]This result is similar to the pattern for affiliate purchases, and together with the large positive effect on parent stubs for spin-offs, is consistent with inequalities (10) rather than with inequalities (11). This pattern corroborates the evidence reported above for spin-offs and indicates that in mixed signal cases ~~affiliate held~~ information is more relevant than ~~parent held~~ information.

[21]For the 16 third party buyers with CRSP data, there is also a positive average excess return, 1.52% (t-statistic of 2.10), which is consistent with the presence of synergies between affiliates and the assets of third party buyers.

Table 3: Cross-Sectional Regressions for Affiliate Excess Returns.

Equation	(1)	(2)	(3)	(4)	(5)	(6)
AS	-0.065***	-0.065***	-0.066***	-0.067***	-0.064***	-0.065***
	(-3.41)	(-3.42)	(-3.45)	(-3.55)	(-3.39)	(-3.42)
SS	-0.142***	-0.143***	-0.142***	-0.140***	-0.143***	-0.143***
	(-7.47)	(-7.15)	(-7.47)	(-7.37)	(-7.15)	(-7.15)
SO	-0.118***	-0.118***	-0.117***	-0.127***	-0.118***	-0.119***
	(-6.56)	(-6.56)	(-6.50)	(-6.68)	(-6.21)	(-6.26)
Payout		0.001				
		(0.05)				
Focus			0.015			
			(0.95)			
Ownership				0.001		
				(1.20)		
Ln(mvs)					0.000	
					(0.08)	
Origin						-0.003
						(-0.20)
Constant	0.074***	0.073***	0.061***	0.036	0.070	0.075***
	(5.26)	(5.26)	(3.22)	(1.08)	(1.53)	(4.44)
Adj R^2	0.319	0.314	0.319	0.323	0.314	0.315
F	22.43	16.70	17.05	17.31	16.70	16.71

Note: Cross-sectional regressions where the dependent variable is the set of 2-day $(-1, 0)$ excess returns for affiliates at divestiture announcements, 1973–2014. Qualitative independent variables take the value of one for the relevant characteristic and zero otherwise, and are defined as: AS is a third party asset sale; SS is a secondary stock offering; SO is a spin-off; Payout is when the parent uses the proceeds of the transaction to repurchase stock or pay down debt; Focus is when the parent and the affiliate have different two-digit SIC codes; Origin is when public trading of the affiliate originates from a partial acquisition and zero when it originates from an equity carve-out or partial spin-off. Quantitative independent variables are: Ownership is the proportion of affiliate shares owned by the parent firm; Ln(mvs) is the logarithm of the market value of the affiliate. Heteroscedastic-consistent t-values based on White (1980) are in parentheses.

* $p < 0.10$.
** $p < 0.05$.
*** $p < 0.01$.

5.3   *Regression analysis*

We estimate cross-sectional regressions to confirm that alternative divestiture methods have differential impacts on subsidiary value, to test some alternative hypotheses about the share price effects of divestitures, and to take account of various firm characteristics that could potentially influence share price returns. In Table 3, we report regression results where the dependent variable is the set of 2-day excess returns to subsidiaries. Three qualitative independent variables are specified in each regression to test the effect on affiliate returns of the method of divestiture relative to an affiliate purchase, where the relevant qualitative variables equal one for AS, SS, and SO transactions, and zero otherwise. The three coefficients are consistently negative and statistically significant and are in broad accord with the pattern of the event study results. This regression evidence confirms the strongly negative effect of secondary offerings and spin-offs on subsidiary value, relative to affiliate purchases. The relatively high R^2 statistics attest to the importance of the information conveyed by the method of divestiture for explaining affiliate excess returns at divestiture announcements.

Additional independent variables included in the regressions consistently fall short of statistical significance and have little effect on the coefficients for divestiture method. Several alternative hypotheses about divestitures are tested by specifying qualitative variables that take the value of one for the relevant attribute, and zero otherwise. The agency hypothesis of Lang *et al.* (1995) argues that divestitures where there is retention of proceeds are a form of parent external financing, resulting in weaker share price returns. The regression results provide little support for this hypothesis given the insignificance of the variable Payout, which indicates retention of proceeds by the parent. Focus is a variable that tests whether there are greater returns to a divestiture when there is an improvement in parent focus, defined as a divestiture where the parent and subsidiary have different 2-digit SIC codes. The variable obtains a coefficient that is positive but is not statistically significant.[22] Allen *et al.* (1995) hypothesize that the positive returns to parents observed at spin-offs (and by implication other forms of asset divestiture) reflect a regeneration of wealth lost when the unit was originally acquired. To test this hypothesis, we specify the variable Origin which equals one when the listed affiliate originated via a partial acquisition and zero for an equity carve-out or partial spin-off. The variable has a coefficient that is negative and not significant. Thus, the manner in which the unit originated as a publicly traded, controlled entity has no effect on affiliate returns.

We also test whether firm size (indicated by the logarithm of subsidiary market value, Ln(mvs)) or the degree of control, Ownership, as indicated by the proportion of subsidiary stock owned by the parent affects subsidiary

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[22]Similar results are obtained using 3-digit and 4-digit SIC codes.

Table 4: Cross-Sectional Regressions for Parent and Parent Stub Excess Returns.

Equation	Panel A. Parent Regressions, N = 138						Panel B. Stub Regressions, N = 123					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
AS	−0.005	−0.003	−0.005	−0.004	−0.003	−0.006	0.004	0.005	0.004	0.005	0.006	0.002
	(−0.31)	(−0.18)	(−0.28)	(−0.28)	(−0.20)	(−0.39)	(0.23)	(0.28)	(0.25)	(0.30)	(0.35)	(0.14)
SS	−0.004	−0.006	−0.004	−0.004	−0.016	−0.007	0.035**	0.036**	0.034**	0.032*	0.034**	0.026
	(−0.27)	(−0.37)	(−0.28)	(−0.27)	(−0.97)	(−0.50)	(2.04)	(2.01)	(2.02)	(1.81)	(1.99)	(1.56)
SO	0.020	0.020	0.020	0.021	0.018	0.011	0.045***	0.045***	0.045***	0.051***	0.042**	0.035*
	(1.32)	(1.32)	(1.32)	(1.31)	(1.12)	(0.69)	(2.65)	(2.65)	(2.65)	(2.85)	(2.46)	(1.89)
Payout		−0.012						−0.007				
		(−0.71)						(−0.35)				
Focus			−0.004						−0.005			
			(−0.28)						(0.33)			
Ownership				0.000						−0.000		
				(0.20)						(0.90)		
Ln(mvs/mvp)					0.004						0.004	
					(0.88)						(0.92)	
Origin						−0.016						−0.020
						(−1.41)						(−1.50)
Constant	0.018	0.018	0.022	0.023	0.024*	0.029**	0.005	0.005	0.009	0.030	0.012	0.005
	(1.53)	(1.53)	(1.34)	(0.88)	(1.69)	(2.08)	(0.40)	(0.40)	(0.52)	(1.00)	(0.81)	(0.40)
Adj R^2	0.011	0.016	0.004	0.004	0.032	0.019	0.069	0.062	0.062	0.067	0.068	0.065
F	1.52	1.52	1.15	1.13	2.02	1.66	4.01	3.01	3.01	3.21	3.21	3.01

Note: Cross-sectional regressions where the dependent variables are the 2-day excess returns (−1,0) for parents and for parent stubs at divestiture announcements, 1973–2014. Qualitative independent variables take the value of one for the relevant characteristic and zero otherwise, and are defined as: AS is a third party asset sale; SS is a secondary stock offering; SO is a spin-off; Payout is when the parent uses the proceeds of the transaction to repurchase stock or pay down debt; Focus is when the parent and the affiliate have different two-digit SIC codes; Origin equals one when public trading of the affiliate originates from a partial acquisition and zero when it originates from an equity carve-out or partial spin-off. Quantitative independent variables are: Ownership is the proportion of affiliate shares owned by the parent firm; Ln(mvs/mvp) is the logarithm of the ratio of affiliate to parent market value; Heteroscedastic-consistent t-values based on White (1980) are in parentheses.
* $p < 0.10$.
** $p < 0.05$.
*** $p < 0.01$.

returns, but neither variable is statistically significant. We tested a broad spectrum of other quantitative variables that reflect other firm characteristics, including financial and operating performance, but the coefficients are not significant and thus are not reported in the table.

We estimate a similar set of cross-sectional regressions for parent and parent stub returns. In Table 4, the coefficients of the qualitative variables for divestiture method closely match the pattern of the difference in means tests derived from the event studies and indicate the positive effect of spin-offs and secondary offerings on parent stub value despite the negative return to subsidiaries for both types of divestitures.

6   Conclusions

In this paper we develop a contracting framework for corporate divestitures that includes the opportunity for an affiliate to purchase the parent-held control block, a conflict transaction that is subject to entire fairness unlike other types of divestitures that are governed by the business judgment rule. We consider the economics of these transactions, review aspects of relevant corporation law, develop a theoretical model for analyzing the contracting under entire fairness that governs affiliate purchases, and report empirical results for a sample of divestiture transactions. The theoretical model explains under what conditions an affiliate's purchase of a parent-held interest would be the voluntary outcome of a negotiation between minority shareholders and a controlling parent within the framework of entire fairness, where the parent also has the option to divest its holding via another form of divestiture that falls under the business judgment rule. The theory maps configurations of private information on to the various available divestiture transactions and generates a tableau of predicted share price effects for the affected entities. The theory generates the equilibria where an affiliate purchase comports with entire fairness criterion (fair procedure and fair price).

An affiliate's purchase of the parent's interest occurs when both entities have positive private information about the affiliate, implying an increase in affiliate value at the deal announcement. The parent-held share block is purchased at a premium to the affiliate's share price, which represents a fair price that reflects the positive information held by the parties to the transaction and is not an indication of parent self-dealing. We obtain share price reactions to announcements of affiliate purchases and other transactions by which parents can divest majority interests in affiliates that are governed by the business judgment rule. The empirical results are consistent with the model's predictions when the entire fairness standard applies to affiliate purchases.

Appendix

Proof of Proposition 2 and Lemma 1. Note that any direct mechanism is a mapping from the possible information of the parent and the affiliate into a deal. The proof is a direct consequence of the following Lemma that characterizes the structure of the ex post direct mechanism for all possible levels of a third party synergy x. □

Lemma 2. *Let (σ'_P, σ'_A) be the information communicated by the parent and the affiliate to the mechanism and x the level of third party synergies. The unique ex post incentive compatible and ex post individually rational direct mechanism involving divestiture methods in the set $\{SO, SP, AS, SI\}$ is:*

Private information		Third party acquirer synergies		
σ'_P	σ'_A	$x \geq x^{**}$	$x^* < x < x^{**}$	$x \leq x^*$
H	h	AS	SP	SO
H	l	AS	SO	SO
L	h	AS	AS	SP
L	l	AS	SI	SI

Proof. If $x \geq x^{**}$, then there is C, with $\beta(H,h) < C < \beta(L,l) - d(H,h) + x$ Thus, no matter the state s, divesting the asset via an AS for price C, is individually rational to the parent because constraint (3) is satisfied and to third party buyer participation, where the gain from trade is $\Delta B_{AS}(s) = \beta(s) + d(s) + x - C \geq \beta(L,l) + d(L,l) + x - C > 0$. Because the divestiture method and payment do not depend on the information reported by the parent and the affiliate, incentive compatibility constraints are trivially satisfied.

Take $x^* < x < x^{**}$ and suppose that NCs 1–9 are met. From the analysis in the text we know that an ex post mechanism satisfying the following configuration

	$\sigma'_P = H$	$\sigma'_P = L$
$\sigma'_A = h$	SP	AS
$\sigma'_A = l$	SO	SI

also satisfies the parent and the affiliate ex post constraint. What remains to be verified is that in state (L,h) the third party buyer is willing to pay the amount $C_{AS} = C_{SP} = \beta v(H,h)$. But this is true because the third party gains $\Delta B_{AS}(L,h) = \beta v(L,h) + d(L,h) + x - \beta v(H,h) > 0$, where the inequality follows from $x > x^* = \beta v(H,h) - \beta v(L,h) - d(L,h)$.

Finally, let us consider the case $x < x^*$. Then AS is not possible in state (h, L) as the synergies are not sufficiently high. The necessary conditions NCs

1, 2, and 5 still hold, however. This leaves two candidate configurations for the direct mechanism in the absence of a third party acquirer:

	$\sigma_P = H$	$\sigma_P = L$
$\sigma_A = h$	SP	SP
$\sigma_A = l$	SO	SI

Configuration (i)

	$\sigma_P = H$	$\sigma_P = L$
$\sigma_A = h$	SO	SP
$\sigma_A = l$	SO	SI

Configuration (ii)

Consider first Configuration (i). It results that $\beta_{H,h} = \beta_{L,h} = 0$, and hence it must be that $C_{H,h} = C_{L,h}$ because of NC 4, when $\sigma_A = h$, and the parent's revenue must be the same for $\sigma_P = H$ and for $\sigma_P = L$. Let us denote this revenue as C. The parent participation constraint in state (H, h) implies $C \geq v(H, h)$ whereas the affiliate participation constraint in state (L, h) requires $C \leq v(H, l)$; thus, a contradiction. Consider now Configuration (ii). It is straightforward to see that for this configuration, all constraints (1)–(3) are satisfied only for the values of $C_{SP} = \beta v(L, h)$ and $C_{SI} = \beta v(L, l)$.   □

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