DO DIFFERENT STANDARDS OF JUDICIAL REVIEW AFFECT THE GAINS OF MINORITY SHAREHOLDERS IN FREEZE-OUT TRANSACTIONS? A RE-EXAMINATION OF *SILICONIX*

FERNÁN RESTREPO*

ABSTRACT

Freeze-out transactions have been subject to different standards of judicial review in Delaware since 2001, when the chancery court, in In re Siliconix Inc. Shareholders Litigation, *held that, unlike merger freeze-outs, tender offer freeze-outs were not subject to "entire fairness review". This dichotomy, in turn, gave rise to a tension in the literature regarding the potential impact of* Siliconix, *as well as the treatment that freeze-outs should receive. While some defended the regime established by* Siliconix, *others argued for doctrinal convergence through a universal application of entire fairness, and still others proposed alternative variations of convergence based on how the negotiation process is conducted. The Delaware Chancery Court itself, in fact, subsequently made a partial step toward convergence by narrowing the scope of its precedent, as reflected in* In re CNX Gas Corporation Shareholders Litigation. *The empirical evidence on the effect of Siliconix (and, therefore, on the practical relevance of different standards of judicial review), however, is limited. In particular, in "Post-Siliconix freeze-outs: Theory and Evidence," Guhan Subramanian found that minority shareholders obtain lower cumulative abnormal returns (CARs) in tender offer freeze-outs relative to merger freeze-outs, and, based on this finding, Subramanian advocates for doctrinal convergence. That article, however, does not formally examine whether* Siliconix *generated a structural change in relative CARs in both transactional forms and, therefore, whether the differences in outcomes are actually attributable to the disparity in standards of judicial review. The purpose of this work is, therefore, to fill this gap in the literature. To this end, this work uses a difference-in-differences approach, which compares changes over time (before and after* Siliconix) between CARs in tender offers (the treatment group) and CARs in statutory mergers (the control group). As further discussed in the text, the results seem to suggest, in line with Subramanian's intuition, that* Siliconix *actually had at least some negative effect on CARs in tender offers, since the estimator of difference-in-differences is consistently negative and generally significant. Based on the results, this work discusses specific policy implications, particularly in terms of regulatory convergence.*

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INTRODUCTION

  Freeze-outs (that is, transactions in which a controlling shareholder acquires the remaining shares of a corporation for either cash or stock) have been subject to different standards of judicial review in Delaware since 2001, when the Delaware Chancery Court, in *In re Siliconix Inc. Shareholders Litigation*,[1] introduced a distinction based on the form in which the transaction is executed. In *Siliconix*, the court held that, unlike freeze-outs executed as a merger (which have been subject to "entire fairness review" since 1952),[2] freeze-outs executed as a tender offer were exempted from that standard of review. According to the court, tender offers do not warrant entire fairness because, in these transactions, in contrast to a merger, minority shareholders are protected by the decision itself of tendering or not tendering. Moreover, one month after *Siliconix*, in *Glassman v. Unocal Explora-*

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[1] Civ. A. No. 18700, 2001 WL 716787 (Del. Ch. June 19, 2001).
[2] *See* Sterling v. Maryflower Hotel Corp., 93 A.2d 107 (Del. 1952); Gottlieb v. Heyden Chem. Corp., 91 A.2d 57 (Del. 1952).

tion Corporation,[3] the Delaware Supreme Court held that a short-form merger is also excluded from entire fairness review. As a result of these two decisions, a controlling shareholder was allowed to completely avoid entire fairness by acquiring the remaining shares from minority shareholders through a tender offer followed by a short-form merger.

This regulatory dichotomy created by *Siliconix*, in turn, gave rise to a tension in the literature over the treatment that freeze-outs should receive. While some commentators argue for regulatory convergence in the standards of judicial review by subjecting tender offers to entire fairness,[4] others defend the regime established by *Siliconix*,[5] and still others propose an alternative variation of convergence based on how the negotiation process took place. According to this variation, if a freeze-out was both approved by the majority-of-the-minority (MOM) shareholders and recommended by a special committee of independent directors, then the transaction should be exempted from entire fairness review; otherwise, that standard should apply.[6] This approach, in fact, was recommended in dicta by Vice Chancellor Strine in *In re Cox Communications Systems, Inc. Shareholders Litigation*,[7] and some of its elements were subsequently adopted in *In re CNX Gas Corporation Shareholders Litigation*[8] (in the context of tender offers) and *In re MFW Shareholders Litigation*[9] (in the context of mergers).

Despite the arguments against *Siliconix*, even in subsequent chancery court decisions, there is limited empirical evidence on the effect of that decision and, therefore, on the practical importance that convergence or divergence in standards of judicial review has for minority shareholders in a freeze-out. In particular, with a sample of post-*Siliconix* freeze-outs between 2001 and 2005, Guhan Subramaninan found that minority shareholders re-

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[3] Glassman v. Unocal Exploration Corp., 777 A.2d. 242 (Del. Supr. 2001).

[4] *See, e.g.*, Ely R. Levy, *Freeze-out Transactions the* Pure *Way: Reconciling Judicial Asymmetry Between Tender Offers and Negotiated Mergers*, 106 W. VA. L. REV. 345 (2004); Kimble Charles Cannon, *Augmenting the Duties of Directors to Protect Minority Shareholders in the Context of Going-Private Transactions: The Case for Obligating Directors to Express a Valuation Opinion in Unilateral Tender Offers After* Siliconix*,* Aquila*, and* Pure Resources, 2003 COLUM. BUS. L. REV. 191 (2003); Brian M. Resnick, *Recent Delaware Decisions May Prove to be "Entirely Unfair" to Minority Shareholders in Parent Merger with Partially Owned Subsidiary*, 2003 COLUM. BUS. L. REV. 253 (2003).

[5] *See, e.g.*, Adam C. Pritchard, *Tender Offers by Controlling Shareholders: The Specter of Coercion and Fair Price*, 1 BERKELEY BUS. L.J. 83, 101–03 (2004).

[6] *See* Ronald J. Gilson & Jeffrey N. Gordon, *Controlling Controlling Shareholders*, 152 U. PA. L. REV. 785, 818 (2003). For a similar solution, but based on reasons different from those proposed by Gilson and Gordon, see Guhan Subramanian, *Fixing Freezeouts*, 115 YALE L.J. 2 (2005).

[7] 879 A.2d 604 (Del. Ch. 2005).

[8] 4 A.3d 397 (Del. Ch. 2010). As further discussed in Section I.A, however, the applicability of this approach is not clear, since, in *In re* Cox Radio, 2010 WL 1806616 (Del. Ch. 2010), Vice Chancellor Parsons declined to apply the unified approach in the context of a fee determination for plaintiffs' lawyers in a freeze-out tender offer. In addition, in *CNX Gas,* the final decision on the standard of review question was deferred to the Delaware Supreme Court, but since the plaintiffs voluntarily dismissed the appeal, the question remained unanswered.

[9] C.A. No. 6566-CS, 2013 WL 2436341 (Del. Ch. May 29, 2013).

ceive lower cumulative abnormal returns (CARs), on average, when a freeze-out is executed as a tender offer than when it is executed as a statutory merger. Based on this, Subramanian holds that the difference in outcomes might be the result of the dissimilar protections for minority shareholders in tender offers and mergers after *Siliconix*, and, consequently, he argues for doctrinal convergence.[10] That article, however, does not formally examine whether *Siliconix* generated a structural change in relative CARs in these transactional forms and, therefore, whether the differences in outcomes are actually attributable to dissimilar standards of review.[11] The purpose of this work is, therefore, to fill this gap in the literature.

To examine the effect of *Siliconix*, as further discussed in the methodology section, this work uses a difference-in-differences approach in which the treatment group is the set of tender offer freeze-outs of Delaware targets announced and completed between January of 1996 (after the Delaware Supreme Court decision in *Solomon v. Pathe Communications Corp*) and June of 2005 (before the Delaware Chancery Court decision in *In re Cox Communications*), and the control group is the set of merger freeze-outs in the same period.[12] As in Subramanian's article, the outcome variable is the CARs that minority shareholders receive in the transaction, defined as the daily return for the target shares relative to the CRSP value-weighted index.

This work has at least one policy implication. If the results showed that *Siliconix* was indeed a significant factor in the creation of differences in CARs between tender offers and statutory mergers, then the case for regulatory convergence made by Subramanian on empirical grounds would be reinforced. For the same reason, the move toward unification marked by CNX may be interpreted as justified on the welfare of minority shareholders. If, in contrast, the counterfactual were true (namely, that *Siliconix* is not a cause of the gap in relative CARs found by Subramanian), then there would be no clear justification for regulatory convergence specifically on the basis of differences in transactional outcomes. This implies, in turn, that a policy like the one adopted in *CNX* might create friction in the market without practical

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[10] *Cf.* Guhan Subramanian, *Post*-Siliconix *Freezeouts: Theory, Evidence, and Policy*, 36 J. LEGAL STUD. 24 (2007).

[11] *See id.* at 34 n.9. In fact, Subramanian only provides preliminary evidence on the existence of a possible structural change after *Siliconix*. Specifically, he mentions that, although not statistically significant, the premiums that controllers were paying in tender offer freezeouts before *Siliconix* (particularly in the period 1996–2001) were actually higher than the premiums they were paying in mergers. This fact, however, does not necessarily indicate that the difference in standards of judicial review resulting from *Siliconix* also generated a structural change in relative CARs. On one hand, the outcome metric he uses for pre and post *Siliconix* transactions is different and, consequently, not directly comparable. On the other hand, even if both metrics were directly comparable, as mentioned, there is no formal test for a potential structural change in relative CARs after 2001.

[12] As discussed in the methodology section, although there are limitations in the comparison of these two groups (particularly due to self-selection), this approach nonetheless seems to provide a better estimation of the treatment effect than alternative comparisons. *See infra* note 74.

offsetting benefits. As further discussed in Section III, however, the results presented in this work, in line with Subramanian's intuition, are generally consistent with the hypothesis that *Siliconix* had at least some negative effect on tender offer CARs, and, therefore, those results also seem to support the limitations to this decision adopted in *CNX*.

This work is divided into three parts. Section I presents the background (procedural protections applicable to freeze-outs and prior literature), Section II describes the methodology, and Section III presents and discusses the results.

I. BACKGROUND

A. *Procedural Protections in the Context of Freeze-Outs*

Entire fairness review has been a protection for minority shareholders in merger freeze-outs since 1952, when the Delaware Supreme Court, in *Sterling v. Mayflower Hotel Corporation*[13] and *Gottlieb v. Heyden Chemical Corporation*,[14] held that the minority in those transactions are entitled to a judicial reassessment of the price paid by the controller if they consider that price to be *unfairly low.* More specifically, as the court explained in *Weinberger v. UPO*,[15] in an entire fairness action, the court reviews compliance with two conditions: "fair dealing" and "fair price." Fair dealing "embraces questions of when the transaction was timed, how it was initiated, structured, negotiated, and disclosed to the directors, and how the approvals of the directors and the stockholders were obtained. [Fair price] relates to the economic and financial considerations of the proposed [transaction]."[16] Besides specifying these conditions, the court also suggested that target boards should form a special committee of independent directors to negotiate the terms of the deal with the controller and, in this way, increase the likelihood of satisfying the two prongs that make a transaction "entirely fair."

The level of deference accorded to merger freeze-outs that were approved by a special committee of independent directors was subsequently defined in *Kahn v. Lynch Communication Systems, Inc.*,[17] where the Delaware Supreme Court resolved the tension between *In re Trans World Airlines, Inc.*,[18] that held that approval by a special committee of independent directors shifted the standard of review from entire fairness to business judgment, and, on the other hand, *Citron v. E.I. Dupont de Nemours & Co.*[19] and

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[13] 93 A.2d 107, 109 (Del. 1952).
[14] 91 A.2d. 57, 58 (Del. 1952).
[15] 457 A.2d 701, 711 (Del. 1983).
[16] *Id.*
[17] 638 A.2d 1110, 1117 (Del.1994).
[18] Civ. A. No. 9844, 1988 WL 111271, at *5 (Del. Ch. Oct. 21, 1988).
[19] 584 A.2d 490, 501 (Del. Ch. 1990).

Rabkin v. Olin Corp.,[20] that held that approval by an independent committee only shifted the burden on entire fairness review from the defendant to the plaintiff. In *Lynch,* the Delaware Supreme Court adopted the position suggested by *Citron* and *Rabkin*, thus concluding that the inclusion of a special committee in the deal process only had the effect of shifting the burden of proof on entire fairness. Furthermore, since the Delaware Supreme Court had held in *Rosenblatt v. Getty Oil Co.*[21] that merger freeze-outs approved by the MOM were also subject to entire fairness review (although, again, the burden of proof shifts to the plaintiff if the minority shareholders approve the deal), adding a MOM condition to the formation of a special committee would not, in theory, provide any additional benefit to the controlling shareholder from the perspective of the applicable standard of review. The Delaware Chancery Court, however, held several years after *Lynch* that if the deal includes both protections, the standard of review actually shifts from entire fairness to business judgment.[22]

The treatment of freeze-outs executed as statutory mergers, however, was not replicated in the tender offer context. What can be interpreted as the first sign of a dual treatment came with *Solomon v. Pathe Communications Corp.*[23] In this decision, the Delaware Supreme Court held that the tender offer that the controlling shareholder made to the minority shareholders in this case was not subject to entire fairness review, essentially because the offer was not, according to the court, a self-dealing transaction. *Solomon*, however, had a limited scope: since the tender offer was for less than all the minority shares, it was not a freeze-out situation.[24] In addition, as further discussed below, this case did not involve a unilateral tender offer and, in the transaction, the controlling shareholder was not acting predominantly as such, but instead as a secured creditor.[25] Besides these differences, after *Solomon* it was not clear whether a controlling shareholder could avoid entire fairness review in the back-end short-form merger if he reached more than 90% (but less than 100%) of the outstanding capital, which would be necessary to complete the freeze-out.[26]

The effective response to the question of whether or not entire fairness applied to tender offer freeze-outs only came with *Siliconix*, where the Delaware Chancery Court expressly held that these transactions were not subject to that standard of judicial review (provided, however, that there are no disclosure violations and the tender offer is not coercive).[27] To support this differential treatment between tender offer and statutory merger freeze-outs,

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[20] Civ. A. No. 7547, 1990 WL 47648, at *4 (Del. Ch. Apr. 17, 1990).

[21] 493 A.2d. 929, 937 (Del. 1985).

[22] *In re* MFW S'holders Litig., C.A. No. 6566-CS, 2013 WL 2436341 (Del. Ch. May 29, 2013).

[23] 672 A.2d 35, 39–40 (Del. 1996).

[24] *See also* Subramanian, *supra* note 6, at 18.

[25] *In re* CNX Gas Corp. S'holders Litig., 4 A.3d 397 (Del. Ch. 2010).

[26] *See also* Subramanian, *supra* note 6, at 20–21.

[27] Civ. A. No. 18700, 2001 WL 716787 (Del. Ch. June 19, 2001).

Vice Chancellor Noble offered basically two reasons. The first is that minority shareholders are "sufficiently protected" in the tender offer by the tender decision itself. The second is that target boards have a relatively important role in statutory mergers but not in tender offers, particularly because tender offers are directed at the shareholders, not the target company (and, for that reason, they are not a corporate-level transaction).[28] Although *Siliconix* did not answer the question of whether the back-end short-form merger was also excluded from entire fairness review, the Delaware Supreme Court responded to this uncertainty just one month after *Siliconix* in *Glassman v. Unocal Exploration Corporation*.[29] In this decision, the court held that Section 253 of the Delaware General Corporation Law provided a simplified process for accomplishing a merger where the controlling shareholder has more than 90% of the outstanding shares, and that if the fiduciary duties owed to minority shareholders were interpreted as they were in the context of ordinary statutory mergers, the benefits provided by the statute for short-form mergers (in terms of expediting and simplifying the transaction) would be lost.[30] As a result of *Siliconix* and *Glassman*, therefore, a controlling shareholder was allowed to completely acquire the remaining shares in a corporation without being subject to entire fairness review if the transaction is executed as a tender offer followed by a short-form merger.

If entire fairness is actually relevant for the gains that minority shareholders receive in a tender offer freeze-out, then the significant event for testing this relevance is *Siliconix*. Although, as mentioned, *Solomon* might be interpreted *ex post* as a "sign" that tender offers would be treated differently in the future, that decision did not involve a freeze-out situation and, for the same reason, it did not create an exemption from entire fairness for tender offer freeze-outs. Moreover, as mentioned before, *Solomon* did not involve a unilateral tender offer. The transaction was one of the components of a prior agreement between CLBN and Pathe, which was established when these companies negotiated the rights of CLBN as a secured creditor in the acquisition of MGM shares by Pathe. Besides that, CLBN was acting in the deal predominantly as a third-party lender, not as a controlling shareholder: CLBN, although having a controlling position by the time of the tender of-

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[28] In the words of Vice Chancellor Noble:

"[T]he difference in judicial approach can be traced to two simple concepts. The first is that accepting or rejecting a tender is a decision to be made by the individual shareholder, and at least as to the tender itself, he will, if he rejects the tender, still own the stock of the target company following the tender. The second concept is that the acquired company in the merger context enters into a merger agreement, but the target company in the tender context does not confront a comparable corporate decision because the actual target of a tender is not the corporation (or its directors), but, instead, is its shareholders. Indeed, board of the tender target is not asking its shareholders to approve any corporate action by the tender target . . . ."

Id. at *7.
[29] 777 A.2d 242, 244, 247 (Del. 2001).
[30] *Id.*

fer, executed that offer in exercise of its contractual rights as a secured lender, and that particular position is not subject to fiduciary review. The specificity of the facts of *Solomon,* therefore, implies that controlling shareholders are unlikely to have perceived that decision (at least in a systematic way) as a mechanism to avoid entire fairness and that, therefore, any negative effect on the gains of the minority shareholders that results from exempting tender offer freeze-outs from this standard of review should be fundamentally captured by *Siliconix.* In other words, even if *Solomon* might be interpreted as a "sign" of the dual treatment that would afterward follow, that "sign" was nonetheless ambiguous.[31]

The conditions to qualify for the exemption from entire fairness review under *Siliconix* were further elaborated in *In re Pure Resources Litigation.*[32] In *Pure Resources*, the Delaware Chancery Court held that business judgment only applies to offers that are not coercive, and that an offer is noncoercive if it meets three conditions: (i) there is a non-waivable MOM condition; (ii) the controlling shareholder guarantees to consummate a prompt short-form merger at the same price if he obtains 90% or more of the shares; and (iii) the controlling shareholder makes no retributive threats in its negotiations with the special committee. In elaborating these conditions, Vice Chancellor Strine recognized the problematic distinction created by *Siliconix*,[33] but nonetheless held that "the appropriate policy" was to reinforce the protections afforded to the minority in tender offers (through the conditions just mentioned), continue excluding tender offers from entire fairness review if the transaction was approved by the minority under such conditions, and reconcile the dichotomy on the side of mergers. In the words of Vice Chancellor Strine, "the preferable policy choice is to continue to adhere to the more flexible and less constraining *Solomon* approach, while giving some greater recognition to the inherent coercion and structural bias concerns that motivate the *Lynch* line of cases . . . [T]he lack of harmony is

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[31] Vice Chancellor Laster, in fact, explicitly explained in a subsequent decision why the situation giving rise to *Solomon* is distinct from a tender offer freeze-out, including the elements described above. *CNX Gas Corp.,* 4 A.3d at 404–406.

[32] 808 A.2d 421, 445 (Del. Ch. 2002).

[33] As Vice Chancellor Strine puts it:

"I admit being troubled by the imbalance in Delaware law exposed by the *Solomon/Lynch* lines of cases. Under *Solomon,* the policy emphasis is on the right of buyers and sellers of stock to deal with each other freely, with only such judicial intervention as is necessary to ensure fair disclosure and to prevent structural coercion. The advantage of this emphasis is that it provides a relatively non-litigious way to effect going private transactions and relies upon minority stockholders to protect themselves. The cost of this approach is that it arguably exposes minority stockholders to the more subtle form of coercion that *Lynch* addresses and leaves them without adequate redress for unfairly timed and priced offers. The approach also minimizes the potential for the minority to get the best price, by arguably giving them only enough protection to keep them from being structurally coerced into accepting grossly insufficient bids but not necessarily merely inadequate ones."

Pure Res. S'holders Litig., 808 A.2d at 443 .

better addressed in the *Lynch* line, by affording greater liability-immunizing effect to protecting devices such as majority of minority approval conditions and special committee negotiation approval."[34]

As in *Pure Resources*, Vice Chancellor Strine also expressed his disagreement with the dichotomy created by *Siliconix* in *Cox Communications*,[35] but this time went further and proposed a more specific policy based on the unification recommendation of Gilson, Gordon, and Subramanian.[36] Specifically, in dicta*,* Vice Chancellor Strine held that Delaware law would "improve" the protections it offers to minority shareholders by applying the business judgment rule when a freeze-out mirrors both elements of an armslength transaction (approval by disinterested directors and approval by disinterested shareholders) and entire fairness if any of those conditions is not met. In words of the Vice Chancellor:

> "[T]he first element is important because the directors have the capacity to act as effective and active bargaining agents, while disaggregated shareholders do not. But, because bargaining agents are not always effective or faithful, the second element is critical because it gives the minority stockholders the opportunity to reject their agents' work."

With these proposed changes, Vice Chancellor Strine concluded, "there would remain a strong incentive for controllers to afford stockholders the procedural protection *of both* a special committee with real clout and of non-coerced, fully informed approval by the minority stockholders."[37] As mentioned before, approximately eight years after this pronouncement, the Delaware Chancery Court applied this approach in the context of merger freeze-outs in *In re MFW Shareholders Litigation*.[38]

A further step toward closing the gap between tender offers and mergers, which incorporated some of the suggestions made in dicta in *Cox Communications,* was taken in *In re CNX Gas Corporation Shareholders Litigation*.[39] In *CNX Gas*, the chancery court held that business judgment review is applicable to tender offer freeze-outs that are (i) negotiated and recommended by a special committee of independent directors, and (ii) approved by a MOM shareholders. Consequently, under *CNX Gas*, a controlling shareholder cannot avoid entire fairness review, like under *Pure Resources*, by subjecting the freeze-out to a MOM condition: the transaction must also obtain approval by the special committee. The applicability of the approach articulated in that decision, however, is not entirely clear for at least two reasons. First, just a few days before *CNX,* Vice Chancellor Par-

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[34] *Id.* at 444.
[35] *In re* Cox Commc'ns, Inc. S'holders Litig., 879 A.2d 604, 624 (2005).
[36] *See* Gilson & Gordon, *supra* note 6; *see also* Subramanian, *supra* note 6.
[37] *Cox Commc'ns*, 879 A.2d, at 646.
[38] C.A. No. 6566-CS, 2013 WL 2436341 (Del. Ch. May 29, 2013).
[39] Civ. A. 5733-VCL, 2010 WL 2291842 at *10 (Del. Ch. May 25, 2010).

sons, in *In re Cox Radio*,[40] declined to apply the unified approach in the context of a fee determination for plaintiffs' lawyers in a freeze-out tender offer. In addition, in *Cox Radio*, the Delaware Supreme Court affirmed Vice Chancellor Parsons' ruling that rejected the unified approach, but because the settlement would have been approved under either entire fairness or business judgment review, the court held that it did not need to express any view regarding the appropriate standard of review in tender offer freeze-outs.[41] Second, in *CNX*, Vice Chancellor Laster granted the defendant's application to certify the standard of review question for interlocutory appeal.[42] After the Delaware Supreme Court denied the appeal on the grounds that the issues raised should be addressed after the entry of a final judgment,[43] the plaintiffs voluntarily dismissed the appeal, which in turn left the standard of review question without a conclusive answer.

To summarize, the current freeze-out regime is characterized by a disparity in terms of standards of judicial review that, although narrowed by subsequent decisions, dates back to *Siliconix*. Whether or not the regime introduced by *Siliconix* had a negative effect on minority shareholders, however, is a question that has remained unanswered.

B.   Literature Review: Theory and Evidence

The differential treatment given to freeze-outs as a function of their transactional form generated at least two types of reactions: one that defends the dichotomy created by *Siliconix* and another that proposes convergence in the standards of judicial scrutiny. The latter approach can be broken down into two versions: a first version that suggests convergence by imposing entire fairness review to both tender offers and statutory mergers, and a second version that proposes entire fairness only if the deal was not simultaneously approved by the MOM shareholders and a special committee of independent directors. The following paragraphs discuss each of these lines of commentary.

1.   Pro-Siliconix Arguments

The strand of the literature that defends the regime established by *Siliconix* is grounded in three arguments.[44] The first is that, as held in

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[40] 2010 WL 1806616 (Del. Ch. May 6, 2010).

[41] 9 A.3d 475 (Del. 2010).

[42] Specifically, Vice Chancellor Laster held that "only the Supreme Court can determine definitively whether different policies, duties, and standards should govern unilateral two-step freeze-outs . . . . Because the appropriate standard of review for unilateral two-step freeze-out presents a question of first impression for the Delaware Supreme Court and implicates fundamental issues of Delaware public policy, certification is appropriate." *In re* CNX Gas Corp., 2010 WL 2705147 at *11–*12 (Del. Ch. July 5, 2010).

[43] *In re* CNX Gas Corp., 2010 WL 2690402 (Del. Supr. July 8, 2010).

[44] *See also* Subramanian, *supra* note 6, at 24.

Siliconix itself, minority shareholders are sufficiently protected in the tender offer context by the tender decision: they can choose whether or not to sell their shares, and, if they decide not to tender, they still own shares in the company. The second is that, as also held by Vice Chancellor Noble in *Siliconix*, target boards have a relatively important role in statutory mergers but not in tender offers, particularly because tender offers are directed at the shareholders, not the target company, and, consequently, they are not corporate-level transactions. For the same reason, while in a statutory merger the outcomes of the deal can be determined in large part by the controlling shareholder if he influences the board, that influence cannot arise in the tender offer context. Finally, the third argument is that, if minority shareholders know that they can be cashed out for a lower price through a tender offer in the future, they will factor that risk into the amount they pay for a minority stake, and, therefore they will simply pay less *ex ante*. In this sense, not subjecting tender offers to entire fairness does not alter the distribution of gains between controlling and minority shareholders.[45]

Each of these three arguments, however, has been criticized. According to Subramanian, the first argument is inconsistent with the fact that, in his post-*Siliconix* sample of freeze-out transactions (employed in the preliminary version of his work), minority shareholders received lower premiums in tender offers than in statutory mergers, meaning that the tender decision does not substitute entire fairness in protecting the minority.[46] The second argument, Subramanian argues, creates a doctrinal contradiction because target boards have an active role in the context of hostile tender offers but, in contrast, that argument suggests a passive role for the board.[47] Finally, Sub-

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[45] Pritchard, *supra* note 5, at 103 ("minority shareholders generally did not acquire their minority status by accident. They invested in a public offering by a controlling shareholder, in which case the risk of expropriation was incorporated into the price that they paid for their shares.").

[46] Subramanian, *supra* note 6, at 24–25. For the reasons discussed in the introduction and further elaborated below, nonetheless, the fact that premiums are higher in mergers than in tender offers in Subramanian's sample is not necessarily attributable to the mismatch in the standards of judicial review (since that aspect is not formally tested in his work).

[47] *See* Subramanian, *supra* note 6, at 24–25. *See also* Gilson & Gordon, *supra* note 6, at 820–22. The contradiction suggested by this argument, however, does not imply that there is a clear consensus in the literature on hostile takeovers regarding the precise role or scope of powers that boards should have. Proposing different approaches, *see, e.g.*, Lucian A. Bebchuk, *The Case Against Board Veto in Corporate Takeovers*, 69 U. CHI. L. REV. 973 (2002); Lucian A. Bebchuk, *The Case for Facilitating Competing Tender Offers*, HARV. L. REV. 1028, 1054–56 (1982); Lucian A. Bebchuk, *The Case for Facilitating Tender Offers: A Reply and Extension*, 35 STAN. L. REV. 23 (1982); Frank Easterbrook & Daniel Fischel, *The Proper Role of a Target's Management in Responding to a Tender Offer*, 94 HARV. L. REV. 1161 (1981); Ronald Gilson, *A Structural Approach to Corporations: The Case Against Defensive Tactics in Tender Offers*, 33 STAN. L. REV. 819 (1981); Martin Lipton, *Corporate Governance in the Age of Finance Corporatism*, 136 U. PA. L. REV. 69–71 (1987); Martin Lipton, *Takeover Bids in the Target's Boardroom: A Response to Professors Easterbrook and Fischel*, 55 N.Y.U. L. REV. 1231 (1980); Martin Lipton & Steven Rosenblum, *A New System of Corporate Governance: the Quinquennial Election of Directors*, 58 U. CHI. L. REV. 187 (1991); Martin Lipton, *Pills, Polls, and Professors Redux,* 69 U. CHI. L. REV. 1039 (2002); Martin Lipton & Paul

ramanian proposes two responses to the third argument. The first is that such argument overstates the ex ante calculation that minority shareholders make when acquiring a minority stake, particularly because it is implicitly assumed that the minority will know the transactional form that will be used to cash them out (thus facilitating the adjustment of prices).[48] The second response is that the argument assumes that minority shareholders will know the applicable standards of judicial review, while, in fact, this information might be ignored even among practitioners or academics.[49] Moreover, as further discussed below, Subramanian holds that even though these two responses do not dismiss the possibility that different standards of review be priced *ex ante* by minority shareholders, in any case, the regime established by *Siliconix* facilitated inefficient transactions by allowing the controller to exploit asymmetric information against the minority.

2.   Pro-Convergence Arguments

i.   Convergence Through a Uniform Application of Entire Fairness Review

The first version of convergence, which proposes subjecting tender offers to entire fairness, is mainly based on congruity reasons.[50] Specifically, according to this version, in contexts other than freeze-outs, conflict transactions are generally subject to "enhanced scrutiny." Since freeze-outs are conflict transactions, there is no reason for exempting them from such special scrutiny, regardless of the way in which they are executed. Moreover, according to this part of the literature, in *Lynch*, one of the main concerns of the Delaware Supreme Court was the controlling shareholder's ability to influence the special committee of independent directors and the minority shareholders, especially if this influence takes the form of retaliatory actions in the face of rejection of the controller's offer. Therefore, as long as this

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Rowe, *Pills, Polls, and Professors: A Reply to Professor Gilson* (N.Y. Univ., Working Paper CLB-01-006, 2001).

[48] Subramanian, *supra* note 6, at 26–27.

[49] For Subramanian, the fact that two thirds of post-*Siliconix* freeze-outs in his sample were executed as statutory mergers can actually be interpreted as evidence in support of this criticism. Subramanian, *supra* note 6, at 27. He also recognizes, however, that mispricing due to unawareness of *Siliconix* is based solely on a learning effect. *Id.* As a result, minority shareholders that fail to include that information into their acquisition of minority stakes will systematically underperform compared to those that incorporate *Siliconix* into their investment decisions, and, as a result, over time, *Siliconix* will be priced in the initial acquisition of a share. *Id.*

[50] *See, e.g.*, Levy, *supra* note 4, at 345; Cannon, *supra* note 4, at 241–43; Resnick, *supra* note 4, at 278–83. For a review of these arguments, see Subramanian, *supra* note 6, at 23. Congruity, however, is not the only argument proposed by this line of commentators. Some of the defenders of this position, in fact, argue that entire fairness mitigates the effects of weak reputation constraints in the freeze-out context, which result from the fact that, in this context, the purpose of the transaction is usually to take the target private. Levy, *supra* note 4, at 351. On this argument, see John C. Coates IV, *"Fair Value" as an Avoidable Rule of Corporate Law: Minority Discounts in Conflict Transactions*, 147 U. Pa. L. Rev. 1251, 1322 (1999).

concern confronted in *Lynch* also holds in the tender offer context, entire fairness is necessary in that context in order to guarantee the neutrality of the special committee and the free choice of the minority.[51] In fact, as recognized in *Pure Resources* itself, the threat of retaliatory actions can even be more prevalent in a tender offer, since the decision not to tender leaves a minority shareholder in a more thinly traded stock, with less liquidity and subject to a short-form merger at a lower price (or at the same price but at a later time).[52]

As in the first strand of the literature, this proposal of a generalized application of entire fairness has also been criticized. The first criticism is that this proposal does not take into account, or at least underestimates, the costs associated with entire fairness review.[53] Second, doctrinal consistency does not necessarily imply that both tender offers and statutory mergers have to be subject to entire fairness review, particularly because convergence can be achieved not only in this way, but also by applying business judgment review to all freeze-outs that received approval from a special committee of independent directors or from both a special committee and the MOM shareholders.[54] Moreover, although the argument for convergence in the form of entire fairness for all freeze-outs focuses on providing procedural protections to minority shareholders, this version of convergence, as further discussed below, can also deter value-creating transactions.[55]

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[51] Levy, *supra* note 4, at 347–48, 354–57.

[52] In the words of some commentators, tender offers give rise to a prisoner's dilemma, which can make these deals even more coercive than mergers. This dilemma is specifically generated by the options of either tendering in situations where the price is considered inappropriate or, alternatively, staying in the target (with, as mentioned, a more thinly traded stock). In contrast to this situation, in a merger, the shareholders can vote against the transaction and still receive the consideration agreed upon in the deal if it finally succeeds. The dilemma faced in a tender offer, therefore, distorts shareholders' decisions by giving them an incentive to tender into the offer even if they think the price is inappropriate. *See* Lucian A. Bebchuk, *Toward Undistorted Choice and Equal Treatment in Corporate Takeovers*, 98 Harv. L. Rev. 1693, 1695–96 (1985); Lucian A. Bebchuk, *The Case for Facilitating Competing Tender Offers*, Harv. L. Rev. 1028, 1039–40 (1982); *Cf.* Lucian A. Bebchuk, *The Pressure to Tender: An Analysis and a Proposed Remedy*, 12 Del. J. Corp. L. 911, 917–31 (1987); Robert A. Prentice & John H. Langmore, *Hostile Tender Offers and the "Nancy Reagan Defense": May Target Boards "Just Say No"? Should They Be Allowed To?*, 15 Del. J. Corp. L. 377, 440–42 (1990); Louis Lowenstein, *Pruning Deadwood in Hostile Takeovers: A Proposal for Legislation*, 83 Colum. L. Rev. 249, 307–09 (1983); Lucian A. Bebchuk & Oliver Hart, *Takeover Bids Versus Proxy Fights in Contests for Corporate Control* (Nat'l Bureau of Econ. Research, Working Paper No. 8633, 2001); Lucian A. Bebchuk, *A Model of the Outcome of Takeover Bids* (Harvard Law Sch. John Olin Program in Law and Econ., Discussion Paper 11, 1985).

[53] Subramanian, *supra* note 6, at 23; *see also* Levy, *supra* note 4, at 348–349.

[54] Subramanian, *supra* note 6, at 23; *see also* William T. Allen, Jack B. Jacobs & Leo E. Strine, Jr., *Function Over Form: A Reassessment of Standards of Review in Delaware Corporation Law*, 26 Del. J. Corp. L. 859, 890–91 (2001).

[55] Subramanian, *supra* note 6, at 23. In view of these problems, other commentators propose attenuated versions of entire fairness review for tender offers. Specifically, these commentators propose a "limited fairness hearing" that focuses on how the back-end short-form merger was timed and the way in which the consideration was determined. Alternatively, this proposal suggests an amendment to the Delaware appraisal statute requiring the controller to

ii.   *Convergence Through a Qualified Application of Entire Fairness Review*

The second version of the literature arguing for convergence, as mentioned, proposes different standards of review for both tender offers and mergers depending on whether or not the transaction meets certain procedural protections. In particular, Gilson and Gordon propose business judgment review if the offer was non-coercive under the procedural protections identified in *Pure Resources*, the special committee had veto power over the transaction, and the committee approved the offer. If the transaction fails to comply with any of these conditions, it would be subject to entire fairness. To support this approach, Gilson and Gordon argue that a special committee with veto power, along with the *Pure Resources* anti-coercion conditions, afford sufficient protections so as to emulate an arm's length negotiation and render entire fairness review unnecessary. However, if the controlling shareholder overrides the special committee's veto, the minority shareholders lose the protection that a bargaining agent represents. As a consequence, in this case entire fairness review becomes an important tool to reestablish the incentives of an arm's length transaction.[56]

Guhan Subramanian proposes a similar approach, but for different reasons.[57] According to Subramanian, the final formulation of Gilson and Gordon's proposal is appropriate, since it balances the opposed concerns of protecting minority shareholders and facilitating value-creating transactions. In his opinion, however, these proposals do not explain why the effects of any disparity in terms of standards of judicial review are not simply priced ex ante, as suggested by Pritchard. As a response to this problem, Subramanian argues that the real concern with the differential treatment given to tender offer and merger freeze-outs is that the post-*Lynch* line of cases can prevent efficient or value-creating merger freeze-outs because the special committee has excessive power to block the deal, while a regime like *Siliconix* can facilitate inefficient or value-destroying tender-offer freeze-outs by allowing the controlling shareholder to exploit asymmetric information against the minority.[58]

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pay the minority shareholders the appraised value of their shares. For a review of these proposals, see Subramanian, *supra* note 6, at 23.

[56] Gilson & Gordon, *supra* note 6, at 785, 818, 837–38.

[57] For a similar approach, see Steven M. Haas, *Toward a Controlling Shareholder Safe Harbor*, 90 Va. L. Rev. 2245, 2278 (2004).

[58] Subramanian, *supra* note 6, at 30. In addition to preventing "efficient" or "value-creating" mergers, a doctrine like *Lynch* can have a more specific negative effect on the target in the form of a stock price decline or a neutralization of a stock price increase, as illustrated by the evidence on unsuccessful deals in the takeover context. *See, e.g.*, Richard S. Ruback, *Do Target Shareholders Lose in Unsuccessful Control Contests?*, *in* Corporate Takeovers: Causes and Consequences 137 (Alan Auerbach ed., 1988); Paul Asquith, *Merger Bids, Uncertainty, and Stockholder Returns*, 11 J. Fin. Econ. 51, 51–83 (1983); Lucian A. Bebchuk, John C. Coates, IV & Guhan Subramanian, *The Powerful Antitakeover Force of Staggered Boards: Theory, Evidence, and Policy*, 54 Stan. L. Rev. 887, 934-35 (2002); James F. Cotter

Specifically, since the post-*Lynch* line of cases appears to require that the special committee have veto power over the transaction, the special committee might reject some freeze-outs based on personal interests rather than the interests of the minority shareholders, thereby blocking potential "value-creating" transactions. Even if the transaction is not blocked due to the special committee's veto power, it can be deterred ex ante. This occurs not only because of the higher litigation costs involved in a regime that invariably applies entire fairness to freeze-outs, but also because, under such a regime, the controlling shareholder can lose a larger part of any gains resulting from synergies.[59]

On the other side of the spectrum, a regime like *Siliconix*, according to Subramanian, can promote "value-destroying" tender offer freeze-outs, particularly because of the opportunistic behavior and correlative inefficiencies that this type of regime permits.[60] Specifically, in contrast to merger freeze-outs, where the special committee can veto the transaction and the threat of entire fairness review exerts an upward pressure on the price paid to the minority, in tender offer freeze-outs, under *Siliconix* (without the modulations introduced by *CNX Gas),* the special committee does not have meaningful bargaining power because it cannot veto the transaction and its only formal authority is to issue a 14D-9 recommendation within ten days of the offer.[61] In addition, minority shareholders' exclusive remedy is appraisal, a weaker remedy than entire fairness.[62] For these reasons, the only remaining

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& Marc Zenner, *How Managerial Wealth Affects the Tender Offer Process*, 35 J. Fin. Econ. 63, 86 (1994); Peter Dodd, *Merger Proposals, Management Discretion and Stockholder Wealth*, 8 J. Fin. Econ. 105, 105–37 (1980); Frank H. Easterbrook & Gregg A. Jarrell, *Do Targets Gain from Defeating Tender Offers?*, 59 N.Y.U. L. Rev. 277, 282–84 (1984); John A. Pound, *Takeover Defeats Hurt Stockholders: A Reply to the Kidder Peabody Study*, 4 Midland J. Corp. Fin. 33, 33–38 (1986).

[59] As a consequence, assuming that the likelihood of the controller initiating a freeze-out increases monotonically with the controller's profits from the transaction, a reduction of the controller's expected profits from the freeze-out in the form of a reduction of his gains from synergies has a deterring effect on "value-increasing" deals. Subramanian, *supra* note 6, at 43–45. The concern that Subramanian highlights in the *Lynch* line of cases, however, is no longer problematic after *MFW*, since, as mentioned in section I.A, that opinion held that business judgment review applies if a transaction is subject to approval from a special committee of independent directors and a MOM condition.

[60] *Id.*

[61] *Id.* at 30.

[62] Appraisal is less effective than entire fairness for at least two reasons. First, in contrast to class actions for entire fairness, plaintiffs in an appraisal proceeding must bear the costs associated with the proceeding. Second, unlike entire fairness actions (where a claim can be brought on behalf of all subsidiary shareholders regardless of how they voted or whether they accepted payment for their shares), minority shareholders in appraisal proceedings must choose between accepting the consideration offered and pursuing appraisal of their shares. Therefore, while the freeze-out price is exposed to an increase only with respect to the number of shares for which appraisal rights are made effective, in an entire fairness class action the price increase exposure extends to all shares acquired through the freeze-out without the need for further shareholder action. Moreover, if the freeze-out merger consideration is stock in the controller or stock in any publicly traded corporation, the minority shareholders do not have right to appraisal, meaning that, "without a cause of action for breach of fiduciary duty, the minority shareholders in such a transaction may have no remedy at all." Gilson & Gordon,

constraint on the price paid to the minority is the prevailing market price, which gives room to two forms of opportunistic behavior by the controlling shareholder: "freezing out the minority when the market price for the target stock is below its intrinsic value,"[63] and influencing the value of the target, with the purpose of creating a downward pressure on its market price and using that lower baseline for the tender offer.[64] These forms of opportunistic behavior, in turn, give rise to three efficiency losses that can hardly be priced in the minority's initial acquisition: non-reversible value reductions,[65] the facilitation of "value-reducing" freeze-outs,[66] and a reduction in the access to minority capital.[67]

Based on these problems that underlie the *Lynch* and *Siliconix* lines of cases, Subramanian proposes, as mentioned before, a hybrid form of conver-

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supra note 6, at 799. *See also* Subramanian, *supra* note 6, at 30–31; John C. Coffee, Jr., *Transfers of Control and the Quest for Efficiency: Can Delaware Law Encourage Efficient Transactions While Chilling Inefficient Ones?*, 21 DEL. J. CORP. L. 319, 412 (1996); Robert Thomson, *Exit, Liquidity, and Majority Rule: Appraisal's Role in Corporate Law*, 84 GEO. L.J. 1, 48 (1995).

[63] Subramanian, *supra* note 6, at 32.

[64] One way to do this is by influencing market prices without influencing the value of the underlying assets, particularly through selective disclosure of information. Subramanian, *supra* note 6, at 32–33. *See also* Victor Brudney, *Efficient Markets and Fair Values in Parent Subsidiary Mergers*, 4 J. CORP. L. 63, 71 (1978). Other ways are underinvestment in positive net present value (NPV) projects, investment in negative NPV projects, and shirking managerial responsibilities. Each of these three ways, in turn, can have the form of *reversible* or *non-reversible* value reductions. Since non-reversible value reductions have a negative impact on all shareholders in proportion to their pre-freeze-out stake in the target, the incentives of the controller to engage in such value reductions are a function of the relative importance of this negative effect compared to the benefit of a lower tender offer price. Subramanian, *supra* note 6, at 32–34. *See also* Coates, *supra* note 50, at 1316.

[65] Subramanian, *supra* note 6, at 34–35.

[66] As mentioned before, one of the forms of opportunistic behavior that might arise under a regime like *Siliconix* results from the risk that controllers buy the minority shares at less than their intrinsic value. If this happens, the controller makes a profit on a "value-destroying" or "negative synergy" transaction. For instance, if the target has a higher intrinsic value as a public company than as a private one, the gains from the tender offer would be subsidizing the negative effect of going private, even though there is a net social loss from the transaction. Subramanian, *supra* note 6, at 35.

[67] In particular, if, as mentioned, there is a risk that the controller will freeze-out the minority when the market price is lower than the intrinsic value of the target, then minority shareholders will rationally bid down the value of the stock, which, at a theoretical level, can be bid down to zero. Moreover, the greater the influence of market prices in determining the freeze-out price, the more depressed the market price of the minority stock will be. Since the combination of the special committee bargaining process and the risk of entire fairness review detach the freeze-out from the market price, those protections mitigate this problem of reduced access to minority capital. In contrast, insofar as, under *Siliconix*, market prices are the main determinant of the price paid by the controller in tender offer freeze-outs, that regime is more prone to permit the emergence of this problem. Subramanian, *supra* note 6, at 34–37. *See also* Lucian A. Bebchuk & Marcel Kahan, *Adverse Selection and Gains to Controllers in Corporate Freezeouts*, *in* CONCENTRATED CORPORATE OWNERSHIP 247 (Randall K. Morck ed., 2000); Victor Brudney & Marvin A. Chirelstein, *Fair Shares in Corporate Mergers and Takeovers*, 88 HARV. L. REV. 297, 297–346 (1974); Victor Brudney & Marvin A. Chirelstein, *A Restatement of Corporate Freezeouts,* 87 YALE L.J. 1354, 1354–76 (1978); Zohar Goshen & Zvi Wiener, *The Value of the Freezeout Option* (Columbia Law Sch. Ctr. for Law and Econ. Studies, Working Paper No. 260, 2003).

gence similar to the solution proposed by Gilson and Gordon: if a freeze-out emulates the two features of an arms-length transaction (disinterested board approval and disinterested shareholder approval), a court should apply business judgment review, regardless of the transactional form of the freeze-out; in contrast, if the process does not include these two procedural protections, courts should apply entire fairness review.[68]

3.   *Empirical Evidence*

As indicated in Section I, in *CNX Gas*, the Delaware Chancery Court sought to limit the scope of *Siliconix*, since, in *CNX Gas*, the court held that business judgment review should be applicable to tender offer freeze-outs only if they are approved by a special committee of independent directors and subject to a MOM condition. However, even assuming that the theoretical arguments that support this solution are valid, there is limited empirical evidence showing that the divergence in the standards of judicial review created by *Siliconix* had a negative effect on minority shareholders and that, therefore, the safeguards (and correlative judicial review costs) proposed in *CNX Gas* are actually justified by concerns about the welfare of the minority. The existing evidence is essentially that, between 2001 and 2005, minority shareholders in Delaware targets received lower CARs in tender offers than in mergers, which is insufficient to determine the direction of causality.[69]

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[68] Moreover, Subramanian argues that this proposal is consistent with the treatment of arms-length transactions, which, in his opinion, should be the basis for assessing the procedural protections that apply to freeze-outs. Subramanian, *supra* note 6, at 61. In an arms-length transaction, a merger or acquisition requires two stages of approval: approval by the target board and approval by the target shareholders. *Id.* As regards the first stage, although tender offers might be considered an exception because a bidder could make the offer directly to the minority shareholders, in practice, the implementation of a poison pill makes board approval a prerequisite also for tender offers. *Id.* As regards the second stage, Section 251 of the Delaware corporate code requires approval by a majority of the shares outstanding both in mergers and tender offers (in the form of shares tendered). *Id.* Taking these aspects together, there is parity between the two transactional forms in both stages of the approval process. Furthermore, if the deal receives board approval and shareholder approval (and is not subject to enhanced scrutiny due to a "sale of control" being involved), the business judgment rule applies. Revlon, Inc. v. MacAndrews & Forbes Holdings, 506 A.2d 173 (Del. 1986). In contrast, in the freeze-out context, as mentioned, the treatment of tender offers under a regime like *Siliconix* is deficient with respect to the first step of the arms-length standard (board approval) because the special committee lacks adequate bargaining power, while before *MFW* the treatment of statutory mergers was deficient under the *Lynch* line of cases with respect to the second step of an arms-length transaction (minority approval) because a controller would apparently not receive any marginal benefit in terms of judicial scrutiny from including a MOM condition as an additional procedural safeguard to the formation of a special committee. Since, according to Subramanian, the hybrid convergence approach described above strengthens the bargaining power of the special committee in tender offers and, simultaneously, promotes the incorporation of a MOM condition in mergers, he concludes that such approach, as mentioned, is consistent with the treatment of arms-length transactions. Subramanian, *supra* note 6, at 61.

[69] A related paper by Bates, Lemmon and Linck also studies CARs in freeze-out transactions, particularly in the period 1988–2003. *See* Thomas W. Bates, Michael L. Lemmon & James S. Linck, *Shareholder Welfare and Bid Negotiation in Freeze-out Deals: Are Minority*

In particular, with a sample of freeze-outs between 2001 and 2005, Subramanian found that when a freeze-out is structured as a tender offer, CARs are between 20 and 30 percentage points lower than CARs in mergers (depending on the time window).[70] Consistent with this result, in the multivariate analysis, after controlling for target, controller and deal characteristics, the transactional form variable (a dummy set to one if the freeze-out is a tender offer and zero otherwise) is negative and statistically significant at 95% for both short-run and long-run abnormal returns.[71] Based on these results, Subramanian suggests that the difference in outcomes might be a by-product of the dissimilar protections for minority shareholders in tender offers and mergers after *Siliconix*, and consequently, he argues for doctrinal convergence.[72]

Nevertheless, as indicated before, the results presented by Subramanian are not necessarily a consequence of the disparity of standards of review created by *Siliconix*, since his study does not formally examine whether this decision had a statistically and economically significant effect on relative CARs. The following sections, therefore, address this aspect. As further discussed in Section III, the doctrinal divergence generated by *Siliconix*, as Subramanian suggests, actually appears to have had some negative effect on CARs in tender offer freeze-outs. In this sense, the approach articulated in *CNX Gas* seems to be justified on empirical grounds.

II.   Methodology

To examine the effect of *Siliconix*, this work uses a difference-in-differences approach, in which the treatment group is the set of freeze-outs exe-

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Shareholders Left in the Cold?, 81 J. Fin. Econ. 681, 681–708 (2006). However, as also discussed in Subramanian's work, that paper includes in the regressions Delaware and non-Delaware targets, and does not perform a separate analysis for Delaware targets (even though *Siliconix* might not apply outside Delaware). *Id.* In addition, the paper classifies tender offers that were executed as part of a merger agreement as tender offers, even though the Delaware Chancery Court held in *Hartley v. Peapod, Inc.*, that those transactions would be subject to entire fairness review. No. Civ.A. 19025-NC, 2002 WL 31957458, at *1 (Del. Ch. Feb. 27, 2002). Finally, the post-*Siliconix* tranche of the dataset is based on a shorter period. *See* Subramanian, *supra* note 10, at 6. Besides Bates, Lemmon and Linck's work, other studies also have examined changes in target shareholder wealth around acquisition offers by controlling shareholders, but those works are limited to pre-*Siliconix* deals and, in addition, they do not analyze differences in relative CARs in tender offer and merger freeze-outs (possibly due to the relatively infrequent use of tender offer freeze-outs before the 1990s). *See, e.g.*, Peter Dodd & Richard Ruback, *Tender Offers and Stockholder Returns: An Empirical Analysis,* 5 J. Fin. Econ. 351, 351–73 (1977); Harry DeAngelo, Linda DeAngelo & Edward M. Rice, *Going Private: Minority Freeze-outs and Stockholder Wealth*, 27 J. L. & Econ. 367, 367–401 (1984); Clifford G. Holderness & Dennis P. Sheehan, *The Role of Majority Shareholders in Publicly Held Corporations: An Exploratory Analysis*, 20 J. Fin. Econ. 317, 317–46 (1988).

[70] Subramanian, *supra* note 10, at 14–18.
[71] *Id.*
[72] *Id.* at 24.

cuted as a tender offer between January of 1996 and June of 2005,[73] and the control group is the set of transactions executed as a merger in the same period.[74] The dependent variable is the CARs that the minority shareholders receive in a freeze-out, that is, the daily return for the target shares relative to the CRSP value-weighted index. To calculate the CARs, this work considers two *short-run* windows (-30 to +10 trading days and -30 to +20 trading days relative to the announcement of the transaction) and two *long-run* windows (-30 to +30 and -30 to +60 trading days).[75] Besides other controls for

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[73] As indicated in the introduction, this time frame has this extension in order to include only deals after Solomon v. Pathe Communications Corp, 672 A.2d 35 (Del. 1996), which, as mentioned in section I.A, has been interpreted by some commentators as a signal that tender offers would not be subject to entire fairness review. In this sense, including transactions before this decision might bias the results. On the other side of the time frame, this work includes only transactions announced before June of 2005 in order to avoid potential confounding effects resulting from *In re* Cox Commc'ns Sys., Inc. S'holders Litig., C.A. No. 613-N, 2005 WL 2001310 (Del. Ch. June 6, 2005). As mentioned in section I.A, in *Cox*, the Delaware Chancery Court suggested, in *dicta,* that the exemption from entire fairness review given to tender offer freeze-outs in *Siliconix* implied a doctrinal inconsistency that should be reevaluated, and, furthermore, the court proposed a specific policy to address that inconsistency. In this sense, this decision can be interpreted as a signal to the market that the applicable standards would be reexamined in the event of a litigated freeze-out, and this threat, in turn, might again bias the results.

[74] One limitation in the comparison of these groups is self-selection. Controlling shareholders can decide what transactional form to use in a freeze-out, which implies that there might be changes in the characteristics of the treatment and the control group as a result of *Siliconix* that affect average CARs in these groups. One possible solution to this aspect could be to use freeze-outs involving non-Delaware targets as an alternative control group. The problem with this approach, however, is that the composition of the group of non-Delaware states in which freeze-outs took place during the time frame covered in this work is different before and after *Siliconix*. Non-Delaware states, therefore, do not provide a stable benchmark to make the comparison. Moreover, it is possible that *Siliconix* created uncertainty on how courts outside Delaware would subsequently treat freeze-outs, which in turn can affect the behavior of controlling shareholders of non-Delaware targets and, as a result, introduce bias in the estimations. Another possible solution would be to use an instrumental variable to address the endogeneity of the treatment choice, but there is no clear instrument to implement this adjustment, particularly because it is unclear what variable would significantly predict the choice of transactional form, be unambiguously exogenous, and, at the same time, satisfy the exclusion restriction. Alternatively, the observations before and after *Siliconix* could be matched on the basis of observable characteristics, and then the difference-in-differences estimations would be run with this pre-processed database. Even assuming that there is a natural pairing that would actually attenuate the effect of self-selection, however, this approach is not feasible in this case due to the size of the sample. Still another alternative would be to treat self-selection as an omitted variable and then employ a Heckman two-stage approach to adjust the regressions. In this case again, however, it is necessary to have an exogenous variable or set of variables that significantly predict the transactional form and that at the same time satisfy the exclusion restriction, which prevents the use of this approach here. In light of these considerations, merger freeze-outs seem to provide the best control group available to estimate the treatment effect of *Siliconix*, even though the risk of self-selection cannot be conclusively ruled out here.

[75] In Subramanian's work, long-run CARs were defined as CARs over the time window -30 to +250 days relative to the announcement of the transaction, and it was assumed that the returns for the stock of the target were reinvested in the CRSP index when they were not available for the entire window. Subramanian, *supra* note 10, at 10. Because in most completed deals the target company ceases to trade before day +250 (and, therefore, there was no information for this window in nearly all the observations that constitute the database of this work), the longest time window considered here is based on a shorter period (-30 to +60).

characteristics of the target, the controller, and the deal, the independent variables include a time variable ("postSiliconix") set to one if the transaction was announced after *Siliconix* and zero otherwise; a transactional form variable ("tender offer") set to one if the freeze-out was executed as a tender offer and zero if it was executed as a statutory merger; and an interaction between these two variables ("postSiliconix×tender"), which yields the estimator of difference-in-differences. If CARs in tender offers actually declined relative to mergers after *Siliconix,* this interaction term should be negative and statistically significant.[76]

The list of transactions was obtained from the Thomson Mergers and Acquisitions database. Transactions in which the acquirer held 90% or more of the target's voting shares before the transaction are excluded because, under Section 253 of the Delaware General Corporation Law, such transactions can be executed as short-form mergers that do not require a shareholder vote. The data relating to the negotiation process, especially whether a special committee of independent directors was formed and whether a MOM condition was imposed, were taken from SEC filings by the controlling shareholder and the target (particularly 8-K, 14D-9, 13E-3, 13D, SC-TO, and 14A filings). The financial information about the targets that was not available in Thomson was obtained from Compustat. Finally, to calculate the CARs, stock market prices were taken from the Center for Research in Securities Prices (CRSP).[77]

Similarly to Subramanian's work,[78] tender offers that were executed as part of a merger agreement were classified as mergers because the Delaware Chancery Court has held that those transactions are subject to entire fairness

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Like in Subramanian's work, when there was no return information available for the entire window, it was assumed that the returns for the stock of the target were reinvested in the CRSP index.

[76] The other controls in the regressions include a dichotomous variable set to one if the target formed a special committee of independent directors to negotiate the deal and zero otherwise; the percentage of minority shares required to approve the transaction; the pre-deal stake of the controller; the value of the transaction; the type of consideration offered (cash only or cash and stock); the size of the target (logarithm of total assets); a proxy for the pre-deal efficiency of the target (return on assets, and, in alternative specifications, return on equity); a dichotomous variable that classifies the controller as either a financial or a non-financial acquirer (depending on whether the controller is a financial firm and, in addition, is not in the same economic sector as the target); and a dichotomous variable that classifies the controller as public or non-public (if the controller or its immediate or ultimate parent is a public company).

[77] Although the Thomson database uses a 50% cutoff to determine whether or not a transaction qualifies as an acquisition of remaining interest, Subramanian supplements his database with transactions in which the acquirer held 35% or more of the outstanding shares because the Delaware Chancery Court has held that a shareholder with as little as a 35% holding can be a controlling shareholder. *See In re* Cysive Inc. S'holders Litig., 836 A.2d 531 (Del. Ch. 2003). Like the Thomson database, however, this work uses the 50% cutoff, in which case control is generally undisputable.

[78] Subramanian, *supra* note 10, at 9–10.

review.[79] The freeze-out of Semele Group, which was executed as a reverse stock split, was categorized as a merger because the Delaware Chancery Court, outside the context of freeze-outs, has subjected these transactions to fairness review.[80] Finally, the Lawrence Weissberg Trust's freeze-out of the minority shareholders in Dover Investments, which began as a merger but was ultimately executed as a tender offer, was classified according to the transactional form in which the deal was ultimately executed, but the results are similar if the transaction is not included in the regressions or if it is classified according to the controlling shareholder's initial expression of interest.

III.   Results

A.   Descriptive Statistics

Table 1 presents summary statistics. As shown in the table, while most freeze-outs in the period analyzed here (both before and after *Siliconix*) were executed as mergers, the participation of tender offers increased after *Siliconix.* Before *Siliconix,* 20 out of 100 freeze-outs were executed as tender offers, while after *Siliconix,* 21 out of 60 deals (35%) adopted this transactional form (and this difference was statistically significant at 95%). Moreover, in unreported logit regressions in which the transactional form is the dependent variable and the independent variables include the "post-*Siliconix*" variable and other controls for the target, the controller, and the deal, "post-*Siliconix*" is positive and significant at 95%.[81] As suggested by Subramanian in light of similar univariate results, a possible interpretation for this change is that controlling shareholders, in fact, reacted to *Siliconix*, in the sense of perceiving tender offers as a mechanism to avoid entire fairness.[82]

In both tender offers and mergers, before and after *Siliconix*, the targets formed a special committee of independent directors in most of the cases. Before *Siliconix*, there was a special committee in 85% of the transactions

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[79] *See* Hartley v. Peapod, Inc., No. Civ. A. 19025-NC, 2002 WL 31957458, at *1 (Del. Ch. Feb. 27, 2002). *See also In re* Emerging Commc'ns, Inc. S'holders Litig., Civ. A. No. 16415, 2004 WL 1305745 (Del. Ch. May 3, 2004).

[80] *See* Applebaum v. Avaya, Inc., 805 A.2d 209 (Del. Ch. 2002).

[81] More specifically, the additional controls in the logistic regressions are the percentage of shares held by the controller at announcement, the size of the target (logarithm of total assets), the same proxy for the target's pre-deal efficiency used in the baseline regressions (return on assets, and, alternatively, return on equity), and the dichotomous variables that classify the controller as a public or non-public acquirer, and as a financial or non-financial acquirer. The regressions were run with and without the value of the transaction because that variable might be endogenous to the transactional form. In addition, the regressions were also run with the percentage of shares sought in the deal instead of the percentage of shares held at announcement, and as a probit instead of the logit specification. In all these cases, the results for the post-*Siliconix* variable were similar.

[82] *See* Subramanian, *supra* note 10, at 10.

executed as tender offers and in 86.07% of the transactions executed as mergers. On average, there was a special committee in 85.85% of all the pre-*Siliconix* transactions. After *Siliconix*, the special committee formation rates were 94.47% for tender offers, 84.61% for mergers, and 86.66% for all the transactions. The protection of MOM conditions was less frequent, particularly in mergers (32.5% and 38.46% of these deals in the pre- and post-*Siliconix* periods, respectively, included a MOM condition). In the case of tender offers, the incidence of this protection was higher: while 90% of the pre-*Siliconix* deals included a MOM clause or the condition that the controlling shareholder achieve 90% of the outstanding shares in order to close the transaction, the percentage of deals incorporating any of these two conditions was 85.71% after *Siliconix*. As Subramanian also suggests, one possible explanation for the relatively low frequency of a MOM provision in mergers is the little marginal benefit that this condition would bring about for the controller in terms of judicial intervention[83] before *MFW*. As mentioned in Section I, in *Lynch*, the Delaware Supreme Court held that approval of a merger freeze-out by a special committee of independent directors only shifted the burden of proof on entire fairness from the defendant to the plaintiff, while in *Rosenblatt*, the court applied a similar burden-shifting policy to transactions that include a MOM condition. Taking these decisions together, therefore, apparently there was no additional benefit in terms of standards of judicial review from imposing both conditions on a merger.

With regard to CARs, the descriptive statistics show a preliminary indication that *Siliconix*, in fact, appears to have been a relevant factor in creating a gap between mergers and tender offers. In tender offers before *Siliconix*, the average CARs for the -30 to +10, -30 to +20, -30 to +30, and -30 to +60 time windows were, respectively, 30.95%, 34.23%, 36.31%, and 35.60%. After *Siliconix*, the average CARs were lower for all the time windows: 17.43%, 19.44%, 17.34%, and 19.62%, respectively. In contrast, the average CARs in mergers increased instead of decreasing. While, before *Siliconix*, the average CARs were 23.31%, 22.17%, 22.53%, and 25.64% for the same time windows, after *Siliconix*, the CARs for these windows were 42.48%, 44.60%, 44.24%, and 45.51%.

Moreover, comparing both transactional forms, panels C and D of table 2 also show that, before *Siliconix*, the average CARs in tender offers were actually higher than the average CARs in mergers in all the specifications, although this difference was only statistically significant at 95% for the time window -30 to +30. After *Siliconix*, the order not only inverted (with CARs in mergers being higher now than in tender offers) but also became statistically significant at 95% for all the definitions of the CARs.

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[83] Subramanian, *supra* note 10, at 12.

TABLE 1

Summary Statistics: Pre- and Post-*Siliconix* Freeze-Outs

Panel A: Pre-*Siliconix* Freeze-Outs by Transactional Form

Variable	Tender Offers	Mergers	All
Transaction Characteristics			
Transaction value	932.971	433.8319	535.697
	(2502.419)	(1615.282)	(1827.198)
Percentage of shares acquired in the transaction	26.9735	32.56163	31.444
(%)	(10.87137)	(11.61375)	(11.63443)
Stock consideration (%)	15	32.5	29
Special committee formation (%)	85	86.076	85.8586
Non-waivable majority-of-the-minority or 90% tender condition (%)	90	32.5	44
Transaction Outcomes: CARs (%)			
CARs [-30, +10]	30.95756	23.312	24.91223
	(28.41462)	(25.45793)	(26.11755)
CARs [-30, +20]	34.23544	22.17814	24.70176
	(28.70795)	(28.26814)	(28.61889)
CARs [-30, +30]	36.31153	22.53912	25.42172
	(30.4426)	(28.68201)	(29.42037)
CARs [-30, +60]	35.60043	25.64142	27.72586
	(31.23934)	(34.27531)	(33.73133)
Target Characteristics			
Size of the target (logarithm of total assets)	15551.43	1262.944	4120.641
	(39371.15)	(3623.455)	(18465.22)
Pre-deal efficiency (return on assets)	-15.8075	-10.3694	-11.457
	(64.34718)	(40.00921)	(45.57179)
Controller Characteristics			
Public status (%)	85	70	73
Financial acquirer (%)	5	6.25	6
Percentage of shares held prior to the transaction	72.023	67.4157	68.3372
(%)	(11.43579)	(11.5923)	(11.6517)
Number of transactions	20	80	100

PANEL B: POST-*SILICONIX* FREEZE-OUTS BY TRANSACTIONAL FORM

Variable	Tender Offers	Mergers	All
Transaction Characteristics			
Transaction value (USD millions)	606.7645	417.4577	484.8381
	(1528.923)	(1466.175)	(1478.434)
Percentage of shares acquired in the transaction	28.0879	35.70428	33.0385
	(10.94588)	(11.6592)	(11.8990)
Stock consideration (%)	38.0952	30.7692	33.333
Special committee formation (%)	90.4762	84.6154	86.6667
Non-waivable majority-of-the-minority or 90% tender condition	85.7143	38.4615	55
Transaction Outcomes: CARs (%)			
CARs [-30, +10]	17.43526	42.48656	31.99997
	(32.51541)	(43.19752)	(40.62766)
CARs [-30, +20]	19.44205	44.60143	34.0696
	(33.64932)	(44.13022)	(41.57967)
CARs [-30, +30]	17.34938	44.24288	32.98514
	(35.65668)	(44.51431)	(42.74491)
CARs [-30, +60]	19.62332	45.51986	34.67945
	(35.90162)	(46.70766)	(43.99364)
Target Characteristics			
Size of the target (logarithm of total assets)	3299.432	1089.436	1862.935
	(7289.963)	(4150.935)	(5499.289)
Pre-deal efficiency (return on assets)	-9.10357	-26.0967	-20.1491
	(36.6371)	(118.6987)	(97.96091)
Controller Characteristics			
Public status (%)	71.4286	51.2821	58.3333
Financial acquirer (%)	9.5238	7.6923	8.3333
Percentage of shares held prior to the transaction	71.63105	64.25631	66.83747
	(10.8384)	(11.69834)	(11.85516)
Number of transactions	21	39	60

Note. Panels A and B of Table 1 report summary statistics for tender offer and merger freeze-outs before and after *Siliconix*, respectively. The pre-*Siliconix* tranche of the database is the period from January of 1996 and June of 2001. The post-*Siliconix* tranche is the period from June of 2001 to June of 2005. Transaction values and the size of the targets are in millions of dollars. The size of the target is the logarithm of the target's assets twelve months before the transaction. The proxy for the pre-deal efficiency of the target is the return on assets of the company twelve months before the transaction, but the results of the regression analysis is similar with return on equity. CARs' statistics are calculated for all the targets for which CRSP daily stock returns were available. Standard deviations in parentheses.

TABLE 2

UNIVARIATE ANALYSIS: T-TESTS OF MEAN DIFFERENCES FOR CARs
ACROSS TRANSACTIONAL FORMS

PANEL A: DIFFERENCE IN MEANS BETWEEN PRE- AND POST-*SILICONIX*
CARs IN TENDER OFFER FREEZE-OUTS

CARs Time Window	Mean After *Siliconix*	Mean Before *Siliconix*	Means Difference (Post-Pre *Siliconix*)	*P*-Value
CARs [-30, +10]	17.43526	30.95756	-13.5223 (10.1779)	0.0964
CARs [-30, +20]	19.44205	34.23544	-14.7934 (10.4254)	0.0825
CARs [-30, +30]	17.34938	36.31153	-18.96214 (11.0507)	0.0476
CARs [-30, +60]	19.62332	35.60043	-15.9771 (11.2171)	0.0817

PANEL B: DIFFERENCE IN MEANS BETWEEN PRE- AND POST-*SILICONIX*
CARs IN MERGER FREEZE-OUTS

CARs Time Window	Mean After *Siliconix*	Mean Before *Siliconix*	Means Difference (Post-Pre *Siliconix*)	*P*-Value
CARs [-30, +10]	42.48656	23.312	19.1745 (7.28198)	0.005
CARs [-30, +20]	44.60143	22.17814	22.4232 (7.76425)	0.0024
CARs [-30, +30]	44.24288	22.53912	21.7037 (7.85647)	0.0035
CARs [-30, +60]	45.51986	25.64142	19.8784 (8.87662)	0.0138

PANEL C: DIFFERENCE IN CARs' MEANS BETWEEN TENDER OFFER AND
MERGER FREEZE-OUTS BEFORE *SILICONIX*

CARs Time Window	Tender Offers (Mean)	Mergers (Mean)	Means Difference (Tender Offer – Merger)	*P*-Value
CARs [-30, +10]	30.95756	23.312	7.64556 (6.91388)	0.136
CARs [-30, +20]	34.23544	22.17814	12.0573 (7.5167)	0.0562
CARs [-30, +30]	36.31153	22.53912	13.7724 (7.69943)	0.0386
CARs [-30, +60]	35.60043	25.64142	9.9590 (8.9283)	0.1339

PANEL D: DIFFERENCE IN CARs' MEANS BETWEEN TENDER OFFER AND
MERGER FREEZE-OUTS AFTER *SILICONIX*

CARs Time Window	Tender Offers (Mean)	Mergers (Mean)	Means Difference (Tender Offer – Merger)	*P*-Value
CARs [-30, +10]	17.43526	42.48656	-25.0513 (12.0940)	0.0223
CARs [-30, +20]	19.44205	44.60143	-25.1593 (12.4013)	0.0245
CARs [-30, +30]	17.34938	44.24288	-26.8935 (12.6968)	0.0201
CARs [-30, +60]	19.62332	45.51986	-25.8965 (13.1566)	0.0279

Note. Panels A to D of Table 2 report t-tests of mean differences for CARs in merger and tender offer freeze-outs before and after *Siliconix*. Panels A and B compare differences between pre- and post-*Siliconix* means for each type of transaction. Panel C reports differences in means between both transactional forms before *Siliconix*, and panel D repeats that analysis for the post-*Siliconix* fragment of the data. Standard errors of the differences are listed in parentheses.

B.   *Multivariate Analysis*

Table 3 presents the results of multivariate analyses that include controls for characteristics of the transaction, the target, and the controller. As shown in Table 3, the results are consistent with the idea that relative CARs in tender offers decreased after *Siliconix*. In all the specifications, the estimator of difference-in-differences ("postSiliconix×tender") is negative, and, in addition, significant at least at 95%.

In terms of economic significance, the difference-in-differences coefficients indicate that *relative* CARs in tender offers fell after *Siliconix* in magnitudes of 29.45, 33.32, 30.01, and 32.88 percentage points, respectively, for the -30 to +10, -30 to +20, -30 to +30, and -30 to +60 time windows. In other words, the post-*Siliconix* difference between the average CARs in tender offers and the average CARs in mergers, after subtracting the pre-*Siliconix* difference between these transactional forms, is approximately equivalent to these magnitudes.

One particular aspect that the univariate tests suggest is that the negative sign of the difference-in-difference estimator in the multivariate analysis was in large part driven by the increase in the average CARs in merger freeze-outs. In fact, although the average CAR in tender offers did decrease after *Siliconix*, this decrease was only significant at 90%, while the post-2001 increase in the average CARs in mergers was significant at 99% for all the time windows except one (in which case the increase was significant at 95%). There are several factors that might explain this increase in merger CARs. For example, it is possible that the costs that the Sarbanes-Oxley Act

generated for public companies in 2002[84] motivated controlling shareholders
to offer better conditions in a freeze-out because, after acquiring the minor-
ity shares and delisting the company, the cost savings became larger. Simi-
larly, it is possible that the stock market decline of 2000 reduced the benefits
associated with being public in terms of liquidity and that, for the same
reason, it also incentivized controlling shareholders to offer better conditions
in a freeze-out.[85] Even if the particular factors that led to an increase in the
average CAR in mergers are different from these, there is no clear reason to
think that tender offer CARs should not have followed a similar trend in the
absence of *Siliconix*, since both transactional forms lead to essentially the
same economic outcome (the acquisition of the remaining interests in the
target), and, therefore, the drivers that led controlling shareholders to offer
different conditions in mergers during the 2001–2005 tranche of the sample
should also have applied to tender offers.

 Turning to procedural protections, Table 3 shows that the variable that
captures the presence of a special committee of independent directors, al-
though positive and directionally consistent, was not significant. The varia-
ble that captures the percentage of minority shares needed to approve the
transaction, on the other hand, was neither significant nor directionally con-
sistent.[86] In the specific case of the special committee variable, although one
possible interpretation is that the presence *per se* of a special committee does
not, in fact, contribute to higher CARs, it is also possible that the lack of
statistical significance of the variable is due to the fact that most of the trans-
actions in the dataset included this protection in the negotiation process and
that, therefore, with more observations without a committee to make the
comparison, the results would become significant.

 As regards the consideration structure, similarly to some of the specifi-
cations in Subramanian's work,[87] stock-for-stock deals tended to be associ-
ated with lower CARs relative to all-cash freeze-outs, although this
difference was only significant (and only at 90%) in some of the sensitivity
analyses. As Subramanian also suggests, one possible explanation for this
result might be that controllers do not pay an "end-game" premium for mi-
nority shares in stock-for-stock transactions because minority shareholders
maintain an ongoing interest in the target's cash flows.[88] Alternatively, this
result might be driven by the fact that, under Section 262(b)(1) of the Dela-
ware Corporate Code, minority shareholders are not entitled to appraisal

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[84] For a discussion of these costs, see notes 92–93, *infra*.

[85] Also suggesting a relation between the stock market decline of 2000 and freeze-out
activity (in terms of volume of deals), see Subramanian, *supra* note 6, at 6.

[86] Similarly to Subramanian's work, in unreported regressions, the percentage of minority
shares that was required to approve the transaction was replaced with the required percentage
of shares outstanding and with a non-linear transformation set to one if the deal was subject to
a MOM condition or a 90% tender condition and zero otherwise. With these changes, the
results for the difference-in-differences estimator were similar to those presented here.

[87] Subramanian, *supra* note 10, at 17–19.

[88] *Id.* at 16.

TABLE 3

MULTIVARIATE ANALYSIS

Variable	CARs [-30, +10]	CARs [-30, +20]	CARs [-30, +30]	CARs [-30, +60]
Tender offer × Post-Siliconix	-29.4552**	-33.3284***	-37.0116***	-32.8857**
	(12.1830)	(12.2330)	(12.9299)	(12.9535)
Tender offer	9.7770	13.1614	12.6477	7.7499
	(8.9348)	(9.3107)	(9.6796)	(10.3282)
Post-Siliconix	16.6926**	19.1602**	17.7055**	15.5843**
	(7.5060)	(7.7384)	(7.8793)	(7.8196)
Transaction value (logarithm of deal value in millions)	-6.2028*	-7.3744**	-8.6144**	-10.3070**
	(3.4455)	(3.7086)	(3.8151)	(4.4121)
Stock consideration	-8.5993	-9.4462	-7.8952	-8.9273
	(6.1857)	(6.5778)	(6.1971)	(6.0504)
Special committee formed	3.9551	4.6557	4.9120	9.3425
	(8.5994)	(8.8704)	(9.3348)	(9.6698)
Minority approval required (%)	-0.0695	-0.0461	0.0130	0.0271
	(0.1193)	(0.1308)	(0.1318)	(0.1450)
Size of the target (logarithm of total assets)	3.1603	4.1863	5.3862	7.1150*
	(3.0335)	(3.2120)	(3.3573)	(4.0686)
Pre-deal efficiency (return on assets)	-0.2141**	-0.2432**	-0.2621***	-0.3526***
	(0.0948)	(0.1042)	(0.0992)	(0.0860)
Public status	5.7772	4.7210	2.4025	1.3343
	(5.5248)	(5.6968)	(6.0809)	(6.1506)
Financial acquirer	-7.5766	-8.9477	-5.8436	-3.1588
	(9.5837)	(10.1274)	(9.7770)	(11.9846)
Percentage of shares held prior to the transaction	-0.2833	-0.3315	-0.3204	-0.3145
	(0.2731)	(0.2710)	(0.2791)	(0.2899)
R-squared	0.2369	0.2722	0.2943	0.3413
F-statistic	2.33	2.53	2.87	3.5
P-value (Prob >F)	0.0105	0.0054	0.0017	0.0002
Transactions	129	129	129	129

Note. Table 3 reports regression estimates on the association between freeze-out CARs and the characteristics of the transaction, the target, and the controller. The dependent variables are the target's CARs in the time windows -30 to +10, -30 to +20, -30 to +30, and -30 to +60 trading days relative to the announcement of the transaction. All models are run as ordinary least squares (OLS) with intercept (not reported here). The regressions include all the targets for which daily stock returns were available in the CRSP database. Since the Breusch-Pagan test indicates heteroskedasticity, all regressions are run with White-corrected standard errors (in parentheses). * significant at 90% confidence; ** significant at 95% confidence; *** significant at 99% confidence.

rights when the consideration is stock, which, in turn, might enable the controller to pay less.[89]

Finally, the public status of the controlling shareholder and its condition as a financial acquirer do not appear to exert a significant effect on CARs, since, in all the regressions, these variables were not significant. This result implies a contrast with prior works that, in the takeover context, find differ-

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[89] *Id.* at 14.

ences in the returns that target shareholders receive in transactions with financial and strategic buyers, as well as in transactions with public and non-public acquirers.[90]

C.   Sensitivity Analysis

To test the stability of the results presented in Section III.B, this Section presents five alternative specifications. The first includes industry fixed effects, the second uses standard errors that correct potential serial autocorrelation, the third uses standard errors that correct both serial autocorrelation and cross-sectional dependence, the fourth controls for non-monotonicity in the size of the transaction by stratifying the deal value into size ranges instead of using the baseline continuous definition, and the fifth is a Huber-White specification that controls for outliers or highly influential observations.

1.   Industry-Fixed Effects

To control for industry fixed effects, each target was classified into an economic sector based on its Thomson Financial macro-level industry classification, which, in turn, is based on the Standard Industry Classification (SIC) and North American Industry Classification (NAIC) codes of the company. As shown in Table 4, after controlling for industry effects, the estimator of differences-in-differences is still consistently negative and, like the baseline regressions, statistically significant at least at 95%.

Due to the loss in degrees of freedom that the introduction of industry fixed effects generates, the regressions were also run with a reduced form that included only the characteristics of the transaction and the target, and the industry controls. In addition, the specifications were further reduced to include only the estimator of difference-in-differences, the time and transactional form variable, the size of the transaction, and the industry controls. With all these variations, the results for the estimator of difference-in-differences were similar to those presented in Table 4.

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[90] *See, e.g.*, Leonce L. Bargeron et al.*, Why Do Private Acquirers Pay So Little Compared to Public Acquirers?*, 89 J. FIN. ECON. 375–90 (2008); Amy Dittmar, Di Li & Amrita Nain, *The Bright Side of Bidder Competition* (Univ. of Mich. Working Paper, 2009); Alexander S. Gorbenko & Andrey Malenko, *Strategic and Financial Bidders in Takeover Auctions* (Stanford Business Sch., Working Paper, 2012); Ulrich Hege et al., *The Role of Private Equity in Corporate Asset Sales: Theory and Evidence* (HEC Paris Working Paper, 2009).

TABLE 4
SENSITIVITY ANALYSIS: INDUSTRY-FIXED EFFECTS

Variable	CARs [-30, +10]	CARs [-30, +20]	CARs [-30, +30]	CARs [-30, +60]
Tender offer × Post-Siliconix	-32.5228**	-37.4616***	-38.8196***	-34.6441**
	(13.3721)	(13.3687)	(14.0044)	(14.3484)
Tender offer	9.7712	13.3686	12.7186	7.8541
	(10.0490)	(10.1741)	(10.5381)	(11.3573)
Post-Siliconix	16.9367**	19.3115**	17.4036**	15.4735*
	(7.7431)	(8.0095)	(8.1910)	(8.1029)
Transaction value (logarithm of deal value in millions)	-6.6166	-8.2222*	-9.6985*	-11.6568**
	(4.1435)	(4.5098)	(4.5105)	(5.1476)
Stock consideration	-7.8847	-9.0356	-7.0821	-8.1641
	(6.1871)	(6.7357)	(6.3144)	(6.3991)
Special committee formed	2.2967	1.9585	1.7027	5.7828
	(8.8906)	(9.5965)	(9.9550)	(10.5694)
Minority approval required (%)	-0.0379	-0.0179	0.0311	0.0512
	(0.1367)	(0.1477)	(0.1479)	(0.1637)
Size of the target (logarithm of total assets)	4.1133	5.9420	7.6572*	8.9329*
	(4.0679)	(4.2235)	(4.1996)	(4.8284)
Pre-deal efficiency (return on assets)	-0.2354**	-0.2624**	-0.2795***	-0.3652***
	(0.0979)	(0.1072)	(0.1050)	(0.0929)
Public status	4.0388	3.0006	-0.0833	0.5879
	(5.8407)	(6.0618)	(6.5155)	(6.7577)
Financial acquirer	-5.3220	-8.5202	-6.2894	-2.1927
	(12.4131)	(12.8108)	(12.4244)	(14.2217)
Percentage of shares held prior to the transaction	-0.2771	-0.3027	-0.3021	-0.2912
	(0.2713)	(0.2773)	(0.2972)	(0.3118)
R-squared	1.78	1.76	1.85	2.06
F-statistic	0.0262	0.029	0.0192	0.0074
P-value (Prob >F)	0.2614	0.299	0.3208	0.3624
Transactions	129	129	129	129

Note. Table 4 repeats the analysis presented in Table 3 after controlling for industry-fixed effects. The dependent variables are the target's CARs in the time windows -30 to +10, -30 to +20, -30 to +30, and -30 to +60 trading days relative to announcement of the transaction. All models are run as ordinary least squares (OLS) with intercept (not reported here). Since the Breusch-Pagan test indicates heteroskedasticity, all regressions are run with White-corrected standard errors (in parentheses). * significant at 90% confidence; ** significant at 95% confidence; *** significant at 99% confidence.

2. *Newey-West Adjusted Regressions*

The second alternative specification uses Newey-West adjustments to the standard errors, which corrects serial autocorrelation and heteroskedasticity. The results are presented in Table 5, which shows that, after the adjustments, the estimator of difference-in-differences remains negative and significant in all the specifications.

As an additional check, the baseline regressions were also run with lags of the dependent variable instead of using Newey-West adjustments. With

the lags, the sign of the difference-in-differences estimator was again negative and the significance of the variable was similar to the baseline estimations. In addition, the lag was not significant in any of the regressions. This exercise was repeated, with similar results, using first to fourth-order lags, which were introduced sequentially into the regressions.

TABLE 5

SENSITIVITY ANALYSIS FOR SERIAL AUTOCORRELATION: NEWEY-WEST ADJUSTED REGRESSIONS

Variable	CARs [-30, +10]	CARs [-30, +20]	CARs [-30, +30]	CARs [-30, +60]
Tender offer × Post-Siliconix	-29.4552***	-33.3284***	-37.0116***	-32.8857***
	(11.1879)	(11.7720)	(12.3558)	(12.4975)
Tender offer	9.7770	13.1614	12.6477	7.7499
	(8.6542)	(9.2371)	(9.4062)	(10.1461)
Post-Siliconix	16.6926**	19.1602**	17.7055**	15.5843**
	(7.5082)	(7.5487)	(7.6718)	(7.5314)
Transaction value (logarithm of deal value in millions)	-6.2028*	-7.3744*	-8.6144**	-10.3070**
	(3.5740)	(3.7537)	(3.8603)	(4.4398)
Stock consideration	-8.5993	-9.4462	-7.8952	-8.9273
	(5.9815)	(6.4224)	(6.1235)	(5.9904)
Special committee formed	3.9551	4.6557	4.9120	9.3425
	(8.4861)	(8.8871)	(9.3591)	(9.7302)
Minority approval required (%)	-0.0695	-0.0461	0.0130	0.0271
	(0.1206)	(0.1329)	(0.1334)	(0.1467)
Size of the target (logarithm of total assets)	3.1603	4.1863	5.3862	7.1150*
	(3.1921)	(3.3126)	(3.4538)	(4.1572)
Pre-deal efficiency (return on assets)	-0.2141**	-0.2432**	-0.2621***	-0.3526***
	(0.0935)	(0.1039)	(0.0986)	(0.0856)
Public status	5.7772	4.7210	2.4025	1.3343
	(5.7020)	(5.9967)	(6.3532)	(6.3202)
Financial acquirer	-7.5766	-8.9477	-5.8436	-3.1588
	(9.5425)	(9.8862)	(9.5419)	(11.8461)
Percentage of shares held prior to the transaction	-0.2833	-0.3315	-0.3204	-0.3145
	(0.2788)	(0.2744)	(0.2817)	(0.2903)
F-statistic	2.4	2.69	3.09	3.7
P-value (Prob >F)	0.0082	0.0032	0.0008	0.0001
Transactions	129	129	129	129

Note. Table 5 presents the results of running the baseline specification with Newey-West standard errors (in parentheses). The dependent variables are the target's CARs in the time windows -30 to +10, -30 to +20, -30 to +30, and -30 to +60 trading days relative to announcement of the transaction. * significant at 90% confidence; ** significant at 95% confidence; *** significant at 99% confidence.

3. *Driscoll-Kraay Adjusted Regressions*

As an alternative to the sensitivity analyses described above, the regressions were run again using Driscoll-Kraay standard errors, which not only correct heteroskedasticity and autocorrelation, but also cross-sectional de-

pendence. More specifically, this form of the standard errors was employed to test whether the results of Section III.B hold when it is assumed that the residuals of the model might be correlated not only *within* but also *between* different groups (in this case, particularly between groups of industries).

The results are presented in Table 6, which shows that, with this adjustment, the sign and significance of the estimator of difference-in-differences is similar to the Newey-West regressions presented in Table 5.

TABLE 6
SENSITIVITY ANALYSIS FOR SERIAL AUTOCORRELATION AND CROSS-
SECTIONAL DEPENDENCE: DRISCOLL-KRAAY REGRESSIONS

Variable	CARs [-30, +10]	CARs [-30, +20]	CARs [-30, +30]	CARs [-30, +60]
Tender offer × Post-Siliconix	-29.4552***	-33.3284***	-37.0116***	-32.8857***
	(10.1562)	(10.8057)	(10.9301)	(11.2759)
Tender offer	9.7770	13.1614*	12.6477	7.7499
	(7.2813)	(7.8269)	(8.4411)	(8.8384)
Post-Siliconix	16.6926**	19.1602**	17.7055**	15.5843*
	(8.3736)	(8.7053)	(8.7612)	(8.6695)
Transaction value (logarithm of deal value in millions)	-6.2028	-7.3744*	-8.6144*	-10.3070**
	(4.2461)	(4.1194)	(4.3762)	(4.6415)
Stock consideration	-8.5993	-9.4462	-7.8952	-8.9273
	(7.2725)	(7.4864)	(6.8933)	(6.4703)
Special committee formed	3.9551	4.6557	4.9120	9.3425
	(8.4758)	(8.8798)	(9.3325)	(10.1779)
Minority approval required (%)	-0.0695	-0.0461	0.0130	0.0271
	(0.1208)	(0.1276)	(0.1291)	(0.1392)
Size of the target (logarithm of total assets)	3.1603	4.1863	5.3862	7.1150*
	(3.7824)	(3.6028)	(3.9674)	(4.2426)
Pre-deal efficiency (return on assets)	-0.2141***	-0.2432**	-0.2621**	-0.3526***
	(0.0985)	(0.1084)	(0.1020)	(0.0884)
Public status	5.7772	4.7210	2.4025	1.3343
	(5.9791)	(6.2883)	(6.5576)	(6.3634)
Financial acquirer	-7.5766	-8.9477	-5.8436	-3.1588
	(8.6916)	(8.4452)	(8.1982)	(10.7658)
Percentage of shares held prior to the transaction	-0.2833	-0.3315	-0.3204	-0.3145
	(0.2939)	(0.2827)	(0.2950)	(0.2867)
R-squared	2.51	2.93	3.59	4.1
F-statistic	0.0054	0.0013	0.0001	0
P-value (Prob >F)	0.2369	0.2722	0.2943	0.3413
Transactions	129	129	129	129

Note. Table 6 presents the results of running the baseline specification with Driscoll-Kraay standard errors (in parentheses). The dependent variables are the target's CARs in the time windows -30 to +10, -30 to +20, -30 to +30, and -30 to +60 trading days relative to announcement of the transaction. * significant at 90% confidence; ** significant at 95% confidence; *** significant at 99% confidence.

4. *Non-Linearity in the Transaction Size*

Another possible source of bias is that the type of relation that exists between the size of a transaction and the average CARs is not linear and that, therefore, the continuous definition for the size of the deal in the baseline specifications fails to capture such a relation. One possibility is that the size of the transaction does not affect the average CARs under a certain threshold, but that, once that threshold is surpassed, CARs tend to be higher. To test this hypothesis, the transactions were stratified into size ranges and the regressions were run again with these categorical variables instead of the continuous definition used in the original specifications (logarithm of deal value). These categorical variables include five strata (in millions of dollars): below USD50; above USD50 but below USD100; above USD100 but below USD150; above USD150 but below USD200; and above USD200. In all these ranges, the upper bound of the range is included in the respective category. As Table 7 suggests, with this redefinition, the sign and significance of the difference-in-differences estimator are similar to the baseline regressions.

Table 7

Sensitivity Analysis: Non-Monotonicity in the Transaction
Size Variable

Variable	CARs [-30, +10]	CARs [-30, +20]	CARs [-30, +30]	CARs [-30, +60]
Tender offer × Post-Siliconix	-29.1924**	-33.0024**	-35.7528**	-31.7165**
	(13.4961)	(13.5902)	(14.2387)	(14.0986)
Tender offer	13.1326	16.6785*	16.7735	11.8958
	(9.4490)	(9.8108)	(10.1599)	(10.7209)
Post-Siliconix	17.3101*	20.0274**	18.0775*	16.3608*
	(8.7885)	(9.0934)	(9.2379)	(9.3927)
Stock consideration	-12.5174*	-14.1120*	-12.7472*	-14.4614*
	(7.1529)	(7.4744)	(7.3259)	(7.4669)
Special committee formed	6.9973	8.1530	8.4576	13.0982
	(8.4204)	(8.5210)	(8.9663)	(9.1854)
Minority approval required (%)	-0.1151	-0.0989	-0.0450	-0.0375
	(0.1345)	(0.1460)	(0.1470)	(0.1585)
Size of the target (logarithm of total assets)	-1.4986	-1.1361	-0.2160	0.8045
	(2.3942)	(2.4694)	(2.6213)	(2.9277)
Pre-deal efficiency (return on assets)	-0.2273***	-0.2569**	-0.2768***	-0.3690***
	(0.0992)	(0.1075)	(0.1030)	(0.0891)
Public status	2.3209	0.9325	-2.0678	-3.3740
	(5.6318)	(5.8453)	(6.2185)	(6.1608)
Financial acquirer	-10.6980	-12.5477	-9.5437	-7.0576
	(10.1579)	(10.7348)	(10.4279)	(12.4464)
Percentage of shares held prior to the transaction	-0.1199	-0.1434	-0.1169	-0.0889
	(0.2592)	(0.2576)	(0.2664)	(0.2728)
USD50 <Deal size<USD100	-1.9137	-3.1544	-3.8226	-5.7916
	(7.1482)	(7.6241)	(8.8901)	(9.6133)
USD100<Deal size<USD150	0.1160	-2.1429	-0.5139	-4.7341
	(9.2527)	(9.5076)	(9.4687)	(9.9140)
USD150<Deal size<USD200	-2.1975	-3.6380	-6.5793	-6.2106
	(8.8148)	(8.9141)	(9.3328)	(10.4386)
Deal size>USD200	-1.8285	-3.3809	-7.7216	-11.5098
	(9.4646)	(10.1876)	(10.3584)	(11.4333)
R-squared	1.75	1.94	2.19	2.98
F-statistic	0.0506	0.0263	0.0104	0.0005
P-value (Prob >F)	0.2063	0.2341	0.2484	0.2867
Transactions	129	129	129	129

Note. Table 7 repeats the analysis presented in Table 3 but tests for non-monotonicity in the deal size variable. To this end, the transactions were stratified into five size ranges in function of the deal value. In all of the strata, the upper bound of the range is included in the respective category. The excluded stratus is transactions below USD50. * significant at 90% confidence; ** significant at 95% confidence; *** significant at 99% confidence.

5. Huber-White Robust Regressions

Finally, Table 8 presents the estimations of Huber-White regressions, which weight all the observations in function of their residual: the larger the residual, the lower the weight assigned to that observation. With this specifi-

cation, the regressions again point to a negative effect of *Siliconix*. In particular, for all the time windows, the sign of the estimator of difference-in-differences keeps consistently negative, and, moreover, it is significant at least at 95%. In this sense, outliers or highly influential observations are not the fundamental driver behind the results presented in the baseline regressions.

TABLE 8

SENSITIVITY ANALYSIS FOR OUTLIERS AND HIGHLY INFLUENTIAL
OBSERVATIONS: HUBER-WHITE ROBUST REGRESSIONS

Variable	CARs [-30, +10]	CARs [-30, +20]	CARs [-30, +30]	CARs [-30, +60]
Tender offer × Post-Siliconix	-27.2330**	-28.8737**	-33.1529***	-30.1143**
	(10.7365)	(11.5507)	(11.7510)	(11.9426)
Tender offer	5.5541	9.2306	7.6729	7.7667
	(8.3599)	(8.9939)	(9.1498)	(9.2990)
Post-Siliconix	9.4673	10.6590	8.0553	6.5229
	(6.1914)	(6.6609)	(6.7764)	(6.8869)
Transaction value (logarithm of deal value in millions)	-1.8990	-1.5284	-2.0162	-1.8624
	(2.5078)	(2.6980)	(2.7448)	(2.7896)
Stock consideration	-6.4569	-6.2799	-3.7854	-4.3638
	(6.0936)	(6.5557)	(6.6693)	(6.7781)
Special committee formed	5.3416	6.2301	8.3467	14.8432*
	(7.7446)	(8.3318)	(8.4763)	(8.6145)
Minority approval required (%)	0.0581	0.0672	0.1284	0.0751
	(0.1072)	(0.1154)	(0.1174)	(0.1193)
Size of the target (logarithm of total assets)	0.5095	0.2210	0.7515	0.2526
	(2.4664)	(2.6534)	(2.6994)	(2.7434)
Pre-deal efficiency (return on assets)	-0.2311***	-0.2553***	-0.2727***	-0.3568***
	(0.0658)	(0.0708)	(0.0720)	(0.0732)
Public status	4.2857	2.8379	-0.3167	-2.5693
	(5.8932)	(6.3401)	(6.4500)	(6.5552)
Financial acquirer	-2.7012	-4.7867	-2.4585	-4.7937
	(10.1674)	(10.9384)	(11.1281)	(11.3096)
Percentage of shares held prior to the transaction	-0.1305	-0.0938	-0.0405	0.0789
	(0.2426)	(0.2609)	(0.2655)	(0.2698)
F-statistic	2.57	2.47	2.84	3.84
P-value (Prob >F)	0.0047	0.0065	0.0019	0.0001
Transactions	129	129	129	129

Note. Table 8 presents the results of Huber-White robust regressions, which control for the effect of outliers or highly influential observations by weighting each observation in function of its residual (the larger the residual, the lower the weight). The dependent variables are the target's CARs in the time windows -30 to +10, -30 to +20, -30 to +30, and -30 to +60 trading days relative to announcement of the transaction. * significant at 90% confidence; ** significant at 95% confidence; *** significant at 99% confidence.

D.   Policy Implications

The univariate and multivariate estimations discussed above seem to support the hypothesis that *Siliconix* had a negative effect on CARs in tender offer freeze-outs. In all the specifications, the sign of the difference-in-differences estimator is negative, and in addition, generally significant at 95%. These results, in turn, can be interpreted as consistent with the literature that advocates for subjecting tender offers to entire fairness review if the transaction is not approved by a special committee of independent directors and by the MOM shareholders. For the same reason, the results presented in this work can be interpreted as consistent with the doctrinal path suggested by *Cox Communications* and subsequently followed, in part, by *CNX Gas*.

It is possible to argue, however, that freeze-out CARs are not a valid argument for justifying a specific standard of judicial review. In particular, according to this argument, freeze-outs do not lead to significant efficiencies or synergies because, after completing the transaction, the controlling shareholder maintains control over the same assets he controlled before. From this perspective, the only efficiency arising from a freeze-out is the savings in regulatory costs associated with being public and, in this sense, the freeze-out price or the CAR resulting from the deal is just a matter of distribution of firm value between the controlling shareholder and the minority (with no particular reasons for favoring the minority).[91] In fact, even such post–freeze-out savings are not necessarily clear: although some evidence confirms that there are cuts in terms of direct costs[92] and opportunity costs[93]

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[91] *See* Brudney & Chirelstein, *supra* note 67, at 1354–76; Pritchard, *supra* note 5, at 101–03. I thank Michael Klausner for pointing out this and the argument below about no shortage of minority capital if premiums and their associated CARs are low.

[92] This point is illustrated by the evidence on the effects of the enactment of the provisions in the New York Stock Exchange (NYSE) and NASDAQ listing rules that require a fraction of the board of directors to be independent. Specifically, showing that this requirement increased board liability insurance and directors' fees, see Linck, Netter & Yang, *supra* note 84, at 3287–3328.

[93] These opportunity costs are illustrated by the evidence showing no significant positive effects (or even negative effects) resulting from the enactment of Sarbanes-Oxley and the NYSE and NASDAQ listing rules requiring independent boards, as well as by the evidence on the negative market reaction to the passage of Sarbanes-Oxley. In particular, showing no correlation or even a negative correlation between the requirement of independent boards imposed on public firms and operative performance, *see, e.g.*, Sanjai Bhagat & Bernard Black, *The Non-Correlation Between Board Independence and Long-Term Firm Performance*, 27 J. CORP. L. 231, 231–73 (2001); Barry D. Baysinger & Henry N. Butler, *Corporate Governance and the Board of Directors: Performance Effects of Changes in Board Composition*, 1 J.L. ECON. & ORG. 101, 101–24 (1985); Stuart Rosenstein & Jeffrey G. Wyatt, *Outside Directors, Board Independence, and Shareholder Wealth*, 26 J. FIN. ECON. 175, 175–91 (1990). Similarly, finding no correlation between board composition and changes in market value to book value, see Paul W. MacAvoy et al., *ALI Proposals for Increased Control of the Corporation by the Board of Directors: An Economic Analysis*, *in* STATEMENT OF THE BUSINESS ROUNDTABLE ON THE AMERICAN LAW INSTITUTE'S PROPOSED PRINCIPLES OF CORPORATE GOVERNANCE AND STRUCTURE: RESTATEMENT AND RECOMMENDATIONS (1983); Lawrence D. Brown & Marcus L. Caylor, *Corporate Governance and Firm Operating Performance*, 32 REV. QUANT. FIN. & ACC. 129, 129–44 (2009); Mara Faccio & M. Ameziane Lasfer, *Managerial Ownership, Board*

when a company becomes private, other evidence indicates that such savings might be only apparent when compared with the efficiency losses associated with delisting the target.[94] Moreover, the fact that minority shareholders can be cashed-out with a low or nonexistent premium would not decrease the availability of minority capital, as suggested by some of the arguments discussed in Section I. That capital would be just more costly for controllers, but, at the same time, they can offset this high cost with a lower cash-out price. According to all these ideas, therefore, whether or not *Siliconix* caused a decline in tender offer CARs would not be a reason for imposing entire fairness on those transactions or any variation of that standard of review.

One possible response to this criticism is that, even if the controlling shareholder maintains control over essentially the same assets before and after a freeze-out, that transaction can still facilitate synergies that would not otherwise arise. Specifically, controlling shareholders may refrain from generating synergies (through, for example, new projects or lines of business) because they eventually bear the entire cost of those efforts but are entitled only to part of the gain. Freeze-outs, from this perspective, may provide controlling shareholders with the necessary incentives to exert a "socially optimal" effort in the administration of the target.[95]

In any case, even if this counterargument were not true, premiums or the CARs resulting from a freeze-out do not really seem to be just a mechanism to share synergies or cost savings with minority shareholders. They can also be interpreted as a cushion against potential manipulations by the controlling shareholder. Specifically, as mentioned in Section I.B, if the only

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Structure and Firm Value: The U.K. Experience (Cass Business Sch. Research Paper, 1999); Benjamin E. Hermalin & Michael S. Weisbach, *The Effects of Board Composition and Direct Incentives on Firm Performance*, 20 FIN. MGMT. 101, 101–12 (1991). On the other hand, showing that Sarbanes-Oxley produced an increase in the number of firms that deregistered but that continued to trade off-exchanges, and that, furthermore, the decision of deregistering and continuing trading off-exchanges results in negative abnormal returns for such firms (possibly because the market perceives them to be less transparent and to have less liquidity), see, e.g., Ehud Kamar, Pinar Karaca-Mandic & Eric Talley, *Going-Private Decisions and the Sarbanes-Oxley Act of 2002: A Cross-Country Analysis*, 25 J. L. ECON. & ORG. 107 (2009); Christian Leuz, Alexander Triantis & Tracy Yue, *Why Do Firms Go Dark? Causes and Economic Consequences of Voluntary SEC Deregistrations,* 45 J. ACC. & ECON. 181, 181–208 (2008). This trend of the evidence showing a negative effect of Sarbanes-Oxley is consistent with studies finding a negative market reaction to the passage of the act. *See, e.g.*, Ivy Xiying Zhang, *Economic Consequences of the Sarbanes-Oxley Act of 2002*, 44 J. ACC. & ECON. 74 (2007).

[94] This aspect is illustrated by the evidence that finds that the market, in fact, reacted positively to the passage of SOX. *See* Pankaj K. Jain & Zebihollah Rezaee, *The Sarbanes-Oxley Act of 2002 and Capital Market Behavior: Early Evidence*, 23 CONTEMP. ACC. RES. 629 (2006). *See also* Aigbe Akhigbe & Anna D. Martin, *Valuation Impact of Sarbanes-Oxley: Evidence from Disclosure and Governance Within the Financial Services Industry*, 30 J. BANK. FIN. 989 (2006); Seung Hee Choi, Melissa B. Frye & Minhua Yang, *Shareholder Rights and the Market Reaction to Sarbanes-Oxley*, 48 Q. REV. ECON. & FIN. 756 (2008); Haidan Li, Morton Pincus & Sonja Olhoft Rego, *Market Reaction to Events Surrounding the Sarbanes-Oxley Act of 2002 and Earnings Management*, 51 J. L. & ECON. 11 (2008).

[95] Coates, *supra* note 50, at 1327; Benjamin Hermalin & Alan Schwartz, *Buyouts in Large Companies*, 25 J. LEGAL STUD. 351, 358 (1996).

constraint that the controller has on the freeze-out price were the prevailing market price, there would be at least two forms of opportunistic behavior in which the controlling shareholder may engage: freezing out the minority when the controlling shareholder perceives that the target's stock is lower than its intrinsic value, or negatively influencing the value of the target with the purpose of creating a downward pressure on its market price and using that lower baseline in the negotiation of the deal. As also mentioned above, these forms of opportunistic behavior can, in turn, give rise to three types of specific efficiency losses: non-reversible value reductions (especially if the *pro rata* loss associated with the value reduction is lower for the controlling shareholder than the gain he obtains from freezing out the minority for a lower price); "value-reducing" freeze-outs (since, if the controller can buy minority shares at less than intrinsic value, he has incentives to freeze-out the minority even if the target has a higher intrinsic value as a public than as a private company); and reduced access to minority capital (because, if the minority anticipate that they might be cashed out when the market price is lower than intrinsic value, there will be few incentives to invest in minority stakes *even if*, as discussed above, those minority shares can be initially bought for a low price).[96] In this sense, since premiums contribute to the prevention of the potential manipulations that generate these efficiency losses by detaching the freeze-out price from market prices, the relevance of such premiums and the CARs associated with the deal does not necessarily depend on whether there are cost savings or synergies after the transaction. For the same reason, a systematic difference in CARs between freeze-outs subject to two different standards of judicial review is a relevant element to be considered when selecting the applicable standard of review.

CONCLUSIONS

The results presented in this work are consistent with the hypothesis that relative CARs in tender offers decreased after *Siliconix.* As shown in Section III.A, while CARs in tender offers were higher than CARs in mergers before *Siliconix*, exactly the opposite occurred after 2001 (that is, CARs in mergers became higher). In addition, while the difference in CARs before *Siliconix* was only significant for one time window, after *Siliconix,* the difference became significant for all the time windows.

Multivariate analyses reinforce these preliminary results. As discussed in Section III.B, in regression estimates on the association between CARs and target, controlling shareholder, and deal characteristics, the estimator of difference-in-differences ("postSiliconix×tender") was negative and directionally consistent in all the specifications. In addition, it was statistically significant at least at 95%. Furthermore, the estimations presented in the baseline regressions were generally confirmed by alternative specifications

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[96] Subramanian, *supra* note 6, at 30–38.

that include controls for industry-fixed effects, Newey-West adjustments for serial autocorrelation, Driscoll-Kraay adjustments for cross-sectional dependence, controls for non-linearity in the size of the transaction, and Huber-White robust regressions.

In light of this, the results of this work seem to be generally consistent with the prior literature that argues for imposing entire fairness review on tender offers that do not emulate an arms-length transaction and, consequently, also consistent with the doctrine articulated in *Cox Communications* and partially followed by *CNX Gas.*