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Voluntary Disclosure of Strategic Alternatives: A Cost-Benefit Analysis

by

Jenny Zha

A dissertation submitted in partial satisfaction

of the requirements for the degree of

Doctor of Philosophy

in

Business Administration

in the

Graduate Division

of the

University of California, Berkeley

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Spring 2016

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Abstract

Voluntary Disclosure of Strategic Alternatives: A Cost-Benefit Analysis

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Jenny Zha

Doctor of Philosophy in Business Administration

University of California, Berkeley

Professor Richard Sloan, Chair

This dissertation studies a firm's decision to voluntarily disclose that it is seeking "strategic alternatives," effectively setting out to explore the potential sale or merger of the company. Firms appear to use these voluntary disclosures to maximize shareholder value and credibly convey private information. Voluntary disclosures of strategic alternatives are associated with a three-day return of +5.8 percent on average. Compared to an entropy-balanced control group with similar characteristics in expectation, disclosing firms that are subsequently acquired experience positive abnormal takeover returns (reflecting benefits from a more favorable sale process and improved information), whereas disclosing firms that are not subsequently acquired experience negative abnormal returns (reflecting costs from more dysfunction). The existence of economically significant costs and benefits is consistent with a general voluntary disclosure framework resulting in a threshold equilibrium. The decision to seek strategic alternatives appears to be prompted by poor performance, poor information environment, and the presence of corporate governance catalysts, namely, blockholders, activists, and golden parachutes.

I dedicate this dissertation to the memory of my mother.

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Acknowledgements

I immensely appreciate the guidance provided by my dissertation committee: Richard Sloan (Chair), Patricia Dechow, Panos Patatoukas, Alastair Lawrence, and Michael Anderson. In particular, I would like to thank Richard, whose wisdom has helped shaped my thinking about accounting research throughout the PhD program and whose invaluable advice has guided me on this project and others. I also thank Sunil Dutta, Yaniv Konchitchki, and Alexander Nezlobin for leading productive research seminars that have helped develop me as a doctoral student at UC Berkeley.

Many more people have provided feedback on earlier drafts. I thank John Hand, Eva Labro, Henry Laurion, Samuel Tan, Gwen Yu, Jean Zeng, and seminar participants at UC Berkeley, UIC, UNC, Duke, Harvard, Texas, Colorado, George Washington, USC, and Fordham. I thank Allen Ding, Peter Michelson, Carling O'Brien and Philip O'Brien for sharing their practitioner insights.

I gratefully acknowledge financial support from the Haas School of Business and the Deloitte Foundation.

Chapter 1

Introduction

In mergers and acquisitions (M&A) banking jargon, seeking "strategic alternatives" is a common euphemism for exploring the potential sale or merger of the company. Whether to pursue strategic alternatives is one of the most disruptive corporate decisions a company faces in its lifetime, putting the company's future existence at stake. Moreover, whether to publicly announce strategic alternatives may affect the eventual value realized by shareholders.

This dissertation studies the determinants and consequences of voluntary disclosure to explain why some, but not all, firms choose to announce that they are exploring strategic alternatives. A potential target firm that is evaluating strategic alternatives must decide whether to publicly announce its pursuit or keep silent and shop itself privately.[1] If a public announcement is made, it occurs at an imperative time when very few public disclosures are made about the sale process in an opaque market shrouded with non-disclosure agreements, uncertainty and information asymmetry. An announcement would inform all current and potential future stakeholders that the company is attempting to sell itself, which could impact the sale process, information environment, operations, and ultimately, firm value. With the high stakes of M&A, why do we observe a threshold equilibrium, where only some firms publicly announce that they are for sale, while others evaluate options privately? This study draws on economic theory and provides empirical evidence of a capital market cost-benefit tradeoff underlying this voluntary disclosure decision, which explains the threshold equilibrium.

While a large body of voluntary disclosure research traditionally investigates management forecasts (of earnings, cash flows and operations), conference calls, and detail in annual reports, this paper examines a disruptive voluntary disclosure that is new to the literature. Boone and Mulherin (2007, 2009) describe strategic alternatives as part of the sale process, but do not perform any empirical tests related to disclosures of strategic alternatives. Although fundamentally different from the more commonly examined disclosure types, strategic alternatives disclosures are a compelling application of a general voluntary disclosure model, where endogenous relations between information asymmetry, market incentives, and disclosure costs affect the firm's disclosure choice. Furthermore, this disclosure decision is likely to afflict a very different set of firms than those considering whether to disclose earnings forecasts, for example. Firms that are seeking strategic alternatives and face the disclosure decision also face drastic operational and competitive pressures during a transformative time.

Most prior empirical papers examining conventional measures of voluntary disclosure have documented an association between disclosure and either costs or benefits, rather than a cost-benefit tradeoff, which is documented in this paper. Perhaps, if given cursory thought, it seems at first empirically implausible to show that disclosure is both positively and negatively associated with firm value. However, a theoretical and intuitive understanding of corporate disclosure decision-making predicts the simultaneous existence of both costs and benefits

[1] A company typically initiates the exploration of strategic alternatives before receiving any offer or entering any negotiation, but it may also explore strategic alternatives after receiving some preliminary indication of interest.

underlying the manager's voluntary disclosure decision. Empirically, the partitioning of disclosing firms based on future outcomes allows my research design to show net benefits accruing to the successfully sold firms' owners, while net costs accrue to the unsuccessfully-sold firms' owners.

Analytically and empirically, economic benefits to firm value must be significant to actually incentivize managers to make non-mandatory disclosures, yet economic costs must also be considerable to deter some firms with prohibitively high disclosure costs. If there are not both, in other words, if either disclosure costs or benefits are empirically undetectable or immaterial, then researchers should expect either a full-disclosure world as in Grossman and Hart (1980) or a non-disclosure world – neither of which is the case for strategic alternatives disclosures.

There are several advantages of empirically studying voluntary disclosure in the strategic alternatives setting, since the reality of this disclosure is well-matched to the general analytical framework of voluntary disclosure.

(i) In theory and practice, the firm's disclosure decision considers both costs and benefits on firm value, which, in a high-stake M&A setting, are likely to be meaningful.
(ii) Uncertainty in actually achieving a subsequent transaction (i.e., the private signal is imprecise) allows partitioning of disclosing firms into those that were *ex-post* successfully acquired and those that were *ex-post* unsuccessful in their sale process and, in turn, allows me to document the costs and benefits on stock price.
(iii) Consistent with theory, the real objective function of firms disclosing strategic alternatives is to maximize shareholder value.
(iv) Consistent with a single-period model setup, the current period's disclosure decision is unlikely to be influenced by a previously established disclosure policy, since these are not periodic events. Strategic alternatives disclosures are one-off events unlike the multi-period nature of conventional disclosures.
(v) As in the theoretical framework, the terminal value of the firm is measurable for the subset of firms undergoing transactions.
(vi) Consistent with theory, the disclosures, as a whole, are *ex-post* verifiable.
(vii) Consistent with the theoretical motivation for disclosure, information asymmetry is high in the precursory M&A process.

First, I find that strategic alternatives disclosures are economically significant and informative events, and thus warrant further examination. Using a sample of 990 disclosures from 1990 to 2014, I document that, on average, disclosures are associated with a +5.8 percent three-day stock return and a 2.6-time increase in share turnover, suggesting that the market perceives these disclosures to be credible on average. This disclosure also prompts demand for firm-specific information, as disclosing firms experience 4-times their normal rate of daily SEC filing downloads on EDGAR on the disclosure date. For the sample as a whole, strategic alternatives announcements are *ex-post* verifiable, as an abnormally high 31.5 (41.4) percent of the disclosing firms are acquired within one (two) years. Even after controlling for fundamental,

risk, and market characteristics, disclosure remains an incrementally important predictive variable for the probability of becoming acquired.

Second, I document significant valuation benefits and costs associated with the voluntary disclosure of strategic alternatives. I motivate this analysis with a general voluntary disclosure model with explicit cost and benefit parameters resulting in a threshold equilibrium. The theoretical framework is consistent with reality, as directors announce strategic alternatives for a rich variety of reasons (i.e., benefits), including to signal the firm's availability and higher prospects for a sale or merger, be transparent and inform investors, demonstrate commitment by the board of directors to maximize shareholder value through M&A, control the information environment during the sale process preempting rumors and speculation, quell shareholder activists, and cast a wider net to potential bidders in hopes of ultimately receiving a higher likelihood of takeover and a higher takeover premium. Consistent with these institutional benefits of disclosure, I empirically observe capital market gains to disclosure for firms that are subsequently acquired.

However, announcing strategic alternatives to access these benefits also entails costs. The costs must be significant enough to deter some firms from announcing. In this setting, there are several sources of disclosure costs, which could aggregately impact firm value. First, given that a public announcement solicits a greater number of interested bidders, some of whom are competitors, proprietary information (Verrecchia, 1983) reaches a wider audience through pitch books, manager meetings, and data rooms. Second, public knowledge that a firm is trying to sell itself alienates employees, customers, and suppliers due to due to the firm's uncertain future and negatively impacts normal business operations. Third, an announcement serves as a public acknowledgement that the current stand-alone firm strategy is not expected to be viable and makes the firm appear desperate. Fourth, managers potentially face job loss disutility costs if the firm is more likely to experience a change in control after disclosure. Lastly, if the firm discloses but is not subsequently sold, then the market gradually realizes that, as no buyer emerges over time, the firm is unsaleable and unsalvageable at its current price. As prospects of a future deal grow dimmer, stock prices slide.

Consistent with the institutional knowledge, I empirically observe both capital market benefits and costs related to disclosure. I document the long-run stock returns of the disclosing sample versus that of an entropy-balanced control sample to test for the hypothesized benefits and costs associated with disclosure. The control sample is comprised of all other publicly-traded firms from the same industry-years, and the control observations are weighted such that the control group serves as the counterfactual to the disclosure group. I find that the disclosing firms' initial positive announcement premium is temporarily sustained, reflecting a window of opportunity to maximize price for shareholders. However, over a one-year horizon, the average return of the disclosing group reverses and results in a negative abnormal return by the end of the period. This presents a puzzle since the positive announcement reaction to the disclosure group as a whole does not appear to reflect a rational, unbiased forecast of the future.

Conditional on *ex-post* transactional outcomes, disclosing firms that are subsequently taken over within one year appear to capture the valuation benefits generated by the

announcement, whereas disclosing firms that are not subsequently taken over experience valuation costs generated by the announcement. The *ex-post* acquired firms that preemptively disclosed have future returns averaging +39.7 percent compared to +30.2 percent for the acquired control firms. This excess takeover-related premium appears to be generated at the time of the announcement. On the other hand, the *ex-post* unsold firms that preemptively disclosed experience lower returns averaging +0.6 percent compared to +16.1 percent for unsold control firms. This subsample of subsequently-unsold disclosing firms drives the predictable negative abnormal future return for the disclosing group as a whole. The return spreads between disclosing and control groups are robust to using risk-adjusted returns, an alternate accumulation window for returns, and a one-to-one matched control group in robustness checks. These results suggest that the valuation benefits of disclosure are conditional on a successful takeover. For the subsequently unsold firms, the opportunity to maximize shareholder value dissipates as stock prices decline and the costs of disclosure materialize into firm value. Overall, my main findings support the economic story that firms use these disclosures to attempt to maximize firm value and credibly convey private information by incurring costs.

I find that specific mechanisms of disclosure benefits include attracting more bidders, receiving more-informed offers, and lowering information asymmetry. These benefits ultimately generate value for disclosers. I find that specific mechanisms of disclosure costs include decreased revenues and decreased operating performance. These costs are consistent with the disruptive effects of publically seeking a sale on firm operations, and ultimately lowering firm value. In falsification tests, I employ an alternate control group experiencing the involuntary disclosure of strategic alternatives, from rumors and media leaks, and results suggest that the future return results and the cost and benefit mechanisms of disclosure are unlikely to be completely endogenous.

A key component of my research design is to minimize innate differences between the disclosing and control groups in order to warrant their comparison and attribute observed differences to the act of disclosing. I use entropy-balancing (Hainmueller, 2012; Hainmueller and Xu, 2013) to create a control group that is comparable to the disclosing group along multiple dimensions: the industries, years, fundamental, market, risk, information intermediary, and ownership characteristics of the entropy-balanced control group are not statistically different from those of the disclosing group, in the means and standard deviations. I use the full entropy-balanced control group as the benchmark when observing consequences of disclosure, namely, transactional outcomes, future stock returns, and specific costs and benefits. I also use industry and year fixed effects, control variables, the inverse Mills ratio, and two-way clustering for robust inference.

Third, I investigate the determinants of disclosure. Voluntary disclosure of strategic alternatives is associated with poor performance, lower growth and investment prospects, a worse information environment, and control-related corporate governance characteristics, namely the presence of blockholders, activists, and golden parachutes. These attributes may alter the (perceived) cost-benefit considerations and push firms over the disclosure threshold. I find that poorly-performing companies with low prospects and sparse analyst following have a higher

probability of disclosure, especially if blockholders or activists are pushing for a strategic transformation. This suggests that such desperate, poorly-performing companies have more to gain from publicizing their strategic alternatives. Moreover, I find that golden parachute provision in place is a determinant of disclosure. This is consistent with the idea that executive change-in-control agreements offset some of management's disutility from a sale, and make the firm more likely to disclose. In addition, I find that smaller firm size and more intangible assets are determinants of disclosure.

Analyzing firms that disclose strategic alternatives tells us something new about potential target firms, including those that do not become future targets. In contrast to prior studies that describe the characteristics of actual target firms (Palepu, 1986; Raman, Shivakumar and Tamayo, 2013; McNichols and Stubben, 2015), this study identifies the traits of firms that announce that they are seeking to be acquired, regardless of whether a bid is received.

Overall, studying the disclosure of strategic alternatives advances our understanding about the role of an important voluntary disclosure in the M&A sale process. My findings are informative to managers and directors, M&A bankers, M&A lawyers, investor relations and corporate communications advisors, activists who push for the sale of a company, and event-driven hedge funds. It is important for all these parties to better understand the future transactional roadmap, stock price consequences, and managerial decision-making related to strategic alternatives announcements.

The rest of the dissertation is organized as follows. Chapter 2 provides background information, which reviews the extant literature, the contributions and advantages of my setting, and institutional knowledge. Chapter 3 develops my three hypotheses. Chapter 4 presents a general voluntary disclosure model with explicit cost and benefit parameters. Chapter 5 describes the data and sample construction. Chapter 6 describes the empirical research design and presents the results. Chapter 7 concludes.

Chapter 2

Background Information

2.1 Prior literature

This paper lies at the intersection of accounting and financial economics research, the former which seeks to understand company-issued voluntary disclosure decisions and the latter which seeks to understand target motives and the sale process that precedes M&A transactions. I study a disruptive disclosure that suits the stylized facts of a classic discretionary disclosure model and provide evidence that there are both economic benefits and costs associated with voluntary disclosure. Typically, voluntary disclosure studies examine some periodic, repeated release of firm news.[2] Other studies examine a composite index of analysts' assessments of annual and quarterly financial disclosures, press releases, summaries of annual meetings, presentations to analysts, and management's accessibility (Lang and Lundholm, 1996), and press releases and other media mentions including earnings results, earnings forecasts, nonfinancial results, and nonfinancial forecasts (Lang and Lundholm, 2000).

Furthermore, most prior voluntary disclosure studies associate disclosure with either a cost or benefit. In contrast, this paper provides evidence of a measurable cost-benefit tradeoff that impacts firm value in the long run. For example, prior papers find that a benefit of voluntary disclosure is a lower cost of capital (Botosan, 1997; Brown, Hillegeist and Lo, 2004; Francis, Nanda and Olsson, 2008), but the studies implicitly assume, rather than empirically test, that the magnitude of disclosure costs is significant enough to prevent a full unravelling.[3]

Unlike other types of voluntary disclosure, strategic alternatives disclosures are specifically aimed at providing information about M&A potential and maximizing shareholder value. Shareholder value, or price, is the overarching summary variable that will impound all costs and benefits, whether directly or indirectly, whether through the numerator (future cash flows) or denominator (discount rate). While existing analytical studies find voluntary disclosure to reduce cost of capital and improve liquidity (Diamond and Verrecchia, 1991) and existing empirical studies find a negative association (Botosan, 1997; Brown et al., 2004; Francis et al., 2008), these papers do not conclude whether disclosure ultimately maximizes firm value, as both numerator (expected cash flows) and denominator (cost of capital) effects need to be considered.

The stated objective function in analytical models is to maximize firm value which is true in this setting of strategic alternatives disclosures. Other compelling parallels can be drawn to the discretionary disclosure theory. I adapt the static, single-signal, single-period models from

[2] Examples of studies that examine management forecasts (which includes earnings forecasts, earnings preannouncements and cash flow forecasts) include Lev and Penman (1990); Skinner (1994); Kasznik and Lev (1995); Frankel, McNichols, and Wilson (1995); Wasley and Wu (2006); and Ge and Lennox (2011). Examples of studies that examine conference calls include Brown, Hillegeist, and Lo (2004) and Kimbrough and Louis (2011). Examples of studies that examine voluntary disclosure in annual reports include Botosan (1997); Francis, Nanda and Olsson (2008).

[3] A noteworthy exception is Lang and Lundholm (2000), who show that in the seasoned equity offering setting, firms increase pre-offering voluntary disclosures to maximize firm value in the short term, to the detriment of lower firm value in the long term.

Verrecchia (1983), Dye (1985), Jung and Kwon (1988), Shavell (1994), and Pae (2002), because the simplicity and intuition can be readily applied to analyze this one-off decision to disclose strategic alternatives, unlike management forecasts or other disclosures occurring periodically. Therefore, complications like multi-period considerations, past disclosure behavior and committing to a disclosure precedent (Graham, Harvey and Rajgopal 2005; Beyer, Cohen, Lys and Walther, 2010) are unlikely to be problematic in this setting of strategic alternatives disclosures.

Prior empirical papers studying voluntary disclosure in the M&A setting have almost exclusively focused on the bidders' disclosures, with the exception of Brennan (1999).[4] Kimbrough and Louis (2011) find that bidders' conference calls are associated with more favorable merger announcement returns, and conclude that bidders use conference calls to convey favorable private information, including forward-looking forecasts of post-merger performance. Ge and Lennox (2011) measure management forecasts of stock bidders before versus after (as the benchmark) the merger announcement, and find that while bidders do not issue more good news forecasts, they issue less negative news forecasts, suggesting that they are opportunistically withholding bad news from impacting their stock prices. Ahern and Sosyura (2014) find that bidders generate more press releases in the media to manage their stock prices upwards during stock-financed merger negotiations. Amel-Zadeh, Lev and Meeks (2014) find that the frequency of bidders' earnings forecasts are positively associated with stock-financed acquisitions, bidders' (over)valuation, deal completion and negatively associated with target acquisition premium. Goodman, Neamtiu, Shroff and White (2014) find that prior management forecast activity is positively associated with merger announcement returns, suggesting that the market infers that managers who make better forecasts also make better acquisition decisions. In contrast, this paper focuses on voluntary disclosure by the sell-side firm. Brennan (1999) studies earnings forecasts by targets in the UK and finds that forecasts are more likely when a takeover bid is hostile or a competing offer, the target is large, and blockholders are present. In addition, Brennan finds that targets' forecasts tend to contain good news (68%) and are associated with the offer price being increased, although not associated with the success of the bid.

This paper fills in some voids in the M&A event study literature. Following Asquith's (1983) findings that stock returns predict potential target firms before a merger bid is made, this paper identifies a missing event that should be included when calculating the target's returns to M&A, otherwise, return windows may be incomplete. Moreover, while there are many theories as to why M&A occur, most focus on the acquirer's motives. Motives of M&A acquirers include empire-building (Avery, Chevalier and Schaefer, 1998), manager entrenchment (Shleifer and Vishny, 1989), and manager hubris or overconfidence (Roll 1986; Malmendier and Tate, 2006). Fewer explanations are given for the target's motives, like the target inefficiency hypothesis (Dodd and Ruback, 1977; Jensen, 1988)[5] and the bankruptcy avoidance hypothesis (Amit, Livnat

[4] Only one paper (Brennan, 1999) to my knowledge has examined voluntary disclosures in M&A by the selling firm. Specifically, she examines earnings forecasts by target firms.

[5] Dodd and Ruback (1977) find consistent evidence with the 'internal efficiency hypothesis', that targets of an unsuccessful tender offer still experience positive returns because receipt of the tender offer revealed a source of inefficiency that was eliminated.

and Zarowin, 1989), both of which are supported by the poor and desperate characteristics of disclosing firms in my sample.

While prior empirical research characterizes *ex-post* targets relative to non-targets (e.g., Palepu, 1986) or characterizes targets of completed deals relative to those of terminated deals (e.g., Marquardt and Zur, 2015), my disclosure sample provides a different foundation from which to analyze prospective targets' motives for engaging in M&A. A limitation of the *ex-post* target samples used by prior studies is that they are unlikely to solely reflect target motives for M&A because they also reflect bidders' and regulators' selections of targets. In contrast, the observed choice to disclose strategic alternatives reflects purely the volition of the selling firm. The sample of strategic alternatives disclosures can enlighten us about firms that want to be sold, including those that fail to subsequently receive a bid or be taken over.

This paper also contributes evidence on the role of corporate governance in firms attempting to salvage firm value with strategic alternatives. In light of prior papers finding a positive association between increases in disclosure and increases in institutional ownership (Healy, Hutton and Palepu, 1999), I find that firms disclosing strategic alternatives have higher levels of but decreasing institutional blockownership, suggesting that institutional investors have short investment horizons (Bushee and Noe, 2000) and discipline managers by "exit," rather than by actively monitoring firm performance using "voice" under classical theory (Edmans, 2014). However, the disclosing firms feature higher levels of and increasing activists, who are likely to be using "voice" to monitor managers. Related to the literature on activists' role during M&A (Brav, Jiang, Partnoy, and Thomas, 2008), this paper suggests that activists can successfully push a company to put itself up for sale and jointly disclose. Consistent with prior papers about golden parachutes playing a role in receiving M&A offers and closing M&A deals (Machlin, Choe, and Miles, 1993; Fich, Tran, and Walking, 2013; Bebchuk, Cohena, and Wang, 2014), this paper suggests that golden parachutes provide incentives to managers earlier in the sale process than previously shown.

2.2 Institutional background

Institutionally, the firm's decision makers are managers and directors. While the managers cooperate in the team effort of assessing alternatives, approaching potential suitors, and holding management meetings, the board of directors officially approves the pursuit of strategic alternatives. Boards owe a fiduciary duty to shareholders to maximize value, and this may include selling the company, if, under special circumstances, the most efficient allocation of firm resources is not to continue as a stand-alone entity. Value and liquidity may be sought through strategic alternatives, jargon for mulling the merger or sale of the company among other strategic and financial options. Typically, the managers and directors of the potential selling firm assess the transactional landscape with their financial advisors and evaluate whether any parties would have an interest in acquiring the company, and if so, at what price and on what terms. If a takeover or other transaction could create more value for its shareholders than the status-quo stand-alone strategy, the firm and its financial advisors develop a preliminary valuation considering the various transactional alternatives. While the sale, merger or other business combination of the company are the most commonly cited alternatives, less common alternatives

include a spin-off, joint venture, restructuring, refinancing or recapitalization -- the latter two are euphemistically called "financial alternatives."

This amorphous pre-sale process is unobservable to the public and can be many years in the making as pre-existing relationships and communications between executives, directors and bankers make it difficult to pinpoint the start of a distinct intention to craft a deal. However, some firms, during the preliminary sale process, disclose publicly that they are "evaluating strategic alternatives" or "on the block," jargon for seeking potential buyers. The selling firm and its bankers prepare a "teaser" and confidential pitch book to approach possible buyers. Potential bidders sign confidentiality agreements, review the seller's materials (confidential information memorandum, financial projections, and management presentation) and submit initial indications of interest. A select group of bidders may continue due diligence with access to data rooms and advance to more serious negotiations or enter into an auction. If a buyer and an agreement emerge, then the parties sign a letter of intent, obtain regulatory and shareholder approval for the transaction, and prepare the definitive agreement. For stock-financed transactions, the acquirer would then register for additional securities by filing a Form S-4 Registration Statement with the SEC. Overall, the process is laden with imperfect and asymmetric information between potential target firms and potential buyers. Although information about firm value becomes available to potential suitors over the course of the sale process—during multiple rounds of due diligence—there is initially much information asymmetry about the potential target firm, including the fundamental issue of whether the firm is amenable to a sale. Because potential bidders must initially rely on public information sources and the information acquisition and solicitation process are resource-consuming, there is an important role for public strategic alternatives disclosures to bridge this information gap.

The disclosure of strategic alternatives by publicly-traded companies is made through a press release or 8-K filing and is typically the first publicly identifiable event that marks the preliminary sale process when the board has authorized senior management and its bankers to review potential transactions. Regardless of whether any potential suitor has been identified, whether any preliminary discussion has already occurred, or whether any correspondence is bidder- or target- initiated, a firm will unequivocally evaluate strategic alternatives at the onset of any formal intention to sell itself. The formal intention is established by the board, and a special committee of independent directors is appointed to oversee the process. The disclosures are often made by the investor relations department or external corporate communication consultants and occur before there is any formal bidding or offer. An exception is that a firm may disclose strategic alternatives after receiving an unsolicited offer in order to shop itself for a better offer (i.e., Revlon duties). All strategic reviews leave open the possibility of remaining independent as the chosen alternative. The disclosures often disclaim that there is no set timetable for the strategic review process and that there can be no assurance that any transaction will be undertaken. Because the sale process is not publicly observable, the strategic alternatives announcement will typically be the only M&A-related disclosure by the company until any offers are received.

Chapter 3

Hypotheses Development

3.1 Information content hypothesis

My first hypothesis makes predictions concerning the significance and informativeness of strategic alternatives announcements. In an environment notorious for imperfect and asymmetric information, strategic alternatives disclosures are one of the few voluntary disclosures that could potentially inform the market prior to the legally mandated merger announcement. Based on a signaling framework, the announcement is expected to generate positive price and volume reactions since (investors know that) managers disclose only if they have relatively good news above some threshold that would benefit firm value. Also, if announcements are credible, then the strategic alternatives disclosures are predictive of future takeovers.

H1: Strategic alternatives disclosures are informative events, based on generating abnormal returns, volume, and information acquisition, and based on predicting future takeovers.

There is tension to this hypothesis, because strategic alternative announcements may not be informative or predictive of future takeovers. Arguably, all companies should be continually surveying the transactional landscape to identify potential deals that would maximize value for shareholders, so that seeking strategic alternatives and the related disclosure could be seen as nothing out of the ordinary course of business. Moreover, merely evaluating strategic alternatives does not constitute a mandatorily reportable event under the SEC's Form 8-K Disclosure Requirements.[6] Announcing strategic alternatives may not mean a sale is imminent. Voluntary disclosure in M&A is a gray area in practice, where the U.S. Supreme Court has stated that the obligation to disclose depends on the materiality of the news and the probability of the transaction occurring (Bruner, 2004, p.693). This leaves enormous discretion to the firm in ascertaining at a preliminary stage the materiality of strategic alternatives and the probability that it will lead to an actual transaction. If the disclosure does not predict a higher probability of takeover, but the market reacts positively, then the market would appear to be fooled by "cheap talk." It is therefore an empirical question whether such announcements are informative and credible on average.

3.2 Costs and benefits hypothesis

My second hypothesis makes predictions concerning the post-announcement long-run returns following disclosure. Examining the long-run shareholder wealth effects would reveal the real benefits and costs impacted by disclosure, as the initial uncertainty about future outcomes of the sale process resolves itself in the long run.

H2: There are tangible benefits and costs from publicly disclosing strategic alternatives.

[6] Requirement Item 8.01 calls for other events not explicitly required to be the subject of optional disclosure if the issuer deems it important.

The disclosure of strategic alternatives has several tangible benefits. First, the public announcement communicates a public commitment by the board of directors to maximize shareholder value. Second, publicly disclosing strategic alternatives casts a wider net in search of more interest and a higher takeover premium. Third, it aids transparency that then reduces information asymmetry and information acquisition costs facing potential bidders. Because potential bidders have to expend resources to evaluate a potential target and get board approval to approach a potential target, often without knowing if the target is amenable to an acquisition, a self-issued proclamation by a potential target that is favorably disposed towards a sale helps bridge the information gap and circumvents the initial information acquisition outlay by potential bidders to gauge interest in a transaction. This may result in more interested bidders and bidders with more resources left to spend on the purchase price.

As an example of a strategic alternatives disclosure affecting positive outcomes, on January 30, 2007, Eagle Hospitality Properties Trust, Inc. announced that it had appointed a special committee to review strategic alternatives. Details of Eagle's sale process are from its DEFA14A SEC filing on July 31, 2007. Eight bidders were invited to the final round of bidding. The eventual buyer, AP AIMCAP's purchase price of Eagle represented a premium of 42% over Eagle's closing stock price on January 29, 2007. The firm's financial advisor, Morgan Stanley, had previously initiated contact with 17 strategic buyers and 32 financial buyers. Then, following the public announcement of strategic alternatives, an additional four strategic buyers and 13 financial buyers inquired about Eagle. This example illustrates that while bankers use their networks to privately identify potential suitors, a public announcement can effectively disseminate information to heterogeneous pools of investment capital that may have eluded private solicitation. Disclosure can thereby benefit shareholders if the firm is successfully acquired because wider information dissemination can attract the optimal buyer with the greatest synergistic gains to be had; or the mere threat of more rival bids following a public disclosure creates a contestable market and elicits competitive offers (Aktas, De Bodt, and Roll, 2010); or actual competitive bidding among more bidders results in the winner's curse (Boone and Mulherin, 2008). I therefore hypothesize that, conditional on a completed takeover, disclosure is associated with greater target shareholder wealth.

If strategic alternatives disclosures are credible and are associated with benefits, then disclosure costs must also exist if not all firms that want to explore strategic alternatives choose to publicly disclose it. Proprietary costs (Verrecchia, 1983), reputation costs, and litigation risk (Skinner, 1994; Healy and Palepu, 2001) have been commonly cited as frictions that prevent voluntary disclosure by all firms. However, the empirical evidence is mixed on whether disclosure is associated with these costs. For example, the literature is conflicted as to whether litigation risk is a cost of disclosing bad earnings news (Francis, Philbrick, and Schipper, 1994) or avoiding litigation is a benefit of promptly disclosing bad earnings news (Skinner, 1994). Frankel, McNichols, and Wilson (1995) suggest, without testing, that potential legal liability and reputation costs may deter firms from issuing optimistic forecasts.

In my setting, there are several types of disclosure costs, both immediate and long-lived. First, a strategic alternatives disclosure is a signal to the public that the firm's current execution

of its stand-alone strategy is not expected to be viable. Second, a publicly broadcasted sale process may increase the revelation of proprietary information through solicitation materials and due diligence rounds. More interested bidders conducting due diligence increases the proprietary information that may be gained by competitors if the deal is not consummated, despite signed non-disclosure agreements. Third, public knowledge that a company is trying to sell itself may lead to dysfunctional behavior of the firm's current and potential stakeholders. For example, knowing that their company is trying to sell itself, employees may be less productive or may be interviewing at competitors. Current and potential suppliers and distributors along the supply chain may be less likely to initiate or renew business with a firm that might cease to be a going concern. Customers may not purchase the firm's products due to concerns about deteriorating quality and customer support. Managers and directors are also likely to spend time and effort in meetings with potential buyers and reviewing offers, detracting from operational oversight.

Practitioners and potential target firms are aware of the consequences that a public disclosure of strategic alternatives makes the firm appear desperate and can lead to dysfunctional stakeholders. A former M&A lawyer states, "As a company, you're not really supposed to say, 'We're trying to sell ourselves,' because if you don't find a buyer then you look a bit desperate. But you can say, 'We're exploring strategic alternatives,' which means the same thing, because if you end up not finding a buyer you can conclude that your exploration of strategic alternatives led you back home, to the strategy that was right there with you all along."[7] In attempt to *ex-ante* mitigate the capital market consequences and legal liability if a firm discloses strategic alternatives yet fails to sell itself, firms will include a prototypical disclaimer in the announcement, such as, "there can be no assurance that the Company's review of strategic alternatives will result in any transaction. The Company does not intend to make further public comment regarding these matters during the strategic review and exploration process."

As an example of dysfunctional consequences following a public strategic alternatives disclosure, BlackBerry announced strategic alternatives on August 12, 2013, and afterwards acknowledged that the sales process was directly eroding its stakeholder (i.e., customer) base and negatively impacting sales. The Financial Post wrote on October 2, 2013: BlackBerry Ltd. Is under the gun to find a buyer as quickly as possible as the embattled technology company concedes the sale process itself is likely scaring away customers. […] it is now clear the company needs a firm offer, and quickly, if it is going to stem the sales hemorrhaging and salvage any hope of a turnaround. In its regulatory filings Tuesday night and its earnings report last Friday, Black-Berry highlights that the sale process is one of a number of negative factors weighing on the company […] "The Company also believes that uncertainty surrounding its ongoing strategic review process may have negatively impacted demand for the company's products in the second quarter of fiscal 2014." When Blackberry's eventual failure to complete a deal was announced on November 4, 2013, shares plunged more than -18% on the news. The Financial Post reported on October 2, 2013, "BlackBerry Ltd. is under the gun to find a buyer as quickly as possible as the embattled technology company concedes the sale process itself is likely scaring away customers. […] it is now clear the company needs a firm offer, and quickly,

[7] Matthew Levine. Bloomberg View. October 7, 2014. http://www.bloomberg.com/view/articles/2014-10-07/allergan-is-open-to-alternatives-that-aren-t-valeant.

if it is going to stem the sales hemorrhaging and salvage any hope of a turnaround. In its regulatory filings Tuesday night and its earnings report last Friday, BlackBerry highlights that the sale process is one of a number of negative factors weighing on the company […] The Company also believes that uncertainty surrounding its ongoing strategic review process may have negatively impacted demand for the company's products in the second quarter of fiscal 2014."While its stock gained +10.4% on August 12 (the first trading day after the strategic alternatives weekend announcement), the total stock price decline from August 9 to November 5, 2013 was -33.4%. A similar pattern of events occurred to E*Trade Financial Corp, which, following its July 22, 2011 announcement of strategic alternatives, announced on November 11 that it had concluded its review. While the board officially stated that the company should continue to execute its existing strategic plan as a stand-alone entity, anonymous sources elaborated that the failed review hadn't resulted in any substantive talks with potential buyers for a deal. Shares were down -5.3% on heavy volume, as investors reacted to the revelation that E*Trade appeared to be unsaleable. These examples suggest that the costs of voluntary disclosure on firm value materialize as investors gradually realize that, if no deal emerges over time, the firm is unsaleable and unsalvageable at its current price. Shares slide as prospects for a deal gradually dim. Following these case examples, I hypothesize that there is a negative valuation cost for disclosing firms that fail to sell themselves.

3.3 Determinants of disclosure hypothesis

My third hypothesis makes predictions about the determinants of strategic alternatives disclosures. A related literature has examined the financial, investor, and governance characteristics of actual target firms (Palepu, 1986; Comment and Schwert, 1995; Agrawal and Jaffe, 2003; Raman, Shivakumar, and Tamayo, 2013). However, the type of companies putting themselves up for sale versus the type of companies that become actual targets stem from two different selection processes. Using the strategic alternatives sample, I am able to characterize the self-selected potential target firms and provide insight into target motives for M&A. I hypothesize that disclosure is associated with relatively poor financial performance (based on fundamental performance and prior stock returns), poor future prospects (based on market-to-book ratio and investment), and poor information environment (based on analyst following), high institutional ownership (based on blockholders' and activists' ownership), and golden parachute provisions.

H3: The probability of disclosure is decreasing in firm performance, investment, and insider ownership; the probability of disclosure is increasing in information asymmetry, institutional ownership, and poison pill provisions.

There is tension as to what types of companies seek to be acquired and whether companies market-time their valuations. Prior papers looking at the pre-merger announcement performance of acquired firms find mixed evidence whether mergers follow periods of positive or negative returns to the target (for a review, see Agrawal and Jaffe, 2003). Disclosing firms may be poorly-performing companies, or they may be well-performing companies that are market-timing their high-growth valuations before (the market realizes that) they will transition to a steady or declining state, possibly due to increased competition and business pressures. As

an example of a poor performer, Borders Group Inc.'s market capitalization had declined from $2.5 billion in March 1998 to under $1 billion in February 2000. It then announced on March 3, 2000 that it was exploring strategic options and that it believed its stock was significantly undervalued. As an example of a well-performing firm, PetSmart Inc., after it beat quarterly earnings benchmarks, reported sales growth and announced its acquisition of Pet360, announced strategic alternatives on August 19, 2014. The announcement appeared timed to capitalize on PetSmart's peak valuation and cited mounting business pressures and pressure from activist Jana Partners LLC. Therefore, documenting the financial and performance characteristics of firms seeking strategic alternatives is an empirical endeavor.

Institutional and activist ownership may also be associated with strategic alternatives. Brav et al. (2008) find that activists are involved in turnaround situations, and many disclosures like the PetSmart Inc. example cite activism as a catalyst for seeking strategic alternatives. Blockholders are regarded as corporate monitors to reduce agency costs between managers and shareholders (Shleifer and Vishny, 1986), but there is mixed empirical evidence whether they play an effective role in improving firm performance (Holderness, 2003).

Firms seeking strategic alternatives may have a history of mismanagement, in light of shareholder allegations that the management and board have failed to generate value for shareholders. It is possible that firms that should seek and disclose strategic alternatives are not doing so because the management and board are entrenched. The existence of a golden parachute provision, although conventionally viewed as an entrenchment tactic, could incentivize management to explore the sale of the company and disclose strategic alternatives. A golden parachute payout offsets the loss borne by managers in a change-in-control transaction and is thus a predicted determinant of disclosure.

Chapter 4

Voluntary Disclosure Model with Cost and Benefit Parameters

I adapt a general voluntary discretionary disclosure model using a signaling framework to my setting of strategic alternatives disclosures. As in extant models, the firm's objective function is to maximize value when it is faced with a binary disclosure choice. In contrast to the "fully unraveling" models of Grossman and Hart (1980) and Grossman (1981), a partial disclosure equilibrium model is more realistic. In a market with voluntary disclosure of strategic alternatives, investors are not sure whether managers are not disclosing due to any of the three reasons: because the private information is unfavorable, because disclosure-related costs are high (Verrecchia, 1983), or because the manager may not be endowed with private information (Dye, 1985; Jung and Kwon, 1988). Furthermore, voluntary disclosures of strategic alternatives are not merely foreknowledge; they can create a better purchase price for shareholders if the information reaches more buyers or a buyer that has maximum synergies with the purchased firm (Shavell, 1994; Pae, 2002).

4.1 Assumptions applicable to this setting

This section attempts to bridge the gap between theory and reality by explaining how the model's attributes are realistically applicable to the decision to disclose strategic alternatives. Verrecchia's (2001) concerns about three stylized assumptions of discretionary disclosure models are realistically applicable to this setting: 1. Reliance on an exogenous proprietary cost and/or uncertain information endowment to ameliorate the adverse-selection problem; 2. Reliance on truthful reporting; and 3. Reliance on the decision maker's objective function as one of maximizing firm value. The three aforementioned stylistic assumptions and more are realistically satisfied my setting, a key advantage. Taken piecemeal from prior discretionary disclosure literature, the following features are applicable to my setting.

(i) *Disclosure is costly.* Costs could reflect: a negative signal that the firm desperately needs to be salvaged through a sale; the leakage of proprietary information through solicitation materials, negotiations, data rooms and ineffective NDAs; dysfunctional relationships with the firm's stakeholders, including employees, customers and business partners; and investors' gradual realization that, if no buyer emerges over time, the firm is unsaleable.

(ii) *Disclosure is truthful.* The disclosure of strategic alternatives requires commitment of resources to evaluate and respond to inquiries. In addition, these disclosures are *ex-post* verified to be credible, for the group as a whole.

(iii) *The firm's objective function is value maximization.* Strategic alternatives are undertaken primarily to maximize value for shareholders, as stated by the disclosures themselves.

(iv) *The private information signal is imperfect.* When the board of directors, management and financial advisors perform an assessment to evaluate the possible value of the firm before undertaking and disclosing strategic alternatives, their assessment cannot determine true firm value and any transactional outcome with perfect precision.

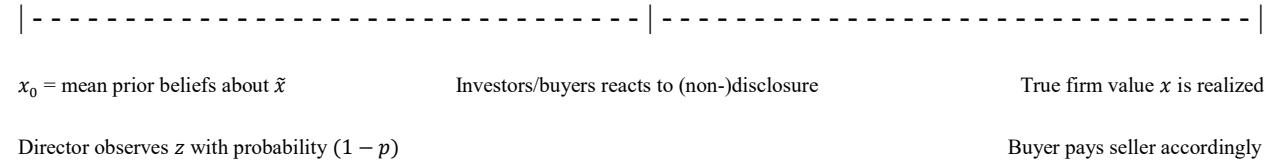
(v) *In the absence of disclosure, investors are not sure whether the firm received a private signal about firm value.* Not all firms would have engaged the board and financial advisors to assess the value of the firm and obtain private information. Firms without private information would not disclose strategic alternatives.

(vi) *There are real valuation benefits of disclosure.* Public disclosure can advertise the availability of a company and allow the disclosing firm to access more diverse pools of capital. With more bidder interest, the disclosing firm is more likely to be taken over, particularly by a buyer that places a higher value on the selling firm and its synergies.

(vii) *A single-period model fits the one-period disclosure decision.* Disclosures of strategic alternatives are rare, one-off events, so the firm realistically makes one choice, to disclose or not to disclose, and then the firm's terminal value is realized at the period-end. Compared to sticky, periodic types of voluntary disclosure such as earnings forecasts or conference calls which are likely to be influenced by an explicit or *de facto* pre-established disclosure policy, the disclosure decision of strategic alternatives is less likely to be influenced by last period's disclosure, as one likely did not exist, or by a pre-committed policy to disclose strategic alternatives, as the event's rarity would elude any formal disclosure policy regarding this preliminarily deliberation.

4.2 The model

In this model, there are two parties, sellers and buyers (or investors) of an asset which is an entire firm. Following the extant voluntary disclosure models, I assume market participants have risk neutral preferences and a zero discount rate. I assume that the sell-side director's objective function is to maximize the price of the firm, and buyers' probabilistic beliefs about silent sellers' types are correct. At the beginning of this single-period model, all market participants share a common prior belief regarding the period-end value of the firm, denoted $\tilde{x}$ with mean x_0. With probability $1-p$, the director may be endowed with some private signal concerning the true value of the firm. The director can credibly disclose the signal or not, basing his decision on the information's effect on the price of the firm while simultaneously considering disclosure costs and the expected value creation from disclosure. He may disclose that the company is seeking strategic alternatives to maximize shareholder value, but face aforementioned disclosure costs that ultimately compromise firm valuation. Disclosure may potentially create real value by attracting a better bid. Since heterogeneous bidders have varying degrees of synergies they would extract from the same firm, increasing interest from more bidders would result ultimately in a higher takeover premium. Next, traders form expectations which determine the stock price on the basis of whether there was a disclosure. At the end of the period, the true value x of the firm is realized, which incorporates any value-enhancement due to the disclosure.



Chooses whether or not to disclose z

The true value of the firm realized at the end of the period is $\tilde{x}$, and is normally distributed. The prior beliefs are represented by a probability density function $f(\tilde{x})$ with mean x_0. $f(\tilde{x}) > 0$ for all $\tilde{x} \in [-\infty, +\infty]$. $F(\tilde{x})$ is the cumulative distribution function (cdf) of f.

With probability $(1-p)$, the director may be endowed with a private signal $z \equiv x + \varepsilon$, where $\varepsilon \sim N(0, \sigma_\varepsilon^2)$ represents white noise. If the director receives a private signal z and discloses z, let c = disclosure cost which is a constant for simplicity and consistency with Verrecchia (1983). Following disclosure, the price of the firm adjusts to μ, the posterior mean of $\tilde{x}$ given z, which is a convex combination of signal z and the prior mean x_0 of $\tilde{x}$:

$$\mu \equiv E[\tilde{x}|z] = \frac{\sigma_\varepsilon^2}{\sigma_x^2 + \sigma_\varepsilon^2} z + \frac{\sigma_\varepsilon^2}{\sigma_x^2 + \sigma_\varepsilon^2} x_0$$

If $\mu = E[\tilde{x}|z] < 0$, then no disclosure would occur; hence, this case is ignored.

Observing a disclosure of z, the ultimate buyer would be willing to pay $E[\tilde{x}|z]E[m_k] = \mu\, E[m_k]$ which is the gross return of the firm to the type k buyer. m_k is a valuation multiple by the ultimate buyer which is always greater than or equal to 1. For example, $m = 1$ means that the buyer values the seller's assets-in-place at their current stand-alone value, whereas, $m > 1$ means that the buyer will have higher productivity with the seller's assets. $E[m_k] > 1$ may reflect unbiased or biased (i.e. overconfident, empire-building buyer) estimates of future productivity, but any bias nonetheless translates to value for the selling firm. I denote $E[m_k] = \overline{m}_k$ as the valuation multiple given disclosure. If the seller can sell the firm for $\overline{m}_k$, then the seller's payoff with voluntary disclosure equals

$$E[\tilde{x}|D] = \mu\overline{m}_k - c. \qquad (1)$$

Following Jung and Kwon (1988), investors correctly perceive the following mutually exclusive scenarios: (i) no private signal is received by the director and hence no disclosure, with probability p; (ii) a private signal is received but not disclosed, with probability $(1-p)F(y)$, where y is some threshold of disclosure $y \in [\underline{x}, \overline{x}]$, such that an information signal below y is unfavorable, and $F(y) = \Pr(\tilde{z} < y) = \int_{-\infty}^{y} dF(\tilde{z})$; or (iii) a private signal is received and disclosed, with probability $(1-p)(1-F(y))$. If informed directors receive a signal that leads to an unfavorable posterior belief about x (i.e., $\mu < y$), they mimic uninformed directors, and hide behind non-disclosure behavior.

Non-disclosing sellers are comprised of sellers who do not have private information and sellers who withhold information due to unfavorable private information or high disclosure costs. As in Verrecchia (1983), directors will not disclose if their payoff with non-disclosure is higher than their payoff with disclosure, if $\mu E[m_k] - c \leq E[\tilde{x}|ND]$, or in other words, if disclosure costs are prohibitively higher than the benefits of disclosing, $c \geq \mu E[m_k] - E[\tilde{x}|ND]$. $\mu E[m_k] - E[\tilde{x}|ND]$ represents the seller's gross benefit of disclosing.

Observing non-disclosure, investors will revise their probabilities to:

$$E[\tilde{x}|ND] = \frac{pE[\tilde{x}}{p + (1-p)\emptyset(y)} + \frac{(1-p)\emptyset(y)E[\tilde{x}|\tilde{z} < y]}{p + (1-p)\emptyset(y)}$$

$$= \frac{px_0}{p + (1-p)\emptyset(y)} + \frac{(1-p)\int_{\underline{\mu}}^{y} \mu d\emptyset(\mu|.)}{p + (1-p)\emptyset(y)}$$

(2)

where $\emptyset(\mu|.)$ is the cdf of $\varphi(\mu|.)$. $\emptyset(\mu|.) = \int_{\underline{\mu}}^{\mu} \varphi\,(w|.)dw$

and where $\varphi(\mu|.)$ is the normal density function of $\tilde{\mu}$. $\varphi(\mu|.) = \frac{1}{\sigma_\mu\sqrt{2\pi}}\exp[-\frac{(\mu-x_0)^2}{2\sigma_\mu}]$.

If $E[\tilde{x}|ND] < 0$, the firm will not be sold, so I only focus on the case where $E[\tilde{x}|ND] > 0$ and the firm is sold given no disclosure. It is clear from (2) that $E[\tilde{x}] < E[\tilde{x}|ND] < E[\tilde{x}|\mu < y]$. The seller would be indifferent between disclosure and non-disclosure when equality holds between (1) and (2).

$$\mu\,\bar{m}_k - c = E[\tilde{x}|ND]$$

$$\mu\,\bar{m}_k - c = \frac{px_0}{p + (1-p)\emptyset(y|.)} + \frac{(1-p)\int_{\underline{\mu}}^{y} \mu d\emptyset(\mu|.)}{p + (1-p)\emptyset(y|.)}$$

A rational expectations equilibrium solution exists if there is a positive threshold $y \in [\underline{\mu}, \bar{\mu}]$, where

$$y\,\bar{m}_k - c = \frac{px_0}{p + (1-p)\emptyset(y|.)} + \frac{(1-p)\int_{\underline{\mu}}^{y} \tilde{\mu}\, d\emptyset(\mu|.)}{p + (1-p)\emptyset(y|.)}$$

The integral above simplifies to, using integration by parts,

$$\int_{\underline{\mu}}^{y} \tilde{\mu} d\emptyset(\mu|.) = \mu\emptyset(\mu)|_{\underline{\mu}}^{y} - \int_{\underline{\mu}}^{y} \emptyset(\mu|.)d\mu$$

$$= y\,\emptyset(y|.) - \int_{\underline{\mu}}^{y} \emptyset(\mu|.)d\mu$$

Using algebraic manipulation, I solve for the disclosure threshold y*.

$$(y\,\bar{m}_k - c)\big(p + (1-p)\emptyset(y|.)\big) = p\,x_0 + (1-p)\,y\,\emptyset(y|.) - (1-p)\int_{\underline{\mu}}^{y} \emptyset(\mu|.)d\mu$$

$$y\,\bar{m}_k\big(p+(1-p)\emptyset(y)\big)-c\big(p+(1-p)\emptyset(y|.)\big)=p\,x_0+(1-p)\,y\,\emptyset(y|.)-(1-p)\int_{\underline{\mu}}^{y}\emptyset(\mu|.)d\mu$$

$$y\{\bar{m}_k\big(p+(1-p)\emptyset(y)\big)-(1-p)\;\emptyset(y|.)\}=cp+c(1-p)\emptyset(y|.)+p\,x_0-(1-p)\int_{\underline{\mu}}^{y}\emptyset(\mu|.)d\mu$$

$$y^*=\frac{cp+c(1-p)\emptyset(y|.)+p\,x_0-(1-p)\int_{\underline{\mu}}^{y}\emptyset(\mu|.)d\mu}{\bar{m}_k\big(p+(1-p)\emptyset(y|.)\big)-(1-p)\;\emptyset(y|.)}$$

(3)

Equation (3) has a solution if and only if $h(y)=\;y-f(y)=0$ for some y^*. For $y=\underline{x}$, $h(\underline{x})<0$ because $f(\underline{x})>0$. And for $y=\overline{x}$, $h(\overline{x})<0$ because $f(\overline{x})>0$. Since $h(\underline{x})<0$, $h(x)<0$, and $h(y)$ is a continuous function of y, $h(y)$ must equal zero for some y^* in the interval $(\underline{x},\overline{x})$. The solution is unique if the function $h(y)$ is monotonically increasing.

Equation (3) is equivalent to the solution in Pae (2002) when $\bar{m}_k=1$ and $c=0$, meaning there is no value creation from the disclosure (i.e., $E[\tilde{x}|z]R(k)=E[\tilde{x}|z]=\mu$) and disclosure is costless. The disclosure threshold in Pae (2002, p. 293) is:

$$y^{Pae}=x_0-\frac{(1-p)}{p}\int_{\underline{\mu}}^{y}\emptyset(\mu|.)d\mu$$

If we add disclosure costs $c>0$, but $\bar{m}_k=1$, then the disclosure threshold would be:

$$y^B=c+c\frac{(1-p)}{p}\emptyset(y|.)+x_0-\frac{(1-p)}{p}\int_{\underline{\mu}}^{y}\emptyset(\mu|.)d\mu$$

With non-zero disclosure costs, threshold y^B is higher than threshold y^{Pae}. Also, $\frac{\partial y^B}{\partial c}>1$, meaning that for each additional unit of disclosure cost, the disclosure threshold increases by more than one unit. Comparing y^* from equation (3) to y^B, when $\bar{m}_k>1$, $y^*<y^B$, which is consistent with the intuition that if disclosure enhances value, then the threshold of disclosure is lower and more firms will disclose. Moreover, as $\bar{m}_k$ increases (the synergistic buyers and purchase price obtained with disclosure are expected to be very value-enhancing), the denominator in (3) increases, and threshold y^* decreases, and the firm is more likely to disclose.

In summary, this single-period model formulates how real valuation benefits and disclosure costs impact the firm's decision to announce strategic alternatives when investors are uncertain of private information endowment and when the private information signal about firm value is imperfect. Ceteris paribus, the disclosure threshold is function of costs in the numerator and benefits in the denominator. This theoretical formulation of the disclosure choice motivates my empirical tests to show the existence of costs and benefits associated with disclosure, while holding all fundamental firm characteristics constant.

Chapter 5

Data and Sample Construction

From a population of firms that are seeking strategic alternatives, some publicly announce and some do not. The voluntary disclosure choice is the partitioning variable of interest. While the exploration of strategic alternatives typically initiates the M&A sale process, a company may also start the exploration of strategic alternatives after it has received an informal indication of interest or a formal unsolicited bid. Whenever in the process the firm is seeking strategic alternatives, it then faces the disclosure decision. It is plausible that control firms that are eventually acquired or liquidated were seeking strategic alternatives, but did not disclose it. It is unobservable whether control firms that are not subsequently acquired nor liquidated were indeed seeking strategic alternatives privately.[8] I use entropy balancing to construct a comparable control group that, based on observables, is as likely to be seeking strategic alternatives and could have disclosed, but chose not to. Entropy balancing is described in the research design section.

To construct my sample of voluntary disclosures, I search on DirectEdgar for 8-K Filings (including Exhibit 99.1) and on Factiva for news releases of companies announcing strategic alternatives. News sources include The Financial Times, New York Times, Dow Jones Institutional News, Business Wire, PR Newswire, The New York Post, The Wall Street Journal, The American Banker, Theflyonthewall, Bloomberg, The Boston Globe, MarketWatch and Reuters News. I search for various combinations of the following keywords and key phrases: review*, assess*, evaluat*, consider*, strategic, alternatives, options, sale of the company, merger of the company, retained, engaged, advisor, special committee, board, maximize, enhance, shareholder, value. I also include observations from SDC of target firms that are "seeking a buyer" after manually verifying the related 8-K or press release and applying my sample exclusion criteria. I manually review each announcement to exclude releases that are false positives, announcements of an acquisition, merger or tender offer, announcements where only a division or limited assets are up for sale and announcements of fire sales during bankruptcy proceedings. See Appendix 2 for an example of a strategic alternatives announcement. I hand-collect announcements where the disclosing firm has a Compustat GVKEY and CRSP PERMNO. My final sample contains 990 disclosures from 1990 to 2014 that are able to be merged with Compustat and CRSP data in the correct periods. To the extent that my manual collection randomly missed some strategic alternatives observations and misplaced them in the control group, my results are likely to be understated.

While disclosing or not disclosing is at first a dichotomous choice, there is variation in the disclosure content. The announcement may specify the "sale of the company" or "merger of the company" (*SALEWORDS*); qualify the alternatives as "financial" or "financing" or specify "refinancing," "restructuring" or "recapitalization" as potential alternatives (*FINWORDS*); state that the company has received preliminary indications interest or is exercising its *Revlon* duties in response to receiving an non-binding unsolicited offer (*EXISTINTEREST*); state that the company has engaged a financial or legal advisor (*ADVISOR*); include confounding earnings

[8] Appendix 1 describes how the disclosure or non-disclosure of strategic alternatives fit into the M&A sale process and future acquisition and liquidation outcomes.

news or guidance in the announcement or issue an earnings announcement in the surrounding three days (*CONFOUNDEARN*); or include confounding news of management or director turnover on the same day (*CONFOUNDTURN*).

Relative to the strategic alternatives announcement date of firm *i*, the most recent Compustat quarterly variables are subscripted *iq*. The most recent CRSP stock market data are subscripted *im* if calculated from the monthly file (*iy* for 12-month returns) or *id* if calculated from the daily file. The most recent monthly governance variables from ISS (formerly RiskMetrics), shareholder activism variables from AuditAnalytics and analyst estimates from I/B/E/S are denoted *im*. I require non-missing total assets ($ASSETS_{iq}$), market value of equity ($MKVAL_{iq}$), market-to-book (MTB_{iq}), leverage (LEV_{iq}), year-over-year change in quarterly return-on-assets (ΔROA_{iq}), net income deflated by average assets (ROA_{iq}), cash flows from operations (CFO_{iq}), cash flows from investing activities (CFI_{iq}), free cash flows (FCF_{iq}), operating accruals ($OPACC_{iq}$), dividend yield (DVP_{iq}), 12-month buy-and-hold returns (RET_{iy}) and annual market beta ($BETA_{iy}$). Variable definitions are described in Appendix 3, and the measurement windows for annual, quarterly, and monthly variables are described in Appendix 4.

In addition to my sample of 990 disclosure observations (*DISC*=1), I use 64,421 control observations (*DISC*=0). The control group is constructed from other firm-years from the same industry-years as the disclosing firms, where industry is defined using the Fama-French 48 industry classification. No firm appears in the sample more than once every four quarters, to avoid the possibility that a firm is categorized as a disclosing firm in one quarter and a control firm in an adjacent quarter. Each control observation is randomly assigned a pseudo-announcement date, following the month and year distributions of actual announcement dates. Based on the pseudo-announcement dates, data about fundamental characteristics are taken from the most recent quarter end. Data about market, analyst, and governance characteristics are taken from the end of the previous month.

Each disclosure or control firm is either acquired, liquidated, or does not experience an outcome. The future transactional outcome of a firm is evaluated relative to the announcement or pseudo-announcement date. I consider completed acquisitions, where the bidder has successfully obtained control, and liquidations, including bankruptcy. I identify completed acquisitions and their completion dates using three sources: Compustat's deletion codes for an acquisition or merger (code 01), reverse acquisition (code 04), leveraged buyout (code 06), and take-private (code 09); CRSP's delisting code for mergers (first digit 2); SDC Platinum's "Date Effective." I also use SDC Platinum to obtain offer and bidder details, such as the number of bidders ($NUMBIDDERS_{it}$), the bidder's three-day return surrounding SDC's "Date Announced" ($BIDDER3DAYRET_{it}$), the percentage of cash consideration ($PERCCASH_{it}$), and the percentage of stock consideration ($PERCSTOCK_{it}$). The SDC screens I apply are: 1. Target is a public U.S. company. 2. "Deal type" is a Disclosed value M&A, Undisclosed value M&A, LBO, Tender offer, Acquisition of remaining interest or Privatization. 3. "Deal form" is a Merger, Acquisition, Acquisition of assets, Acquisition of majority interest or Acquisition of remaining interest. 4. The percent of Shares Acquirer is Seeking to Own after Transaction is 99-100. 5. The percent of Shares Acquirer is Seeking to Purchase in Transaction is 50-100. 6. The deal is announced between 1/1/1990 – 12/31/2015. However, SDC is known to be erroneous and incomplete (Barnes, Harp and Oler, 2014). Some firms that CRSP and Compustat record as acquired are not

covered by SDC or are not recorded as completed acquisitions by SDC. I identify completed liquidations and their completion using two sources: Compustat's deletion codes for bankruptcy (code 02), liquidation (code 03); CRSP's delisting code for Liquidation (first digit 4). CRSP's Delisting Codes for Dropped (first digit 5) and Expiration (first digit 6) are only used if the observation is not already identified as acquired.

[FIGURE 1]

Figure 1 graphs the time-series distribution of 990 strategic alternatives disclosures against the time-series distribution of completed takeovers experienced by the entire population of CRSP and Compustat firms. The two series appear correlated, as one would expect a more active M&A market to prompt more firms to put themselves up for sale, and more firms up for sale to lead to a more active M&A market.

[FIGURE 2]

Figure 2 Panel A shows the distribution of the Fama-French 12 industries of the disclosure group and control groups. Before entropy balancing, the proportion of control observations in each industry is dissimilar to the proportion of disclosure observations in each industry. However, after entropy-balancing, the control group does have the same industry distribution as the disclosure group. Figure 2 Panel B shows the distribution of calendar years of the disclosure group and control groups. Before entropy balancing, the proportion of control observations in each year is dissimilar to the proportion of disclosure observations in each year. However, after entropy balancing, the control group does have the same calendar year distribution as the disclosure group. Figure 2 Panel C shows that the monthly distribution of the control group's pseudo-announcement dates are similar to the monthly distribution of the disclosure group's announcement dates. The similar industry, year, and month distributions should mitigate confounding effects of M&A merger waves and other industry- and time-varying market conditions.

[TABLE 1]

Table 1 presents the empirical distributions of key variables of the pooled sample of 65,411 observations from 1990 to 2014. I require that market capitalization (*MKVAL*), market-to-book ratio (*MTB*), leverage (*LEV*), total assets (*ASSETS*), most recent quarter's net income over assets (ROA_{iq}), most recent quarter's cash flow from operations (CFO_{iq}), most recent quarter's free cash flow (FCF_{iq}), most recent quarter's operating accruals ($OPACC_{iq}$), and prior 12-month returns (RET_{iy}) are non-missing. Intangibles (*INTAN*) and dividend yield (*DIVYIELD*) are filled in to be zero if missing. All variables except future buy-and-hold returns are winsorized at the 1 and 99 percent tails.

[TABLE 2]

Table 2 presents the Pearson and Spearman rank correlations for the pooled sample. On a univariate basis, disclosure (*DISC*) is associated with smaller firm size with regard to market capitalization (*MKVAL*) and total assets (*ASSETS*), lower growth prospects with regard to the

market-to-book ratio (*MTB*), higher leverage (*LEV*), lower changes in return on assets (*ΔROA*), lower net income (*ROA*), lower operating accruals (*OPACC*), lower CAPM beta (*BETA*), lower prior and future 12-month returns (RET_{iy} and RET_{iy+1}). These univariate relations provide a presupposition that firms that disclose strategic alternatives are poorly-performing firms with bleak future prospects.

5.1 Three additional samples

While my analyses mainly employ the 990 disclosure observations (*DISC*=1) and 64,421 control observations (*DISC*=0), there are three alternative samples I use to provide additional insight and confidence in my findings.

- *Rumor group.* I collect 150 observations and the announcement date when firms experience involuntary disclosure of strategic alternatives, through a rumor or media leak. These news articles are identified on Factiva using key phrases: sources say, according to * familiar with the matter. If the results of the voluntary disclosure group are not different from the results the rumor group, then the results are likely to be causal effects rather than endogenous outcomes.
- *Discontinuation group.* I collect 50 observations and the announcement date when a firm issues a disclosure discontinuing the evaluation, or rumored evaluation, of strategic alternatives. The market reaction to discontinuing strategic alternatives provides confidence that the market reaction to announcing strategic alternatives is not spurious or driven by a confounding event. Particularly, in contrast to a positive price reaction to a strategic alternatives announcement that is supposed to maximize firm value, a negative price reaction is expected and observed to announcements that terminate the option to maximize firm value.
- *One-to-one matched control group.* I construct an alternate control group of 990 control observations (*DISC*=0) drawn from the same Fama-French 48 (FF48) industry and year. For each disclosing observation, I select the matched control firm based on the closest total assets (*ASSETS*) that is in the same FF48 industry, year, and market-to-book quartile.

Chapter 6

Empirical Design and Results

6.1 Addressing selection

The main empirical challenge of this paper is controlling for selection into disclosure when analyzing outcomes. The observed disclosure of strategic alternatives is a result of the firm's unobservable decision-making process, after weighing the costs and benefits. The costs and benefits are consequences of disclosure and inputs to the disclosure decision. Consider a firm that faces the disclosure decision. The firm estimates the valuation benefits and costs it faces (possibly by observing peer firms that previously disclosed and experienced consequences, positive or negative), which then informs its own disclosure choice. Since voluntary disclosure is discretionary by definition, an exogenous shock to mandate voluntary disclosure is not conceivable. If news is mandated or involuntarily leaked, then by nature, it is not voluntary. The impossibility of observing a pure causal effect of voluntary disclosure is recognized in a summary paper by Leuz and Wysocki (2015). "Due to the voluntary nature of the variation, [voluntary disclosure studies] provide at best estimates for the treatment effect on the treated, rather than for the average treatment effect, which is what would be most relevant to policymakers and regulators. The primary role of studies using variation from firms' choices is therefore to illustrate potential costs and benefits from corporate disclosure and reporting activities." In the best case scenario, I document an average treatment effect on the treated, not an average treatment effect.

The selection into disclosure poses an omitted variable problem, which can be mitigated imperfectly by controlling for selection. In general, absent an exogenous shock to voluntary disclosure, researchers cannot conclude that observed consequences are causal and represent the average treatment effect. However, researchers can control for observable traits and, by extension, unobservable traits are linear functions of observable traits. In this paper, I acknowledge that the disclosure of strategic alternatives may be comingled with some unobservable traits, namely, the intention or ability of the firm to sell itself. However, if a suspected correlated omitted variable, such as intention or ability, were to drive the firm value cost and benefit results, then the omitted variable would have to simultaneously bias upward future returns (or benefits) for subsequently acquired firms and bias downward future returns (or costs) for subsequently unsold firms, which I deem unlikely.

Controlling for selection also allows me to distinguish my finding of positive takeover-related returns following disclosure from a related literature's finding that a target's willingness to sell is negatively associated with returns to target shareholders. Aktas, De Bodt, and Roll (2010) examine a large sample of *completed* M&A one-to-one negotiations and conclude that the target's willingness to sell, as proxied by either target initiation of the deal or firm leverage, weakens its bargaining power and results in a lower takeover premium. De Bodt, Cousin, and Demidova (2014) find that target firms that initiate the transaction or choose a formal auction process receive lower bid premia. Their findings are intuitive that firms with high leverage and

that are desperate for a sale cannot command a higher takeover premium compared to healthier, non-desperate target firms.[9] In contrast, my study controls for selection so that desperate, high-leverage firms that disclose are compared to a group of equally desperate, high-leverage firms that do not disclose. Conditional on a desperation and poor firm condition, I hypothesize and find that there are valuation benefits to disclosing. This is intuitive, because otherwise we would not observe firms choosing to disclose strategic alternatives. In fact, to the extent that voluntary disclosure of strategic alternatives is biased by any negative *effect* of willingness-to-sell on takeover price, my result of higher takeover-related returns for disclosers would be understated.

6.2 Entropy balancing and controls

The analyses of the determinants and consequences of disclosure exploit differences between disclosing firms and control firms as the counterfactual benchmark. The primary inference issue is that, without any econometric correction, disclosure choice is potentially correlated with firm characteristics such that determinants and consequences erroneously attributed to disclosure could be driven by variation in some correlated omitted variable that is significantly different between the disclosing and control groups. Self-selection into the disclosure sample can be viewed as an omitted variable problem. Omitted variables can also be viewed as proxies for unobserved private information (Li and Prabhala, 2007).

To address this, I employ entropy balancing, a weighting method proposed by Hainmueller (2012) and operationalized by Hainmueller and Xu (2013), to create control counterfactuals. Entropy balancing assigns each control observation a weight such that a number of specified covariates are "balanced" by construction between the treatment and control groups, in expectation. Both indicator and continuous variables can be balanced.

Entropy balancing is currently the most stringent econometric technique to create a counterfactual control group based on multiple dimensions and has several advantages over one-to-one matching methods, including propensity score matching and coarsened exact matching. First, the one-to-one matching methods cannot match on exact values of multiple covariates; even coarsened exact matching involves a tradeoff between coarsening data into broad portfolios for matching, choosing the number of covariates for matching and loosing observations without a coarsened match. In contrast, entropy balancing achieves a large number of balanced covariates between the treatment and control groups. Second, one-to-one matching induces measurement error and volatility from using a single control observation matched with each treatment observation. In contrast, entropy balancing uses a composite synthetic control group combining multiple observations, which is less likely to introduce error and volatility on the control group side. Third, propensity score matching requires a correctly specified linear model—of which both correctness and linearity are unlikely to be obtained. In contrast, entropy-balancing does not impose a functional form nor require a model for the propensity. Fourth, any one-to-one matching entails repetitive balance checking until a satisfactory but often imperfectly-balanced control group emerges. In contrast, entropy balancing is a one-step algorithm that guarantees a balanced control group along the specified covariates. More details about entropy balancing

[9] Aktas et al. (2010) do not observe one-to-one negotiations that failed. De Bodt et al. (2014) use a sample of negotiations and auctions where only 5 percent of their sample are failed deals. Neither study observes firms that were willing to sell themselves but did not receive a bid.

assumptions and advantages are described in Hainmueller (2012) and Hainmueller and Xu (2013).

I use two entropy balancing schemes to weight the control sample depending on two goals throughout the analyses. Each of the 64,421 control observations (*DISC*=0) receive a weight $0 < w_i \leq 1$, where $\sum_{i=1}^{64,421} w_i = 990$, creating a synthetic control group worth 990 observations. The first set of weights (hereafter "industry- and year- balanced") assures that the composition of years and FF12 industries in the balanced control group are indifferent from those in the disclosure group. I use these weights when the test should control for the proportion of industries and years. For example, in order to infer that a determinant of disclosing strategic alternatives is having low earnings, the result should not be explained by different industry composition (e.g. more regulated industries with low earnings) or year composition (e.g. more bear market years) in the disclosing sample. Industry- and year- balancing also addresses the fact that M&A consolidation waves strike certain industries and certain years (Andrade, Mitchell, and Stafford, 2001). The second set of weights (hereafter "full entropy-balanced") additionally balances on the most recent quarter's market value of common equity ($MKVAL_{iq}$), market-to-book ratio (MTB_{iq}), leverage (LEV_{iq}), total assets ($ASSETS_{iq}$), seasonal change in return-on-assets (ΔROA_{iq}, calculated as $ROA_{iq} - ROA_{iq-4}$), net income over average assets (ROA_{iq}), sales revenue over average assets (REV_{iq}) when non-missing, operating income before depreciation over average assets (OI_{iq}) when non-missing, cash flows from operations over average assets (CFO_{iq}), free cash flows over average assets (FCF_{iq}), operating accruals over average assets ($OPACC_{iq}$), annual CAPM beta ($BETA_{iy}$), prior 12-month raw buy-and-hold returns (RET_{iy}), the most recent month's analysts' consensus EPS expectation ($ANALYSTEST_{im}$) when non-missing, institutional blockholder ownership as a percent of shares outstanding ($INSTBLKOWN\%_{im}$) when non-missing, insider ownership as a percent of shares outstanding ($SHARESHELD_{im}$) when non-missing. Full entropy-balancing is used when analyzing outcomes associated with disclosure, because by construction, *ex-ante*, the treatment and entropy-balanced control groups are not statistically different in terms of the specified firm characteristics.

In testing outcomes, I use the inverse Mills ratio to account for the endogenous selection into disclosure. The standard Heckman control approach and probit estimation used in calculating the ratio are discussed and presented in section 6.10 of this paper. In section 6.6.5 of this paper, I provide a robustness check where, instead of using the full entropy-balanced control sample of 64,421 observations, I use a one-to-one matched control sample of 990 observations. Each control firm is chosen to match each disclosure firm based on the closest total assets, within the same FF48 industry, year, and market-to-book quartile.

In particular, when testing long-window price reactions, it is important to control for certain firm characteristics that have been shown by prior literature to be associated with future return predictability, and those characteristics also happen to be associated with disclosure:

(i) Size, measured as *MKVAL* and *ASSETS*. It has been established that small firms earn abnormally high returns.
(ii) Market-to-book, measured as *MTB*. Stocks with very low market-to-book value ratios also earn abnormal returns.

(iii) Systematic risk, measured as $BETA_{iy}$. The commonly-used measure of risk is the CAPM beta, which represents the degree that a security's price variability cannot be diversified away. This systematic risk is related to expected returns and is priced in equilibrium.

(iv) Prior performance, measured as RET_{iy}. De Bondt and Thaler (1985) show mean reversion in cross-sectional stock prices. Losers show significant price reversals while reversals of winners should be smaller or nonexistent.

[TABLE 3]

Table 3 Panel A presents the summary statistics of key variables for the 990 disclosure observations (*DISC*=1) in the left-most column and 64,421 control observations (*DISC*=0) with various weighting schemes in the other columns. In order of presentation, the control group's summary statistics are presented without any weighting, with industry- and year- entropy balanced weights, and with full-entropy-balanced weights. Table 2 Panel B presents *t*-tests for the differences in means of key variables between the disclosing group and control group variations. 16 out of 17 firm characteristics, and the proportion of industry 1 are statistically different between the disclosing group and non-weighted control group, signifying that the control group would not serve as a reliable counterfactual as the control s are vastly different and the differences could drive results. Balancing the control firms based on industry- and year- proportions does not improve the balance of firm covariates, as 15 out of 17 firm characteristics are statistically different between the disclosers and industry- and year- balanced control group. However, with full-entropy balancing, all of the specified firm characteristics achieve covariate balance in means and standard deviations, by construction.

Table 3 Panel C presents the summary statistics of key variables for the 150 rumor observations, and *t*-tests draw distinctions between firms that voluntarily disclose strategic alternatives and firms that are the subject of involuntary disclosure.

6.3 Economic significance of strategic alternatives disclosures

[FIGURE 3]

I test whether strategic alternatives disclosures have information content by conducting an event study of daily returns, cumulative buy-and-hold daily returns, share turnover, and abnormal EDGAR filing downloads surrounding the announcement date. Figure 3 Panel A shows that the average return of disclosers on day zero is +3.8 percent, and days -1 and 1 also experience positive returns. The average [-1, +1] three-day return is +5.8 percent. Moreover, the subset of disclosers that are *ex-post* acquired experience even higher announcement returns. The disclosers' average buy-and-hold daily return in Panel B suggests that stock prices fully impound the news by day +1 and do not appear to drift in the short window. The cumulative buy-and-hold daily return is approximately +6.8 percent on average. The subset of disclosers that are subsequently acquired experience higher cumulative returns and positive returns as early as day -12 before the announcement. In Panel C, share turnover responds with a 2.6-fold increase, on average, and the subset of subsequently acquired firms experience even higher share turnover. Panel D shows a four-fold increase in abnormal information acquisition of SEC filings through

EDGAR, and subsequently acquired firms experience even more downloads of their filings. Abnormal EDGAR downloads is calculated as the number of 10-K, 10-Q, and 8-K downloads of firm *i* on day *d*, divided by the average number of 10-K, 10-Q, and 8-K downloads of firm *i* during the preceding 365 days. The heightened market reactions experienced by the *ex-post* acquired firms suggests that the market can at least partially predict which of the announcing firms will be subsequently taken over or that the firms that experience more profound market reaction and interest subsequently become takeover targets.

6.3.1 Economic significance of strategic alternatives rumors

[FIGURE 4]

Figure 4 examines the abnormal market reactions to involuntary disclosures of strategic alternatives, which are comprised of rumors and media leaks. This provides confidence that the abnormal market reactions attributed to voluntary disclosure of strategic alternatives in Figure 4 are not spurious or driven by confounding events, as rumors of strategic alternatives are similar news events that experience similar reactions. I find that the responses are similar, although more extreme for the rumor group. Figure 4 Panel A shows that the rumor date's return is 8.3 percent. Panel B shows that the cumulative [-12, +12] buy-and-hold return is +13.2 percent with +2.4 percent generated by day -1, possibly due to speculation or other positive news. Panel C shows that the rumor date's share turnover reaches 6 percent of shares outstanding. Panel D shows that abnormal EDGAR downloads is four times the firm's regular number of daily download, which is similar to the information acquisition spurred by voluntary disclosure.

6.3.2 Economic significance of strategic alternatives discontinuation announcements

[FIGURE 5]

Figure 5 examines the market reactions to announcements discontinuing strategic alternatives. Discontinuation announcements also provide news about a firm's intention regarding strategic alternatives. It provides the "opposite" news as voluntary disclosures of strategic alternatives and rumors about strategic alternatives, so price should move in the opposite direction. Panel A shows that the discontinuation announcement generates a -4.9 percent return. Panel B shows that the cumulative [-12, +12] buy-and-hold returns reflect positive news leading up to the disclosure date but reach -9.3 percent by day +1. Panel C shows that share turnover reaches 3.4 percent of shares outstanding on the disclosure date. Panel D shows that abnormal EDGAR downloads reach 4.5-fold the normal daily rate.

6.4 Testing the information content of disclosure

[FIGURE 6]

The informational role of voluntary disclosure is corroborated by the high information asymmetry surrounding the disclosing firms during the [-12, +12] months relative to the disclosure. Figure 6 Panel A shows that as early as 6 months before the disclosure, disclosing firms experience an increase in and higher level of bid-ask spread relative to their industry- and

year- peers. While bid-ask spread is not a covariate used in entropy balancing, Panel B shows that compared to full entropy-balanced control firms, the disclosing firms have an expected level of information asymmetry. Panel C shows that the subset of disclosing firms that are subsequently acquired have a lower level of and experience a greater decrease in information asymmetry.

[TABLE 4]

Evaluating stock price reaction and the increased rate of firm-specific information acquisition can provide evidence of the information content released and economic significance of the disclosure. Table 4 presents results from regressions of three-day announcement returns or abnormal EDGAR downloads on disclosure.

$$RET3DAY_{id} \text{ or } EDGAR_{id} = \beta_0 + \beta_1 DISC_{it} + \sum_{k=2}^{K} \beta_k controls_k + \varepsilon_{id}$$

Table 4 Panel A column (1) shows that the mean three-day return for non-disclosers is +0.3% while it is +5.8% for disclosers. While controlling for firm fundamentals, risk, and return characteristics in column (2), disclosure remains incrementally informative for stock returns. The impact of disclosure on abnormal EDGAR filings is estimated using maximum likelihood using the tobit model. A tobit regression is appropriate since the distribution of $EDGAR_{id}$ is left-censored at 0; the value of day *d*'s EDGAR downloads divided by the average number of downloads during the preceding 365 is strictly greater than zero. The use of an OLS regression with a limited dependent variable would produce biased coefficient estimates. Columns (3) and (4) present the results of tobit regressions with a specified lower bound at 0. Disclosure induces an economically and statistically significant rate of abnormal EDGAR downloads. In both specifications with or without control variables, disclosure is associated with an abnormal download rate of approximately 4 times the regular daily download rate (6.394–1.399 or 6.442–2.150).

Disclosure is at first a dichotomous choice. Moreover, disclosing firms must then decide the content and wording in the announcement, and the market may differentially react to cross-sectional variation in disclosure content. While the mean three-day announcement return is +5.8 percent, disclosures that present more positive or serious signals are likely to generate greater stock price reactions and information downloads. I investigate the effects of stating verbatim "sale or merger of the company" (*SALEWORDS*), naming an engaged financial or legal advisor (*ADVISOR*), and indicating existing interest (*EXISTINTEREST*). Some words may be bad signals, and generate lower stock price reactions. I investigate the effects of using words such as "financial alternatives," "restructuring," and "recapitalization." In Table 4, I regress the three-day return or abnormal EDGAR downloads on disclosure characteristics to investigate the differential effect of variations in announcement content.

$$RET3DAY_{id} \; or \; EDGAR_{id} = \beta_0 + \beta_1 SALEWORDS_{it} + \beta_2 FINWORDS_{it} + \beta_3 ADVISOR_{it} + \beta_4 CONFOUNDEARN_{it} + \beta_5 CONFOUNDTURN_{it} + \beta_6 EXISTINTEREST_{it} + \beta_7 RET_{iy} + \varepsilon_{id}$$

Results are presented in Table 4 Panel B. Column (1) shows that announcement returns are higher in the cross section for disclosures that state verbatim the "sale or merger of the company" (*SALEWORDS*), name an engaged financial or legal advisor (*ADVISOR*), and indicate existing interest (*EXISTINTEREST*). These disclosure characteristics appear to be interpreted by the market as reflecting a more serious strategic review with a greater likelihood of a takeover and receiving abnormal returns to shareholders. Disclosures that use financial words (*FINWORDS*) are interpreted as bad news, reflecting financial troubles and desperation to seek financial alternatives. Strategic alternatives bundled with earnings news or earnings forecasts (*CONFOUNDEARN*) or bundled with executive or director turnover news (*CONFOUNDTURN*) are associated with lower announcement returns. Column (3) suggests that while the mere announcement of strategic alternatives generates abnormal EDGAR downloads, none of the disclosure content traits is significantly associated with abnormal information acquisition.

$$RET3DAY_{id} \; or \; EDGAR_{id} = \beta_0 + \beta_1 ACQ1YR_{it} + \beta_2 LIQ1YR_{it} + \beta_3 RET_{iy} + \varepsilon_{id}$$

While disclosures may differentially signal varying degrees of positive information and the market reacts differentially (for stock prices, but not for information acquisition), the above regression explores whether variation in market reactions is associated with the actual *ex-post* outcomes. The results are presented in Table 4 Panel B. Columns (2) and (4) suggest that the stock market and information market is on average predictive of the firm's future outcome. Firms that experience greater stock returns and more abnormal EDGAR downloads at the time of the announcement are more likely to be acquired. Firms that experience more negative stock returns at the time of the announcement are more likely to be subsequently liquidated.

6.5 Testing the predictive ability of disclosure for future takeovers and liquidations

I test whether disclosure is an important signal in the market for corporate control, by evaluating whether disclosure predicts future transactions. Figure 7 Panel A depicts the proportion of disclosing firms that are acquired within two years after the announcement compared to the proportion of control firms that are acquired within two years after the pseudo-announcement. Panel B depicts the proportion of disclosing firms that are liquidated within two years after the announcement compared to the proportion of control firms that are liquidated within two years after the pseudo-announcement. Control firms are not entropy balanced Figure 7. In both panels, the disclosing firms experience an abnormally high rate of future takeovers and liquidations, and these results hold in regressions with an entropy-balanced control benchmark.

[FIGURE 7]

[TABLE 5]

Table 5 column (a) corroborates the results that after one (two) years, 31.5 (41.4) percent of disclosing firms were acquired, and that 9.6 (12.7) percent of disclosing firms were liquidated. Of the disclosing firms that were taken over within one year (*ACQ1YR*), 233 days was the mean number of days until delisting due to the takeover. Of the disclosing firms that were liquidated within one year (*LIQ1YR*), 173 was the mean number of days until delisting due to the liquidation. The rate of future takeovers and liquidations significantly dissipates after 1.5 years, as only 2.7 and 1.8 percent, respectively, of the disclosing sample are acquired (*ACQAFT1.5YR*) or liquidated (*LIQAFT1.5YR*) between months 18 and 24. Column (b) shows the proportion of the full entropy-balanced control group experiencing transactional outcomes, and serves as a benchmark for the frequency of normal takeovers and liquidations that one would expect in a sample of firms with similar firm characteristics use in entropy balancing. The abnormally higher proportion of disclosing firms experiencing takeovers within one year, two years, and between 1.5 and two years is statistically significant compared to the entropy-balanced control group, using two-tailed *t*-tests.

Column (c) presents the proportion the rumor group experiencing future takeovers and liquidations. The higher proportion of subsequent takeovers within one year and the shorter number of days until delisting due to takeover suggests that firms rumored to be seeking strategic alternatives are at more advanced stages in the sale process and more serious about completing a takeover compared to firms that voluntarily disclose strategic alternatives. The proportion of firms acquired within two years and between 1.5 and two years is not statistically different between the rumor and disclosure group. Rumor firms are significantly less likely than disclosure firms to be subsequently liquidated.

In Table 6, I estimate the maximum likelihood using probit regressions of the probability of obtaining a future transactional outcome (acquisition within one year, *ACQ1YR*, or liquidation within one year, *LIQ1YR*) on an indicator variable for disclosure (*DISC*), while controlling for firm covariates and using the full-entropy balanced weights on the control group.

$$P[OUTCOME_{it} = 1|X_1, DISC_{it}, controls;\ \beta_0, \dots, \beta_K] = \Phi(\beta_0 + \beta_1 DISC_{it} + \sum_{k=2}^{K} \beta_k controls_k)$$

$$OUTCOME_{it} = \beta_0 + \beta_1 DISC_{it} + \sum_{k=2}^{K} \beta_k controls_k + \varepsilon_{it}$$

where Φ is the probit link function and $OUTCOME_{it}$ is either $ACQ1YR_{it}$ or $LIQ1YR_{it}$.

[TABLE 6]

Probit assumes that the distribution on ε_{it} is a standard normal density.[10] Industry and year fixed effects are included to subsume the intercept and to capture takeover waves targeting certain industries in certain years. In column (1), the 1.102 coefficient on *DISC* is positive and

[10] Using logit instead does not change inferences. The Akaike's Information Criterion (AIC) and Bayesian Information Criterion (BIC) statistics from using probit and logit suggest that both probit and logit provide approximately equal "goodness-of-fit."

significant for predicting the probability of a future takeover (z=15.297). In column (2), the corresponding marginal effect of *DISC* means that a change from non-disclosure to disclosure, while all other variables are at their mean values, increases the probability of being acquired by 24.7 percent (z=18.849). In column (3), the 0.313 coefficient on *DISC* is positive and significant for predicting the probability of a future liquidation (z=4.685). In column (4), the corresponding marginal effect of *DISC* means that a change from non-disclosure to disclosure, while all other variables are at their mean values, increases the probability of being liquidated by 3.2 percent (z=4.154). These results are consistent with the market's interpretation of the disclosures' credibility, for the group as a whole, since disclosure is in fact associated with an increased probability of takeover.

6.6 Future return reflecting costs and benefits on firm value

The main pursuit of this paper is to evaluate whether empirical facts are consistent with the voluntary disclosure model where both firm value benefits and costs exist, thus explaining why we observe a threshold equilibrium. The hypothesis is operationalized as follows. If there is real value creation from disclosure, then disclosing firms' shareholders will receive more value given a takeover compared to the control firm's shareholders. In contrast, if there is no valuation benefit from disclosure, then there would not be excess takeover-related gains. On the cost side, if there are disclosure costs, then the positive price reaction from the strategic alternatives announcement will gradually dissipate and price will revert to below pre-announcement levels absent a takeover. If there are no disclosure costs, then the positive price reaction from the strategic alternatives announcement will gradually reverse and price will revert back to pre-announcement levels absent a takeover.

6.6.1 Future return measures

Every control firm from the same industry-year as a disclosure firm is assigned a pseudo-announcement date following the monthly distribution of actual announcement dates. Relative to the announcement date or pseudo-announcement date, three measures of future buy-and-hold returns are calculated. I recognize that long-window measurement for returns introduces noise, though a long window that extends through the completion of the acquisition or liquidation transaction can capture the full consequence of disclosure on firm value.

(i) *Buy-and-hold raw daily return*. $CUMDRET_{iy+1}$ is cumulated from day -12, to capture any pre-announcement leakage, to trading day +252 (equivalent to one year) following the announcement or pseudo-announcement date. The measurement window ends with the delisting return if the firm is acquired or liquidated in the interim.

(ii) *Buy-and-hold risk-adjusted monthly return*. RET_{iy+1}^{CAPM} is cumulated during the 12-month period from the beginning of month 1 to the end of month 12, where the announcement or pseudo-announcement date occurs during month 1. RET_{iy+1}^{CAPM} is calculated as returns = $\prod_{m=1}^{12}(1 + aret_{im})$, where $aret_{im} = ret_{im} - \hat{\beta}_{iy} r_m^{mkt}$.

(iii) $\hat{\beta}_{iy}$ is the CAPM beta estimated annually using 36 monthly observations of firm *i* during years *y*-1, *y*, and *y*+1: $(ret_{im} - r_m^f) = \alpha_{im} + \beta_{iy}(r_m^{mkt} - r_m^f) + \varepsilon_{im}$. Monthly market return r_m^{mkt} is the CRSP value-weighted monthly return including dividends. The delisting return is included in ret_{im} if applicable.

(iv) *Buy-and-hold risk-adjusted monthly return or terminal 12-month risk-adjusted returns*. $RET_{iy+1}^{CAPM,12}$ equals RET_{iy+1}^{CAPM} if firm *i*'s CRSP time series is not delisted before month 12. However, if the CRSP monthly return series ends within 12 months, then the terminal 12-month risk-adjusted return is used, which = $\prod_{m=T-12}^{T}(1 + aret_{im})$, where *T* is the last month where data is available on monthly CRSP. As above, $aret_{im} = ret_{im} - \hat{\beta}_{iy} r_m^{mkt}$.

The advantage of using the buy-and-hold raw return is that it reflects the actual return to shareholders, and the takeover premium is typically stated as a raw percentage. However, as Table 5 presents, disclosing firms are acquired 233 days, on average, after the announcement and disclosing firms are acquired 192 days on average after the pseudo-announcement. A potential concern of this raw measure is that the longer return window for acquired disclosing firms results in a higher raw return than for acquired control firms due including the on-average positive market return. To address the concern of using raw returns, I also use risk-adjusted RET_{iy+1}^{CAPM} which adjusts for the market component and CAPM beta risk.

To further check that higher future returns accruing to acquired disclosing firm shareholders is not due to the measurement window of disclosing firms capturing a greater fraction of the takeover-related returns, I also use $RET_{iy+1}^{CAPM,12m}$ which uses a 12-month return window for all observations. For observations that are delisted on monthly CRSP within one year of the announcement or pseudo-announcement date, $RET_{iy+1}^{CAPM,12m}$ equals the 12-month risk-adjusted returns from the terminal 12-month period. Therefore, returns for acquired disclosing firms and acquired control firms are both measured over the 12 months before delisting, and are also risk-adjusted.

6.6.2 Future return associated with disclosure and ex-post outcomes

[FIGURE 8]

Figure 8 presents the abnormal return to disclosure over the normalized one-year window, from day -12 to day +252 or the delisting date, if earlier. In Panels A and C, abnormal returns are the equal-weighted mean $CUMDRET_{iy+1}$ of disclosure group (*DISC*=1) minus the equal-weighted mean $CUMDRET_{iy+1}$ of the full entropy-balanced control group. The control group is full entropy-balanced so that industries, years, fundamental, return, and risk characteristics are distributionally similar to those of the disclosure group, in means and standard deviations. Panel B and D separately depict the equal-weighted mean $CUMDRET_{iy+1}$ of disclosure group (*DISC*=1) as solid line(s) and the equal-weighted mean $CUMDRET_{iy+1}$ of the full entropy-balanced control group as dashed line(s). Panels A and B show that the announcement leads to an initial premium for disclosing firms, but within one year, the premium

reverses and disclosing firms eventually underperform the control firms. Given disclosure, it appears that future negative price changes are predictable, which is puzzling in light of the efficient market hypothesis and the positive announcement reaction.

Figure 8 Panels C and D show that the subsample of firms that do not experience a subsequent transaction drives the negative return predictability for the disclosure group as a whole. Panel C shows the abnormal buy-and-hold returns of disclosers relative to control firms for each of the three following outcomes: those that are subsequently acquired within one year (*ACQ1YR*=1), those that are subsequently liquidated within one year (*LIQ1YR*=1), and those that are neither acquired nor liquidated within one year (*ACQ1YR*=0&*LIQ1YR*=0). Panel C suggests that the abnormal stock reaction is efficient for the acquired disclosing firms and for the liquidated disclosing firms, since the abnormal gains and losses are impounded at the announcement date and there do not appear to be abnormal returns after the announcement reaction. However, the disclosing firms that are neither acquired nor liquidated experience an initial positive return, followed by a gradual reversal of the valuation premium. At the end of the period, these no-outcome disclosing firms have suffered a net abnormal decline in value. It is interesting to note that the announcement return of the subsequently no-outcome disclosers is significantly lower than that of the subsequently acquired disclosers, suggesting that the market can partially, but not fully, distinguish between the disclosers' eventual outcomes. Panel D separately depicts the $CUMDRET_{iy+1}$ of the following six groups.

(i) Disclosing observations that are acquired within one year after the announcement +39.7%, in the green solid line.
(ii) Control observations that are acquired within one year after the pseudo-announcement +30.2% (full entropy-balanced), in the green dashed line.
(iii) Disclosing observations that do not have an outcome within one year after the announcement +0.6%, in the yellow solid line.
(iv) Control observations that do not have an outcome within one year after the pseudo-announcement +16.1% (full entropy-balanced), in the yellow dashed line.
(v) Disclosing observations that are liquidated within one year after the announcement -56.5%, in the red solid line.
(vi) Control observations that are liquidated within one year after the pseudo-announcement -47.8% (full entropy-balanced), in the red dashed line.

[TABLE 7]

Table 7 presents the mean and median values of $CUMDRET_{iy+1}$, analogous to those of the six groups depicted in Figure 8 Panel D. Table 7 shows that the mean return of the disclosers that were acquired compared to the mean return of the non-disclosers that were acquired (+39.7% vs. +30.2%) is statistically different (p=0.016), which suggests that a successful takeover is the conduit to capturing the valuation benefit from a strategic alternatives disclosure. Several potential mechanisms for the benefits of disclosure are tested in section 6.7. The mean return of no-outcome disclosing firms compared to the mean return of the no-outcome entropy-balanced control firms (+0.6% vs. +16.1%) is statistically different (p=0.000), which suggests that

disclosing firms unable to capture the valuation benefit via a takeover are faced with disclosure costs affecting firm value. Several potential mechanisms for the costs of disclosure are tested in section 6.8.

Figure 9 and Table 8 replicate the graphical and tabular exercises of Figure 8 and Table 7, respectively, but use risk-adjusted future returns, RET_{iy+1}^{CAPM}. In Table 8, the mean returns of the disclosers that were acquired compared to the mean returns of the non-disclosers that were acquired (+32.1% vs. +24.7%) is statistically different (p=0.039). The mean returns of no-outcome disclosing firms compared to the mean returns of the no-outcome entropy-balanced control firms (-7.3% vs. +8.3%) is statistically different (p=0.000). Thus, using RET_{iy+1}^{CAPM} provides consistent results.

Table 9 replicates the tabular exercise but the measure for future returns is risk-adjusted 12-month returns, $RET_{iy+1}^{CAPM,12}$, which uses the terminal 12-month window for firms that were acquired or delisted within 12 months after the announcement or pseudo-announcement. In Table 9, the mean returns of the disclosers that were acquired compared to the mean returns of the non-disclosers that were acquired (+28.3% vs. +16.9%) is statistically different (p=0.003). The mean returns of no-outcome disclosing firms compared to the mean returns of the no-outcome entropy-balanced control firms (-7.7% vs. +8.2%) is statistically different (p=0.000). Thus, using $RET_{iy+1}^{CAPM,12}$ provides consistent results.

6.6.3 Endogeneity concerns of future return results mitigated by rumor group

In Tables 7, 8, and 9, the right-side column presents the returns of the rumor group. Whether measuring future returns as $CUMDRET_{iy+1}$, RET_{iy+1}^{CAPM}, or $RET_{iy+1}^{CAPM,12}$, the mean returns for acquired and no-outcome firms are not statistically different between firms with voluntary disclosure or involuntary disclosure. This shows the similarity in stock return effects following voluntary disclosure and stock return effects following involuntary disclosure, which by nature is not endogenous. Therefore, the future returns to voluntary disclosure are unlikely to be explained away by endogeneity, as exogenous disclosures cause similar future returns.

6.6.4 Testing the future return associated with disclosure and ex-post outcomes

In Table 10, 11, and 12, future buy-and-hold returns are regressed on interactions between disclosure choice and *ex-post* outcomes, controlling for firm fundamental, market and risk characteristics. The interaction terms between disclosure and outcome indicator variables parse out the differential buy-and-hold returns associated with each disclosure-outcome combination.

$$RET_{iy+1} = \beta_0 + \beta_1 DISC_{it} + \beta_2 ACQ1YR_{it} + \beta_3 ACQ1YR_{it} * DISC_{it} + \beta_4 LIQ1YR_{it} + \beta_5 LIQ1YR_{it} * DISC_{it} + \sum_{k=6}^{K} \beta_k controls_k + \varepsilon_{it}$$

[TABLE 10]

The coefficient estimates represent portfolio averages. The specification in Table 10 column (1) estimates that the intercept, β_0, is +16.1 percent (*t*=3.189) representing the average $CUMDRET_{iy+1}$ that non-disclosing no-outcome firms receive. The coefficient β_1 on *DISC* represents the average cost of disclosure, *ceteris paribus*, which is estimated to equal -15.5 percent (*t*=-2.739) lower future returns. The coefficient β_2 on *ACQ1YR* represents the additional takeover-related returns of +14.3 percent (*t*=4.301), on average, using the full entropy-balanced control firms. In addition to the +16.1 percent intercept, the takeover premium is 30.2 percent (rounding discrepancy) for non-disclosing firms. The coefficient β_3 on *ACQ1YR * DISC* means that the disclosing firms receive an additional 24.8 percent (*t*=4.393) takeover-related returns, so the mean returns from being acquired *and* disclosing is 39.7 percent (16.1 – 15.5 + 14.3 + 24.8). These mean values of $CUMDRET_{iy+1}$ conditional on disclosure and outcomes are consistent with the tabular presentation in Table 8. The coefficient β_4 on *LIQ1YR* represents a negative return of -63.9 percent (t=-15.469) on average due to liquidation. The estimated coefficient β_5 on *LIQ1YR * DISC* is not statistically different from zero, and this interaction term is dropped from the additional specifications. Column (2) shows that results are robust to dropping the *LIQ1YR * DISC* term, as there does not seem to be an incremental effect of disclosure for liquidated firms. Column (3) controls for fundamentals, risk and return, ownership characteristics, and the inverse Mills ratio to control for selection into treatment. The inverse Mills ratio is estimated using a probit model using the specification in Table 21, and is discussed later. Although future variables should not be introduced as explanatory variables because they may reflect causal effects of treatment and bias the real estate of interest, I nonetheless include the future average quarterly ROA ($AVGQROA_{iy+1}$) to check that the future return results of disclosure remain significant after controlling for future performance which would impact future returns.

Over the four specifications presented in columns (1) through (4), estimates of the cost of disclosure on future returns, readily apparent as β_1, are -15.5, -14.9, -14.7, and -12.1 percent, respectively. Estimates of the net benefits of disclosure conditional on subsequent takeover ($\beta_1+\beta_3$) are +9.3, +9.3, +9.7, and +10.8 percent, respectively.

[TABLE 11]

Table 11 repeats the same regression analysis as in Table 10, but the dependent variable is RET_{iy+1}^{CAPM}. Across the four specifications presented in columns (1) through (4), estimates of the cost of disclosure, given by β_1, are -15.7, -15.1, -15.5, and -13.2 percent, respectively. Estimates of the net benefit of disclosure conditional on subsequent takeover, given by ($\beta_1+\beta_3$), are +7.5, +7.5, +9.8, and +10.2 percent, respectively.

[TABLE 12]

Table 12 repeats the same regression analysis as in Tables 10 and 11, but the dependent variable is $RET_{iy+1}^{CAPM,12}$. Across the four specifications presented in columns (1) through (4), estimates of the cost of disclosure, given by β_1, are -16.0, -15.1, -15.4, and -13.0 percent, respectively. Estimates of the net benefit of disclosure conditional on subsequent takeover, given by ($\beta_1+\beta_3$), are +11.3, +11.3, +12.4, and +12.9 percent, respectively.

6.6.5 Robustness check using a one-to-one matched control group

Instead of using the full entropy-balanced control group of 64,421 observations, I use an alternate control group of 990 control observations (*DISC*=0) drawn from the same Fama-French 48 industry and year. For each disclosing observation, I select the corresponding control firm based on the closest total assets (*ASSETS*) that is in the same FF48 industry, year, and market-to-book (*MTB*) quartile.

[TABLE 13]

Table 13 presents key variables' summary statistics of the disclosure group (*DISC*=1) and matched control group (*DISC*=0). Due to the matching procedure, *ASSETS* and *MTB* are not statistically different between the two groups. Unfortunately, *LEV*, *ΔROA*, *ROA*, *REV*, *OI*, *CFO*, *OPACC*, RET_{iy}, *ANALYSTEST*, *INSTBLKOWN%*, and *SHARESHELD* are all statistically different between the two groups. While entropy-balancing the control group achieves multiple covariate balance, a simple one-to-one matched control group can only achieve balance along limited covariates. Nonetheless, using this alternate control group as a robustness test, I regress future return on disclosure, future outcomes, and their interaction terms.

[TABLE 14]

In Table 14, the dependent variable is $CUMDRET_{iy+1}$. Across the four specifications presented in columns (1) through (4), estimates of the cost of disclosure, given by β_1, are -14.3, -13.2 -12.4, and -10.6 percent, respectively. Estimates of the net benefit of disclosure conditional on subsequent takeover, given by ($\beta_1+\beta_3$), are +6.3, +6.4, +3.5, and +4.1 percent, respectively.

[TABLE 15]

Table 15 repeats the same future return regression analysis, but the dependent variable is RET_{iy+1}^{CAPM}. Across the four specifications presented in columns (1) through (4), estimates of the cost of disclosure, given by β_1, are -13.5, -13.5, -12.4, and -10.7 percent, respectively. Estimates of the net benefit of disclosure conditional on subsequent takeover, given by ($\beta_1+\beta_3$), are +8.0, +8.0, +7.0, and +7.6 percent, respectively.

[TABLE 16]

Table 16 repeats the same future return regression analysis, but the dependent variable is $RET_{iy+1}^{CAPM,12m}$. Across the four specifications presented in columns (1) through (4), estimates of the cost of disclosure, given by β_1, are -13.9, -14.9, -12.8, and -11.0 percent, respectively. Estimates of the net benefit of disclosure conditional on subsequent takeover, given by ($\beta_1+\beta_3$), are +5.4, +5.4, +5.3, and +5.9 percent, respectively.

6.7 Testing the mechanisms of disclosure benefits

Several mechanisms could potentially explain the abnormal return benefit to disclosing firms that are subsequently acquired. Because disclosing firms have higher bid-ask spreads than their industry and year peers (Figure 6) and are poorly performing firms seeking a transactional lifeline (Table 3), these firms have room for improvement by decreasing information asymmetry

in order to improve the sale process and receive a "better" M&A offer than they otherwise would. I test whether disclosure firms achieve specific benefits, namely, a higher number of bidders, a higher proportion of cash consideration in the offer received, and a reduction in bid-ask spread. For the first two mechanisms, I employ offer details from SDC about the number of bidders and the percentage of cash consideration underlying the offer. Because SDC coverage is limited and imperfect, as described in the data section, I must assume that the observations I am able to merge with SDC are at random.

$$NUMBIDDERS_{it} \text{ or } PERCCASH_{it} = \beta_0 + \beta_1 DISC_{it} + \sum_{k=2}^{K} \beta_k controls_k + \varepsilon_{it}$$

[TABLE 17]

In Table 17 Panels A and B, disclosing firms and control firms that are matched with SDC records are included in estimation. In Panel A, the number of formal bidders in the final round of the sale process ($NUMBIDDERS_{it}$) is regressed on an indicator variable for disclosure (*DISC*). Since the dependent variable is count data following a poisson distribution, I use a standard poisson regression with cluster robust standard errors to account for within-industry time series correlation. Although a negative binomial model may also be used for count data, my data does not exhibit overdispersion which would call for the negative binomial model. Results in Panel A show that coefficient on *DISC* is +0.083 (z=3.288) in column (1) and +0.082 (z=3.056) in column (2). Disclosure is positively associated with the number of bidders, even when controlling for other firm characteristics. This benefit is consistent with the public advertisement of a potential target firm's availability reaching the radar of more potential suitors, which would eventually result in abnormal returns to shareholders.

In Panel B, the proportion of cash consideration (*PERCCASH*) is regressed using a fractional probit model on an indicator variable for disclosure (*DISC*) and controls. Because the dependent variable of interest is a proportion, $0 \leq PERCCASH \leq 1$, a fractional response model is appropriate (Papke and Wooldridge, 1996). I do not use a logit transformation, because for observations where the *PERCCASH* is zero or one, the transformed result would be a missing value and that observation could not be used in the estimation. In column (1), the coefficient on *DISC* is +0.327 (z=4.729) with a marginal effect of +0.095 (z=4.710) shown in column (2). This means that disclosing firms receiving an offer will have 9.5 percent more cash consideration than full entropy-balanced control firms. In column (2), the coefficient on *DISC* is +0.317 (z=4.567) with a marginal effect of +0.087 (z=4.572). This means that disclosing firms receiving an offer will have 8.7 percent more cash consideration than full entropy-balanced control firms, after controlling for firm fundamental, risk, and return characteristics, and the inverse Mills ratio. These results support that disclosing firms receive better-informed offers that are financed with more cash ($PERCCASH_{it}$) and less acquirer stock.

$$\Delta SPREAD_{im+1} = \beta_0 + \beta_1 DISC_{it} + \beta_2 SPREAD_{im} + \sum_{k=3}^{K} \beta_k controls_k + \varepsilon_{it}$$

In Panel C, the change in bid-ask spread ($\Delta SPREAD_{im+1}$) is regressed on an indicator variable for disclosure (*DISC*). $\Delta SPREAD_{im+1}$ is calculated as $SPREAD_{im+1} - SPREAD_{im-1}$, where $SPREAD_{im}$ is the ask price minus bid price divided by closing price at month *m*. Ordinary least squares results show that the coefficient on *DISC* is -0.003 in both columns (1) (*t*=-1.715) and column (2) (*t*=-1.713). Disclosure is associated with a reduction in bid-ask spread of 0.3% of stock price.

In testing several mechanisms of the benefits of disclosure, I find that disclosure appears to lead to a greater number of bidders, receipt of a more-informed M&A offer, and reduced information asymmetry.

6.8 Testing the mechanisms of disclosure costs

I test whether public disclosure of a firm seeking to sell itself leads to dysfunctional operations, as measured by decreasing revenues and decreasing operating income. As mentioned in the hypotheses development section, key stakeholders like employees, customers, suppliers, and distributors are less likely to be loyal to continue business relationships with a firm that is knowingly distracted from continuing operations and may cease to exist in the future. As a result, operational costs of disclosure could be reflected in decreased revenues and operating income. ΔREV_{iq+2} is calculated as $REV_{iq+2} - REV_{iq-2}$, and ΔOI_{iq+2} is calculated as $OI_{iq+2} - OI_{iq-2}$. Because financial data is quarterly, a change from *q-2* to *q+2* is the year-over-year change for the same quarter. Control firms use full entropy-balance weights, which was balanced on REV_{iq} and OI_{iq} among other firm characteristics. In addition, I control for the contemporaneous quarterly revenue or operating income in the regression to assure that the changes result has controlled for the level of revenue or operating income at the time of the announcement or pseudo announcement.

$$\Delta REV_{iq+2} = \beta_0 + \beta_1 DISC_{it} + \beta_2 REV_{iq} + \sum_{k=3}^{K} \beta_k controls_k + \varepsilon_{it}$$

[TABLE 18]

Table 18 Panel A presents the results from least squares regressions of a change in revenue on disclosure. The coefficient on *DISC* is -0.006 in both columns (1) (*t*=-1.800) and (2) (*t*=-1.689). Disclosure is associated with a change in quarterly revenue by -0.6% of average total assets, while controlling for the level of revenue.

$$\Delta OI_{iq+2} = \beta_0 + \beta_1 DISC_{it} + \beta_2 OI_{iq} + \sum_{k=3}^{K} \beta_k controls_k + \varepsilon_{it}$$

Panel B presents the results from least squares regressions of a change in operating income on disclosure. The coefficient on *DISC* is -0.010 in both columns (1) (*t*=-3.539) and (2) (*t*=-3.518). Disclosure is associated with a change in quarterly operating income by -1.0% of average total assets, while controlling for the level of operating income. With the tests in Table 14, I find evidence that disclosing firms have decreased revenues and operating incomes

following disclosure, even though disclosing firms and the full entropy-balanced control firms have same firm characteristics at the time of the disclosure.

6.9 Falsification tests of mechanisms using the rumor group as the control group

The previous section attributed the higher number of bidders, higher proportion of cash consideration, decrease in bid-ask spread, decrease in revenue, and decrease in operating income to disclosure consequences. Since voluntary disclosure is an endogenous decision, a potential criticism is that the claimed consequences are not consequences, but endogenous relations. In falsification tests, I exploit a group of rumor announcements. Rumors are involuntary disclosures that should cause consequences that are not driven by selection. Therefore, if the consequences attributed to voluntary disclosure are valid, then voluntary disclosure firms, relative to rumor firms that also experience the consequences, should *not* have a higher number of bidders, higher proportion of cash consideration, decrease in bid-ask spread, decrease in revenue, and decrease in operating income to disclosure. In the falsification tests, *DISC*=1 for the voluntary disclosure sample of 990 observations, and *DISC*=0 for the involuntary disclosure sample of 150 observations. Estimation samples are smaller due to not all firms receiving an offer and missing values to calculate changes in spread, revenue, and operating income.

[TABLE 19]

Table 19 repeats the poisson, fractional probit, and least squares regressions as in Table 17 to test the mechanisms of disclosure benefits. Table 15 Panel A shows the poisson regressions of *NUMBIDDERS*. In column (1), the coefficient on DISC is positive and significant. Voluntary disclosure, relative to involuntary disclosure, appears to be associated with a higher number of bidders, which is not expected for this falsification test. When controlling for firm fundamentals, risk and return characteristics, and the inverse Mills ratio in column (2), the coefficient on *DISC* is negative and statistically insignificant. I fail to reject the null that voluntary disclosure, relative to involuntary disclosure, is not associated with a different and higher number of bidders. Panel B shows that fractional response regression of *PERCCASH*. The coefficient on DISC and its marginal effect are not statistically significant in columns (1) through (4). I fail to reject the null that voluntary disclosure, relative to involuntary disclosure, is not associated with receiving a different proportion of cash in the M&A bid. Panel C shows the least squares regression of $\Delta SPREAD_{im+1}$. In column (1), the coefficient on DISC is positive and significant. Voluntary disclosure, relative to involuntary disclosure, appears to increase—not decrease—information asymmetry. In column (2), the coefficient on DISC is negative and insignificant. I fail to reject the null that voluntary disclosure, relative to involuntary disclosure, is not associated with a different change in bid-ask spread.

In Table 19, with the exception of one specification, Panel A column (1), the falsification tests are consistent with the benefits of disclosure found in Table 17 attributed to positive consequences of disclosure rather than endogenous relationships.

[TABLE 20]

Table 20 repeats least squares regressions as in Table 18 to test the mechanisms of disclosure costs manifesting through dysfunctional operations. Table 20 Panel A shows the regressions of ΔREV_{iq+2}. The coefficient on *DISC* is not statistically significant. I fail to reject the null that voluntary disclosure, relative to involuntary disclosure, is not associated with a different change in quarterly revenue. Table 16 Panel A shows the regressions of ΔOI_{iq+2}. The coefficient on *DISC* is not statistically significant. I fail to reject the null that voluntary disclosure, relative to involuntary disclosure, is not associated with a different change in quarterly operating income. The falsification tests in Table 20 support the costs of disclosure found in Table 18 being attributed to negative consequences of disclosure rather than endogenous relationships.

6.10 Selection into disclosure and the inverse Mills ratio

Throughout this paper, when analyzing outcomes and consequences of disclosure, it is imperative to control for the (self-) selection into disclosure. Voluntary disclosure is an endogenous firm decision. Therefore, the standard Heckman control function approach inserts the inverse Mills ratio in outcome regressions to control for selection. The inverse Mills ratio, *INVMILLS*, is calculated as the standard normal distribution function at $\widehat{DISC}$ divided by the standard normal cumulative density function at $\widehat{DISC}$. $\widehat{DISC}$ is the fitted value of *DISC* using a probit regression on *MKVAL*, *MTB*, *LEV*, *CASH*, *INTAN*, *ΔROA*, *CFO*, *OPACC*, *BETA*, RET_{iy}, *ANALYSTEST*, *INSTBLKOWN%, SHARESHELD*, and *EXISTRUMOR*. FF12 industry and year fixed effects are included in the probit regression to capture varying probability of disclosing strategic alternatives dependent on industry and year. For this purpose, where *ANALYSTEST*, *INSTBLKOWN%*, or *SHARESHELD* are missing, the mean industry-year average value is filled in, to avoid generating missing values of $\widehat{DISC}$ and *INVMILLS*.

[TABLE 21]

The result of the probit selection equation is presented in Table 21. A lower *ΔROA*, lower *OPACC*, higher *INSTBLKOWN%*, lower *SHARESHELD*, and *EXISTRUMOR*=1 statistically increases the probability of disclosure. From its average value, a small ε decrease in *ΔROA* will increase the probability of disclosure by ε*1.1 percent. From its average value, a small ε decrease in *OPACC* will increase the probability of disclosure by ε*1.7 percent. From its average value, a small ε increase in *INSTBLKOWN%* will increase the probability of disclosure by ε*2.5 percent. From its average value, a small ε decrease in *SHARESHELD* will increase the probability of disclosure by ε*1.1 percent. Firms with an existing rumor (*EXISTRUMOR*=1) have a 3.8 percent higher probability of disclosure, holding all other variables at their mean values. *MKVAL*, *MTB* , *LEV*, *CASH*, *INTAN*, *CFO* , *BETA*, *RET*, and *ANALYSTEST* are statistically significant explanatory variables for the probability of disclosure, but are economically insignificant given their small marginal effects.

6.11 Determinants of disclosure

This section investigates the determinants of strategic alternatives disclsoures. Prediction 3 tests whether disclosure is associated with poor firm performance, poor information environment, and certain corporate governance catalysts for change in control. Certain firm

characteristics may explain why we see certain types of firms disclosing strategic alternatives. Specifically, firms suffering from poor performance, undervaluation, and a poor information environment (i.e., facing a circulating rumor, lower analyst following) view the benefits of an acquisition and disclosure as being greater. If institutional blockholders and activist investors provide more pressure on management to enhance shareholder value, then this could increase the likelihood of disclosing strategic alternatives. Finally if golden parachutes decrease the perceived costs of disclosing strategic alternatives by offsetting the managers' job loss, then we could observe such firms to be more likely to disclose strategic alternatives.

I first examine the time-series plots to determine in a univariate setting the firm characteristics of disclosing firms compared with their industry and year peers. Furthermore, the convergence of differences can be seen when comparing the discloser's characteristics to those of the full entropy-balanced control group.

[FIGURE 10]

Figure 10 depicts the time series of various financial characteristics of disclosing firms compared with their industry-and-year peer firms in the odd Panels (A, C, etc.), and of disclosing firms with the full entropy-balanced control firms in the even Panels (B, D, etc.). Compared to industry-and-year peers, the disclosing firms are characterized by lower and declining market capitalization (Panel A), but this difference converges with full entropy-balancing (Panel B). Disclosing firms have lower market-to-book ratios with a steep decline in the immediate preceding quarters (Panel C), which could reflect a lower numerator or higher denominator. MTB differences are mitigated with full entropy-balancing (Panel D). Disclosing firms face a precipitous decline in and lower *ROA* (Panel E); this difference in levels and trend is mitigated with full entropy-balancing (Panel F). Disclosing firms have lower and decreasing quarterly cash flow from operations (Panel G); this difference in level and trend is mitigated with full entropy-balancing (Panel H). Disclosing firms have higher and increasing quarterly cash flow from investing (Panel I), suggesting that these firms are spending less on investment assets like plant property and equipment. Although *CFI* is not a covariate specified in the entropy-balancing process, full entropy balancing does mitigate the difference in level and trend (Panel J). Disclosing firms experience a precipitous and immediate decline in operating accruals (Panel K), corroborating that these are firms cutting back investment assets. This difference in level and trend is mitigated with full entropy-balancing (Panel L).

[FIGURE 11]

Figure 11 graphs the time series of analyst, ownership, and governance traits related to the disclosers and the industry- and year- or full entropy-balance control firms. Panel A shows that the consensus analyst forecast of disclosing firms is lower and declining compared to industry- and year- balanced control firms. This result could suggest that disclosing firms have a poorer future outlook. The difference in level and trend of *ANALYSTEST* is mitigated with full entropy-balancing (Panel B). Panel B shows that fewer analysts follow the disclosing firms. This is consistent with lower analyst coverage for firms with worse prospects, or that firms with lower information intermediation choose to disclose to bridge the information gap with more voluntary

disclosure. The difference in level and trend of *NUMANALYSTS* is mitigated with full entropy-balancing (Panel D). Panel E shows that institutional blockholder ownership percentage is greater for the disclosing firms, and full entropy-balancing mitigates the difference (Panel F). Panel G shows that activist ownership percent is greater and increasing in the disclosers, and full-entropy balancing slightly mitigates the difference (Panel H). While institutional blockholders appear to be exiting firms that disclose strategic alternatives, in contrast, activist investors, who are a component of institutional blockholders, appear to be increasing their ownership percentage. Panel I shows that golden parachute provisions are more common in the disclosing firms, and full-entropy balancing slightly mitigates the difference (Panel J). Panel K shows that poison pill provisions are increasing in the disclosers, and full entropy-balancing mitigates the difference (Panel L). While golden parachutes and poison pills are governance provisions traditionally seen as entrenchment measures and anti-takeover defenses, their higher presence in the disclosing firms suggests that those corporate governance provisions prompts firms to seek strategic alternatives and maximize shareholder value.

In a multivariate analysis, I use probit regressions to predict disclosure ($DISC_{it}$) using antecedent firm fundamentals, returns and risk, analyst, investor and governance characteristics. I use industry- and year- balancing on the control firms in this test because the goal is to explain the determinants of disclosure compared to all other firms in the same industry-years as the disclosers.

$$DISC_{it} = \beta_0 + \sum_{k=1}^{10} \beta_k fundamentals_{iq} + \sum_{k=11}^{12} \beta_k returns\ and\ risk_{iy} + \sum_{k=13}^{14} \beta_k analysts_{im} + \sum_{k=15}^{16} \beta_k investors_{im} + \sum_{k=17}^{18} \beta_k governance_{iq} + \varepsilon_{it}$$

[TABLE 22]

Table 22 presents the results of the probit estimation. Due to missing variables, the estimation sample is less than the total 65,411 firms-years. Because availability of the analyst and ownership variables are slightly greater than the availability of the governance provisions, the specification in column (1) includes analyst and ownership variables, while the specification in column (3) includes governance provisions. Results show that disclosure is increasing in leverage (mixed significance), cash balance (mixed significance), intangible assets, having an existing rumor, blockholder ownership, activist presence, and golden parachute provisions. Disclosure is decreasing in firm size, market-to-book, investment as proxied by operating accruals, prior 120-month returns, analyst following, and insider ownership. While Figure 11 suggests a univariate association between voluntary disclosure and analyst consensus forecast and poison pills, those variables do not appear as significant determinants of disclosure using the multivariate probit regressions.

Tables 21 and 22 provide a consistent understanding of the type of firms that voluntarily disclose strategic alternatives. These firms have poor fundamental and stock return performance, and the lower market-to-book ratios of these firm reflects the poor future outlook. These firms

have lower operating accruals, which may reflect managers' negative private information for future performance and the fact that these firms are not investing in capex. The lower level of insider ownership seems consistent with manager's negative beliefs about the future. The probability of disclosure is associated with a poor information environment. Firms that experience face market speculation and firms that have a lower analyst following are more likely to disclose strategic alternatives. The presence of institutional blockholders and activists are also predictive of disclosure, suggesting that these stakeholders effectively push a firm to put itself up for sale. Lastly, golden parachutes are able to explain the probability of disclosure, suggesting that they effectively align managers' incentives with the sale of the firm.

Chapter 7

Conclusion

This dissertation examines the voluntary disclosure decision of firms seeking to sell themselves. This is typically the first step in the M&A sale process for these firms. Managers that are endowed with private information about firm value in a potential M&A transaction must decide whether to publicly announce strategic alternatives. Ultimately, some firms are successfully acquired while others are not. This paper finds evidence that the disclosure decision impacts the eventual value realized by shareholders. The precursory M&A sale process provides a unique setting in which to examine the determinants and consequences of a specific type of voluntary disclosure. Due to the high-stake, disruptive nature of strategic alternatives, the cost and benefit consequences of disclosure are economically meaningful.

Theoretical models do not always apply to the real world, but in this case, strategic alternatives disclosures are well-matched to an analytical framework.

- The disclosure decision is unlikely to be influenced by a pre-existing periodic disclosure policy.
- The firm's objective function is consistent with the stated purpose of these voluntary disclosures to maximize shareholder value.
- Terminal firm value is actually observed for the subset of firms that are eventually acquired or liquidated.
- The private information signal is uncertainly endowed and of imperfect precision.

First, I find that in the short-term, the stock market and information market react positively to the news, which is consistent with the theoretical predictions. Short window reactions show that investors perceive the announcements as conveying private information and as managers' attempt to maximize firm value. These disclosures appear to be somewhat credible and not entirely "cheap talk" because they are informative about future M&A takeovers. Firms that announce strategic alternatives also appear to garner investor attention and experience increased downloads of their 10-K, 10-Q and 8-K filings on EDGAR.

Second, I examine the future stock returns to investigate how disclosure impacts long-run firm value. In contrast to the positive short-widow returns, the disclosing group as a whole earns negative abnormal returns over a long window. Investors appear to systematically overreact to the strategic alternatives announcement, as the stock price slides on average after the announcement. This is a puzzle in light of the efficient market hypothesis, because the null hypothesis is that a public disclosure should not have any predictable association with future price changes. These future return results are robust to controlling for size, CAPM beta, and other firm characteristics.

The negative future returns are driven by a subsample. The announcement-related premium reverses and becomes a valuation discount unless it is monetized by a successful takeover within the following one year. Over time, if no buyer emerges, the probability of an imminent takeover dissipates and the longer-term costs of disclosure are manifested in firm

value. Partitioning the sample based on *ex-post* transactional outcomes reveals the capital market costs and benefits associated with disclosure, measured by long-run future abnormal returns. *Ex-post* saleable firms obtain significantly higher abnormal takeover returns if they disclose preemptively, and the abnormal premium stems from the announcement. On the other hand, *ex-post* unsaleable firms experience significantly lower abnormal future returns and, on average, would perhaps have been better off had they not disclosed.

I find evidence of specific mechanisms of disclosure benefits: more bidders in the sale process, more informed offers being received, better information, and ultimately, higher takeover-related future returns. I also find evidence of specific mechanisms of disclosure costs: lower future revenues, lower future operating performance, and ultimately, lower abnormal returns reflecting the negative operational consequences materializing into stock prices. This evidence of a significant cost-benefit tradeoff underlying the disclosure decision explains why, in the real world, only some firms choose to disclose strategic alternatives and this disclosure exhibits a threshold equilibrium.

Third, I show that companies disclosing strategic alternatives have poor performance, lower analyst following, higher blockholder and activist presence, and a greater likelihood of having golden parachute provisions. These performance, information intermediary, and corporate governance attributes may prompt the need to and provide incentives to managers to use a public disclosure. In the theoretical framework, these characteristics affect the perceived costs and benefits and push firms over the disclosure threshold.

Academic and practitioner audiences interested in market-moving corporate disclosures can gain an understanding about a disruptive voluntary disclosure made in the M&A setting. Audiences interested in target takeover motives would be interested in the types of firms that are making these voluntary disclosures. Audiences can gain an initial understanding of the disclosure's impact on the sale process, operations, and short- and long-run stock prices, as this is the first empirical paper to examine the costs and benefits of disclosure. The economically significant costs and benefits have implications for event-driven hedge funds and other market participants. The findings are informative to managers and directors in firms that are considering strategic alternatives and facing the disclosure dilemma. The future outcomes and consequences of firms announcing strategic alternatives are varied, complex, and economically important for firm value. Therefore, the cost-benefit tradeoff from undertaking this voluntary disclosure merits careful consideration from investors and managers.

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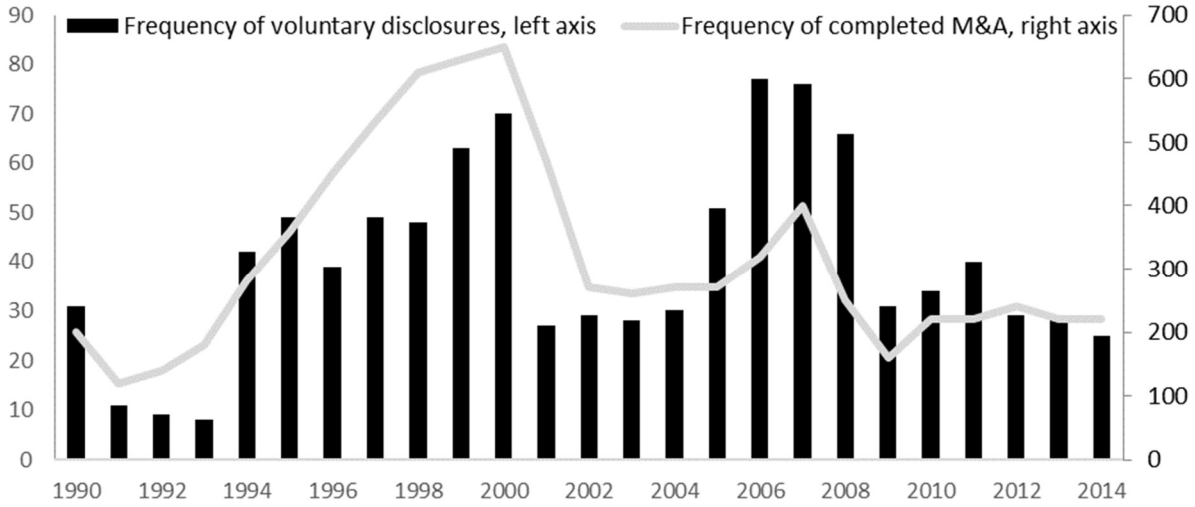
Figures

FIGURE 1

Frequency of voluntary disclosures and of completed M&A targets

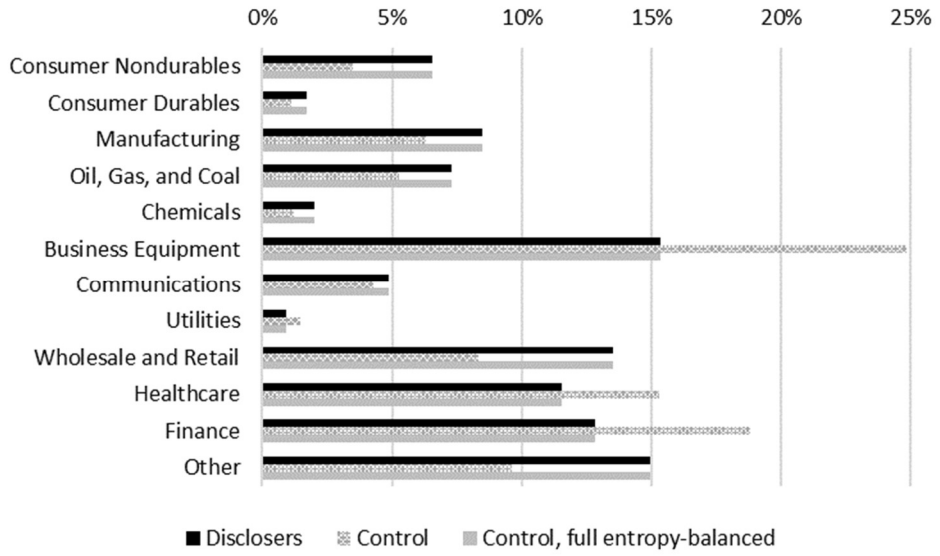


Notes: Figure 1 depicts the histogram of the sample of 990 voluntary disclosures (bars, left axis) and the frequency of 7,940 completed M&A experienced by targets (line, right axis) from 1990 to 2014. The completed M&A target frequencies are based on delisting dates from CRSP where the delisting code=2, representing mergers.

FIGURE 2 (continued on next page)

Density distributions by industry, year, and month

Panel A: Industry



Panel B: Year of announcement date or pseudo-announcement date

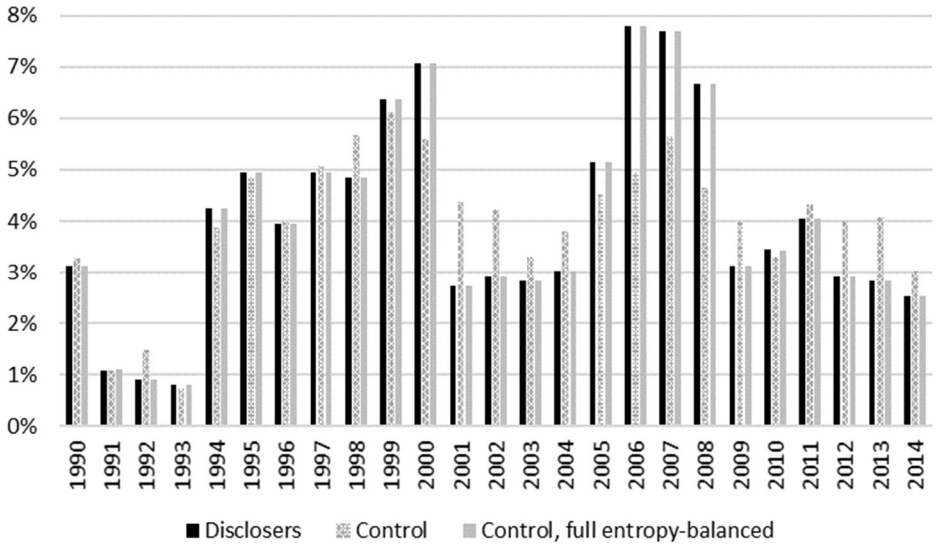
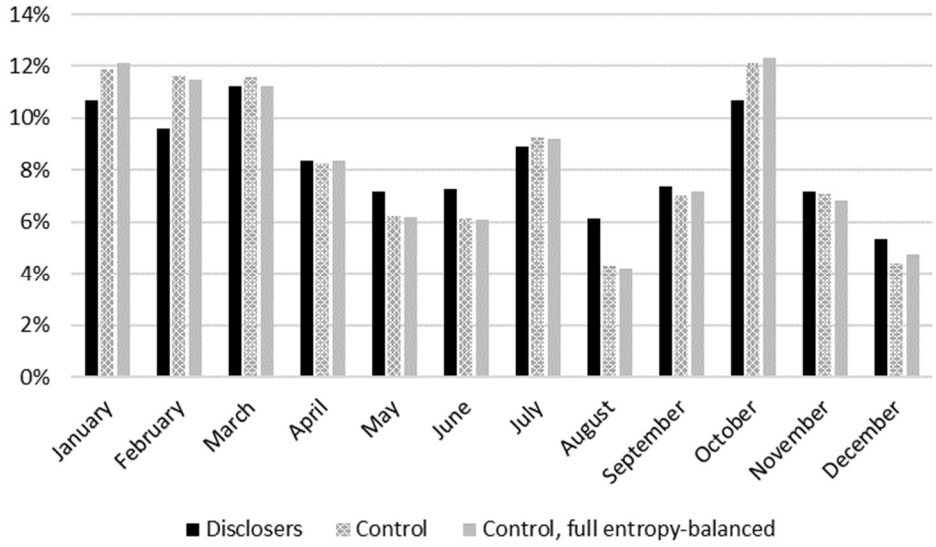


FIGURE 2 (continued)

Panel C: Month of announcement date or pseudo-announcement date



Notes: Panel A plots the density of the disclosure group (*DISC*=1), unweighted control group (*DISC*=0), and full entropy-balanced control group (*DISC*=0) over the Fama-French 12 industries. Panel B (C) plots the density of three groups over the years (months) of the announcement date, if *DISC*=1, or psendo announcement date, if *DISC*=0. The sample is comprised of 990 disclosure observations and 64,421 control observations from 1990 to 2014.

FIGURE 3 (continued on next page)

Market reaction to voluntary disclosures

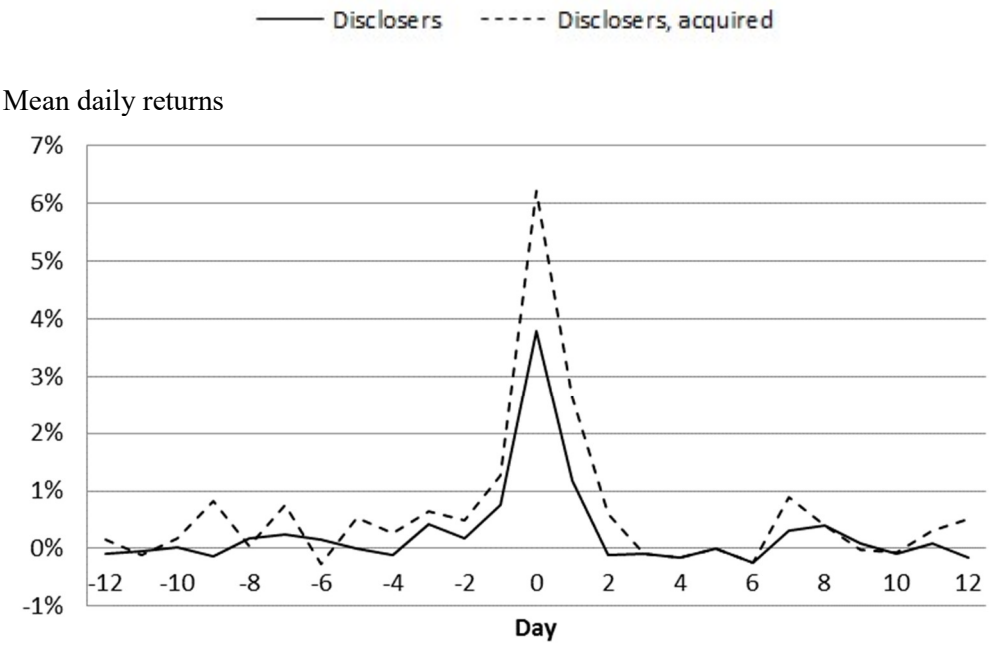
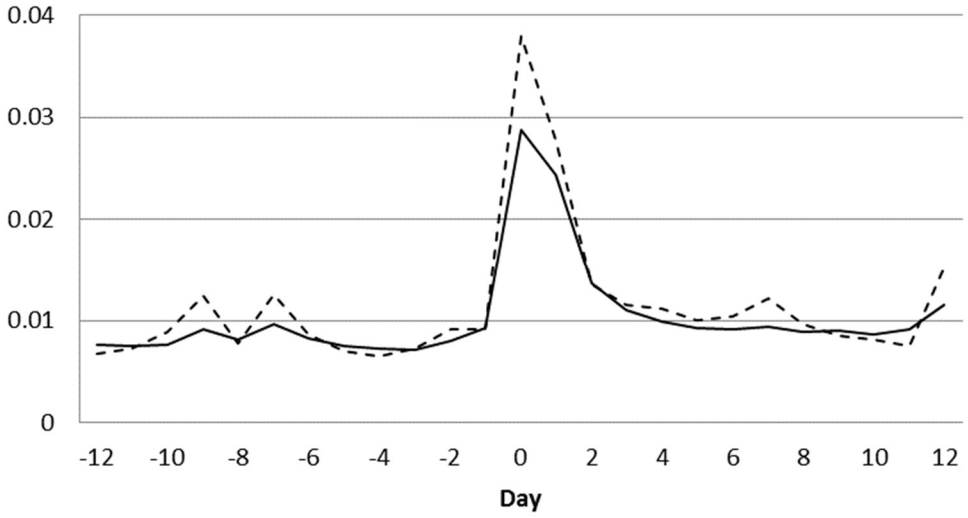
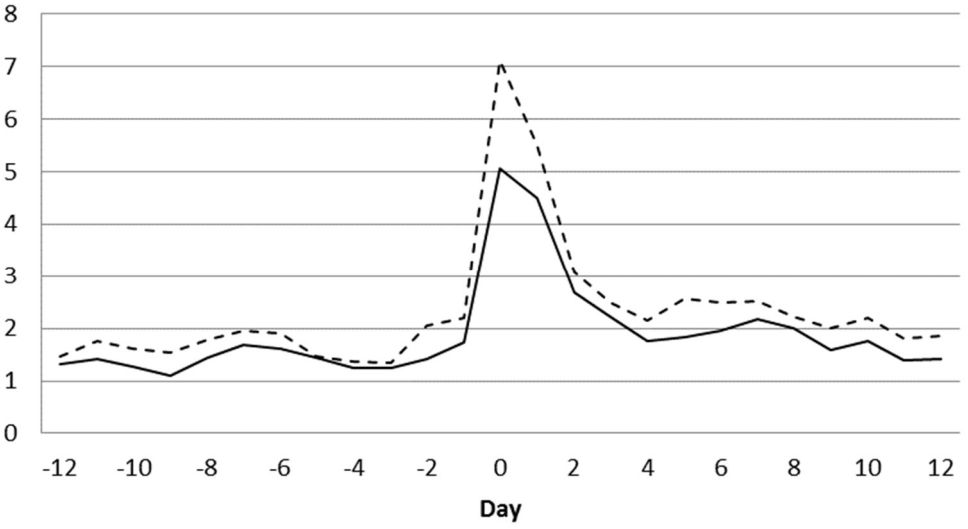


FIGURE 3 (continued)

Panel C: Mean share turnover



Panel D: Mean abnormal EDGAR information acquisition

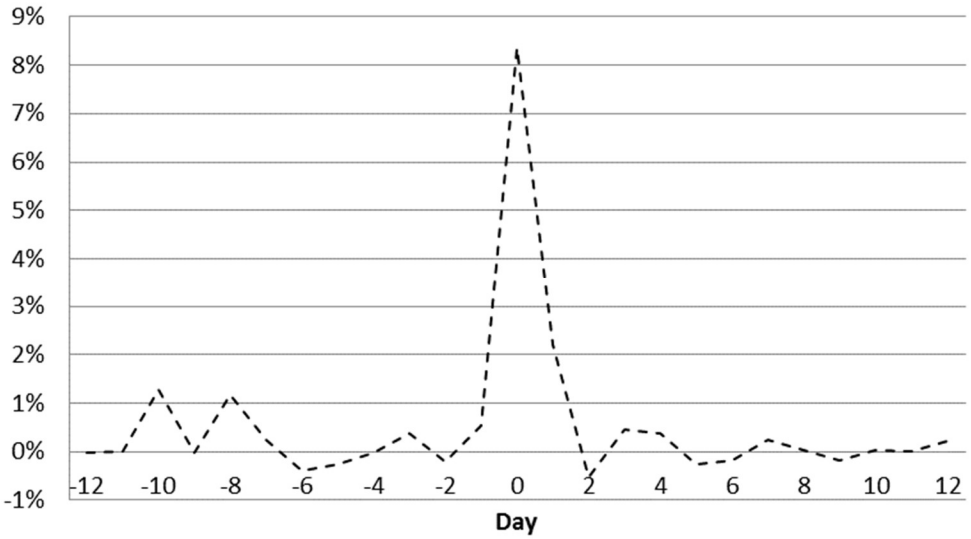


Notes: Panel A depicts the daily returns, Panel B the buy-and-hold daily returns accumulated from day -12, Panel C the share turnover, and Panel D the abnormal EDGAR information downloads during days [-12, +12] surrounding the strategic alternatives announcement date. The sample is comprised of 990 disclosure observations from 1990 to 2014. The solid line represents the disclosure sample as a whole, while the dashed line represents the subsample of disclosers that are *ex-post* acquired. Daily returns are raw returns. Buy-and-hold returns are calculated using raw daily returns. Share turnover is calculated as daily trading volume divided by common shares outstanding. Abnormal information acquisition is calculated as the number downloads of firm *i*'s 10-K, 10-Q, and 8-K filings on day *d* divided by the average daily downloads of those filing types over the previous 365 days. I exclude daily download counts made by any IP address that downloads more than 50 filings that day.

FIGURE 4 (continued on next page)

Market reaction to rumors

Panel A: Mean daily returns to rumors



Panel B: Mean buy-and-hold returns to rumors

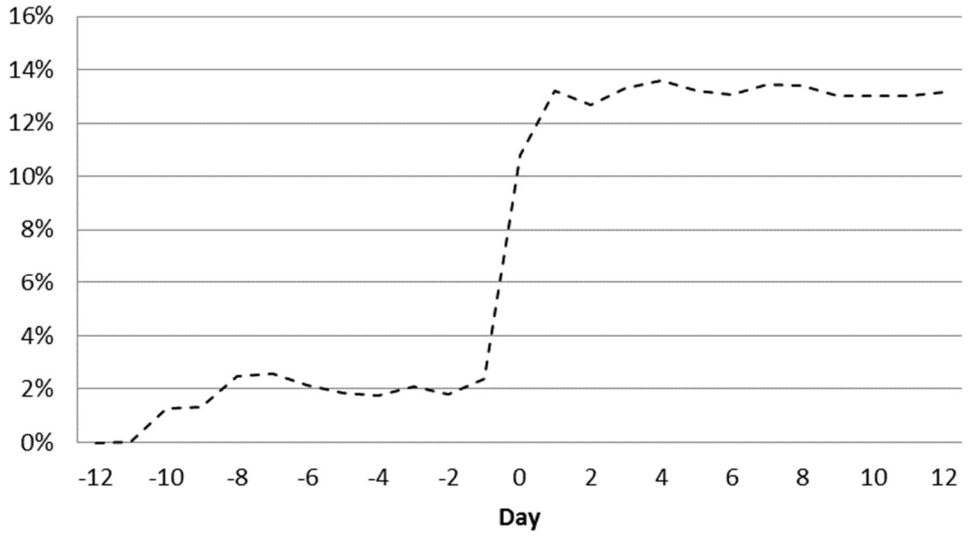
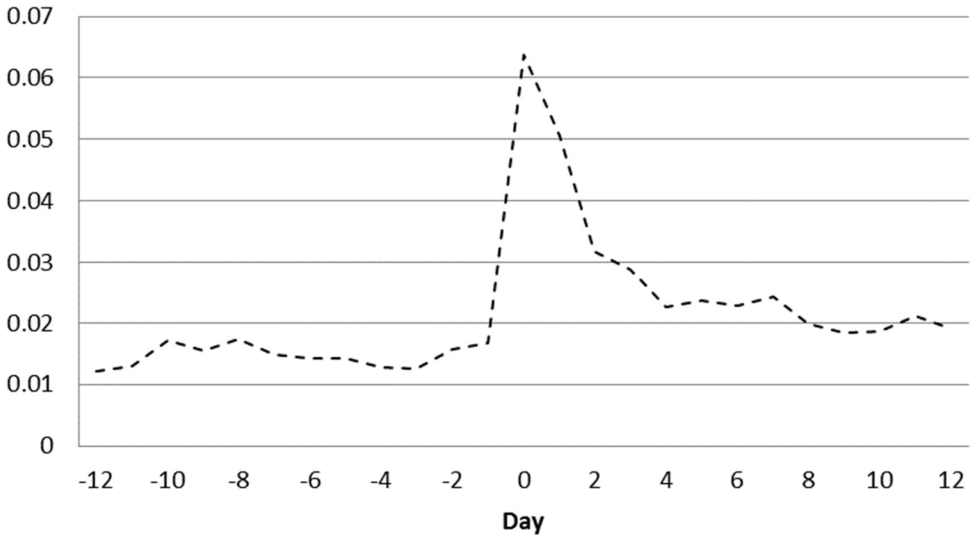
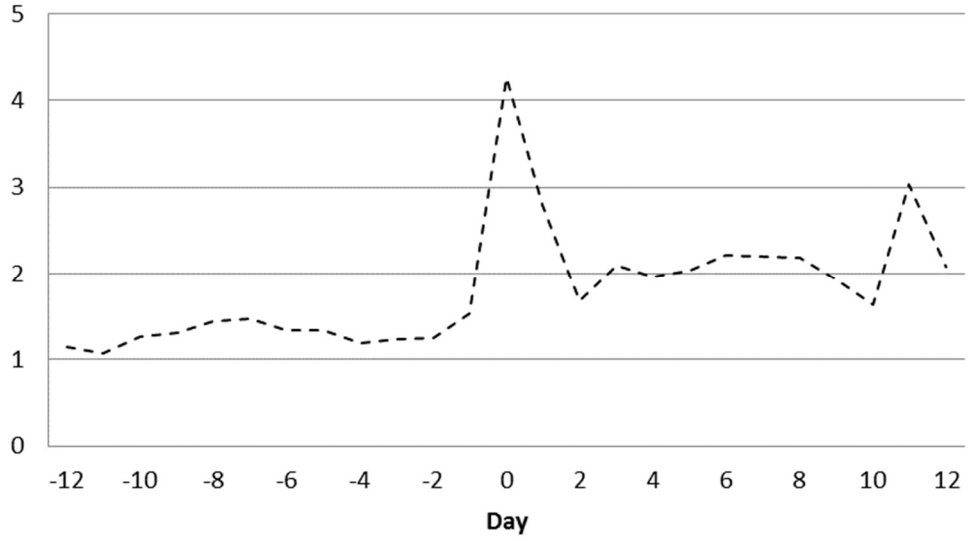


FIGURE 4 (continued)

Panel C: Mean share turnover to rumors



Panel D: Mean abnormal EDGAR information acquisition to rumors

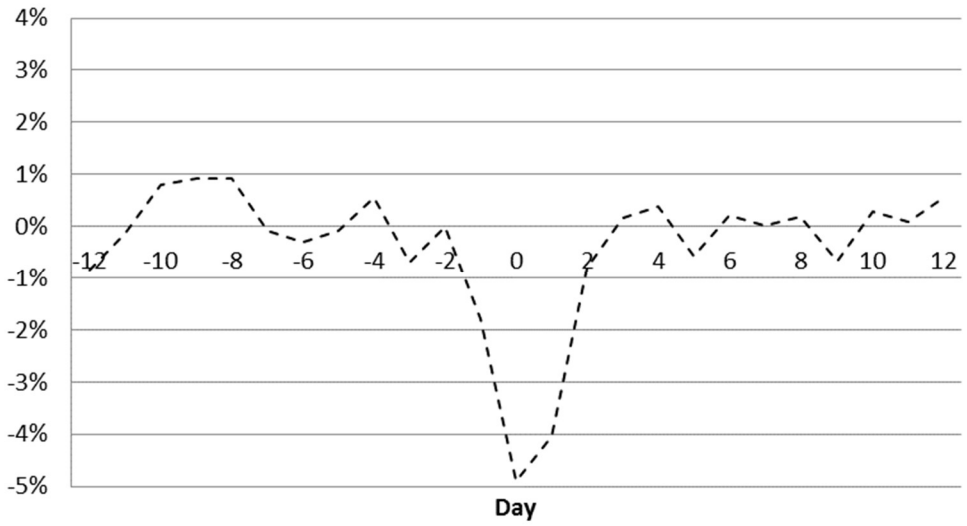


Notes: Panel A depicts the daily returns, Panel B the buy-and-hold daily returns accumulated from day -12, Panel C the share turnover, and Panel D the abnormal information acquisition through EDGAR during days [-12, +12] surrounding the announcement date. The dashed line represents 150 rumor observations from 1990 to 2014. Daily returns are raw returns. Buy-and-hold returns are calculated using raw daily returns. Share turnover is calculated as daily trading volume divided by common shares outstanding. Abnormal information acquisition is calculated as the number downloads of firm *i*'s 10-K, 10-Q, and 8-K filings on day *d* divided by the average daily downloads of those filing types over the previous 365 days. I exclude daily download counts made by any IP address that downloads more than 50 filings that day.

FIGURE 5 (continued on next page)

Market reaction to discontinuation announcements

Panel A: Mean daily returns to discontinuing strategic alternatives



Panel B: Mean buy-and-hold returns to discontinuing strategic alternatives

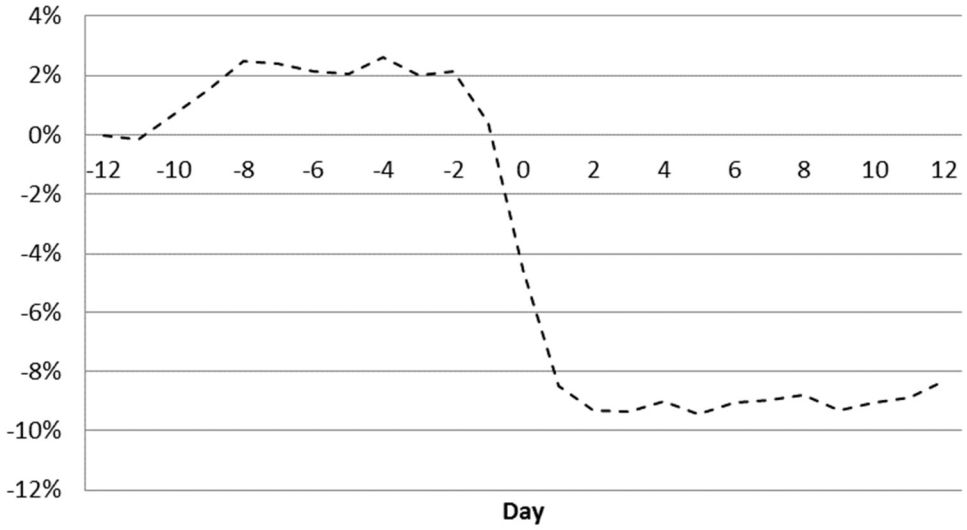
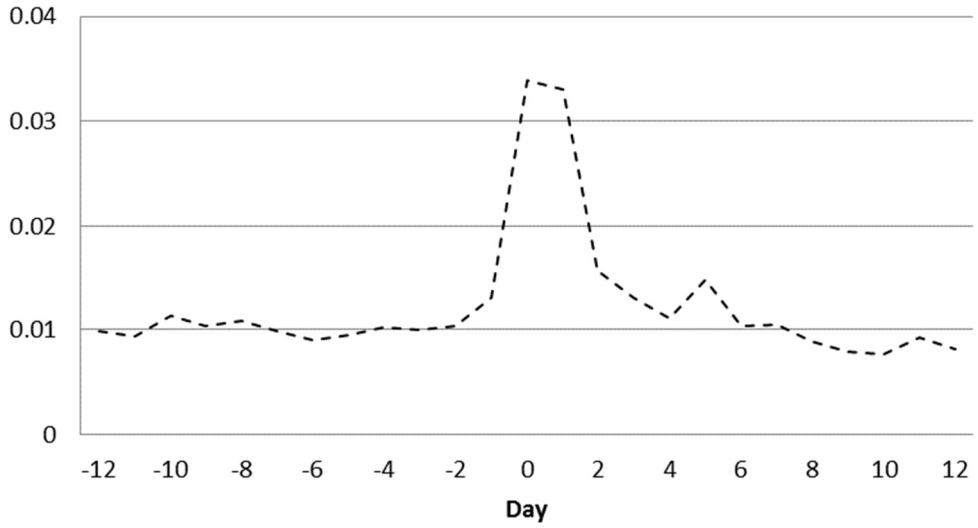
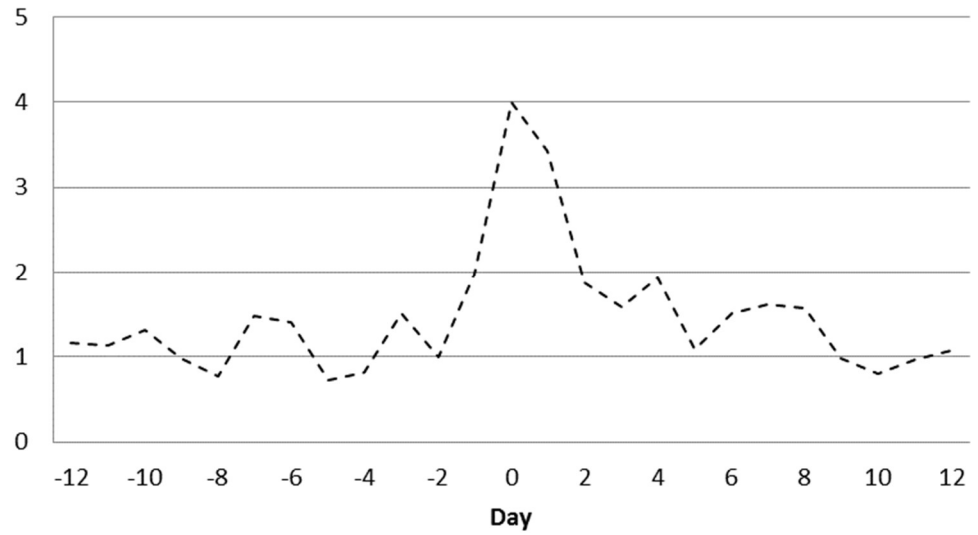


FIGURE 5 (continued)

Panel C: Mean share turnover to discontinuing strategic alternatives



Panel D: Mean abnormal EDGAR information acquisition to discontinuing strategic alternatives

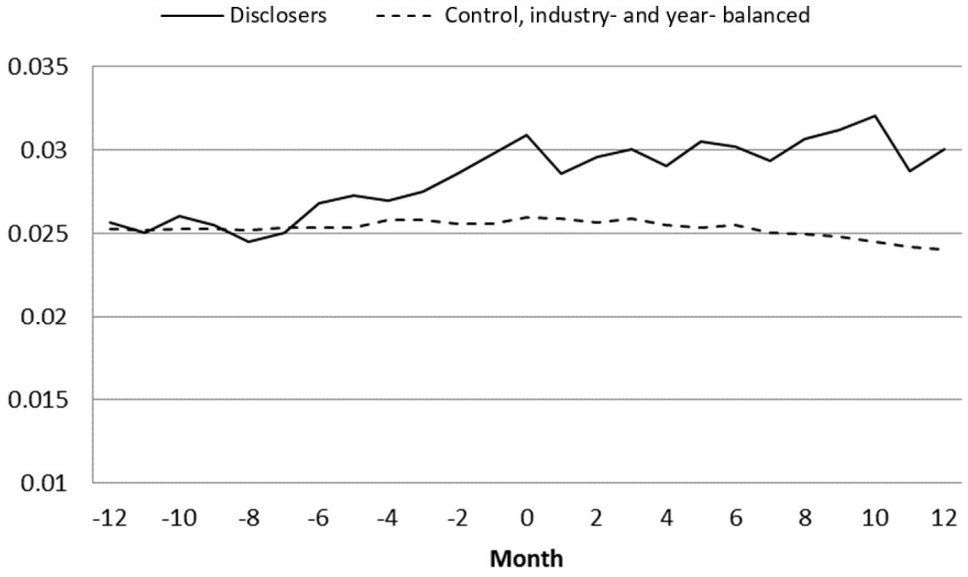


Notes: Panel A depicts the daily returns, Panel B the buy-and-hold daily returns accumulated from day -12, Panel C the share turnover, and Panel D the abnormal information acquisition through EDGAR during days [-12, +12] surrounding the announcement date. The dashed line represents 50 announcements discontinuing the evaluation of strategic alternatives from 1990 to 2014. Daily returns are raw returns. Buy-and-hold returns are calculated using raw daily returns. Share turnover is calculated as daily trading volume divided by common shares outstanding. Abnormal information acquisition is calculated as the number downloads of firm *i*'s 10-K, 10-Q, and 8-K filings on day *d* divided by the average daily downloads of those filing types over the previous 365 days. I exclude daily download counts made by any IP address that downloads more than 50 filings that day.

FIGURE 6 (continued on next page)

Information asymmetry measured by bid-ask spread

Panel A: Compared to industry- year peers



Panel B: Compared to full-entropy balanced control group

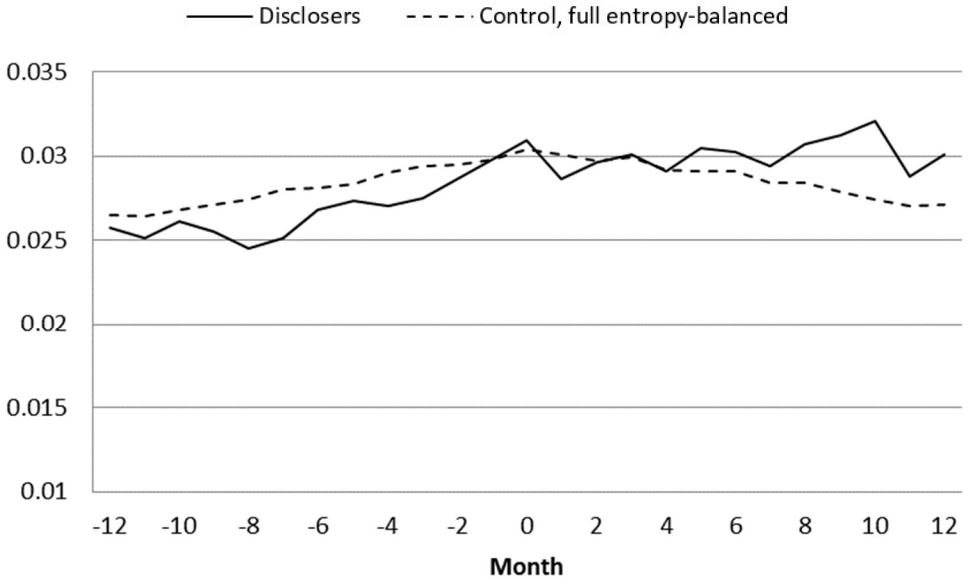
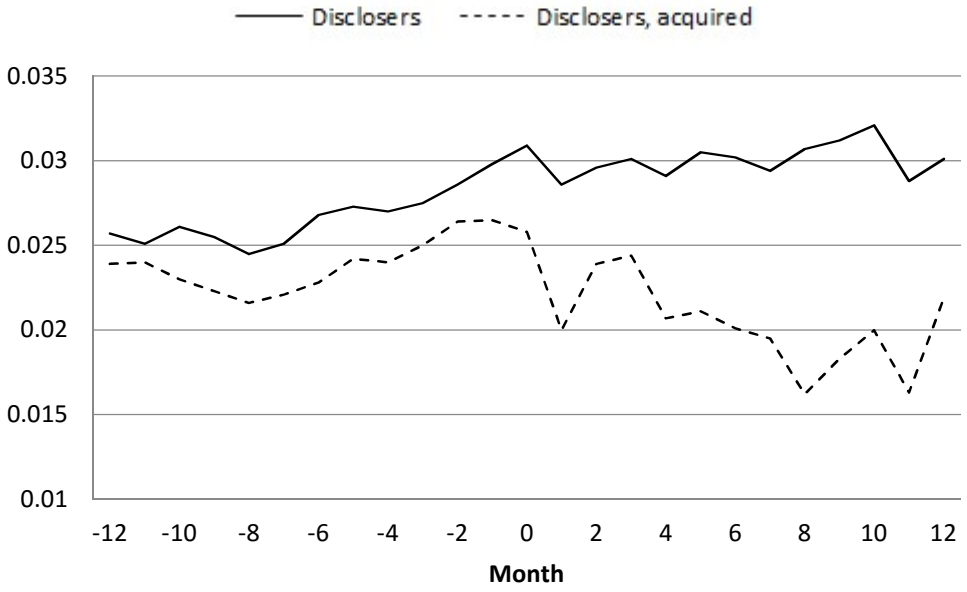


FIGURE 6 (continued)

Panel C: Compared to *ex-post* acquired firms

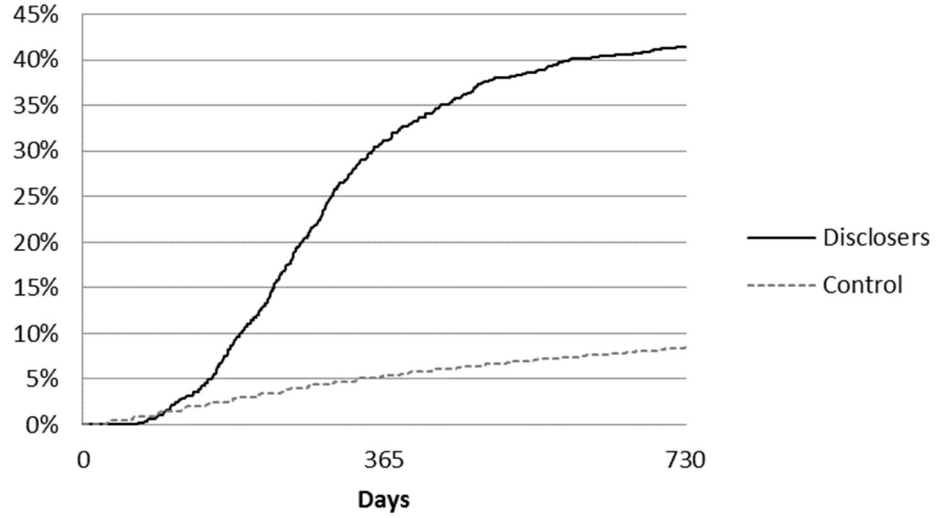


Notes: Monthly bid-ask spread is calculated as the ask price minus bid price divided by closing price, from the CRSP monthly file. Panel A depicts the bid-ask spread for the disclosure group (*DISC*=1) and industry- and year-balanced control group (*DISC*=0). Panel B depicts the bid-ask spread for the disclosure group (*DISC*=1) and full entropy-balanced control group (*DISC*=0). Panel C depicts the bid-ask spread for the disclosure group (*DISC*=1) and subset of 312 firms that are acquired within one year after the disclosure (*ACQ1YR*=1). The disclosure sample contains 990 observations and the control sample contains 64,421 observations from 1990 to 2014.

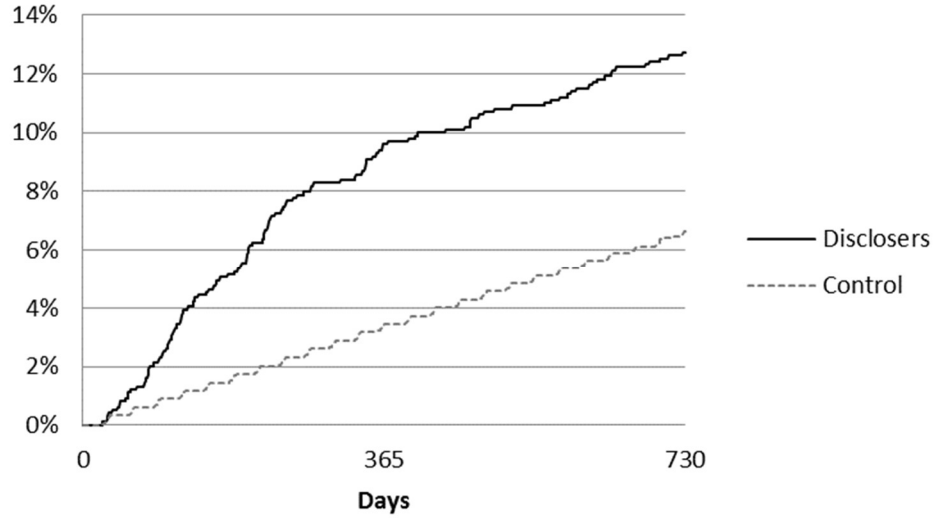
FIGURE 7

Outcomes within two years

Panel A: Percent of observations acquired



Panel B: Percent of observations liquidated



Notes: Panel A (B) depicts the percent of the disclosure group (*DISC*=1) and control group (*DISC*=0) that become acquired (liquidated) within 2 years after the announcement or pseudo-announcement date. Control observations are equally weighted, not entropy-balanced, in these figures. The disclosure sample contains 990 observations and the control sample contains 64,421 observations from 1990 to 2014.

FIGURE 8 (continued on next page)

Buy-and-hold cumulative daily returns

Panel A: Mean abnormal return to disclosure

Panel B: Mean raw returns

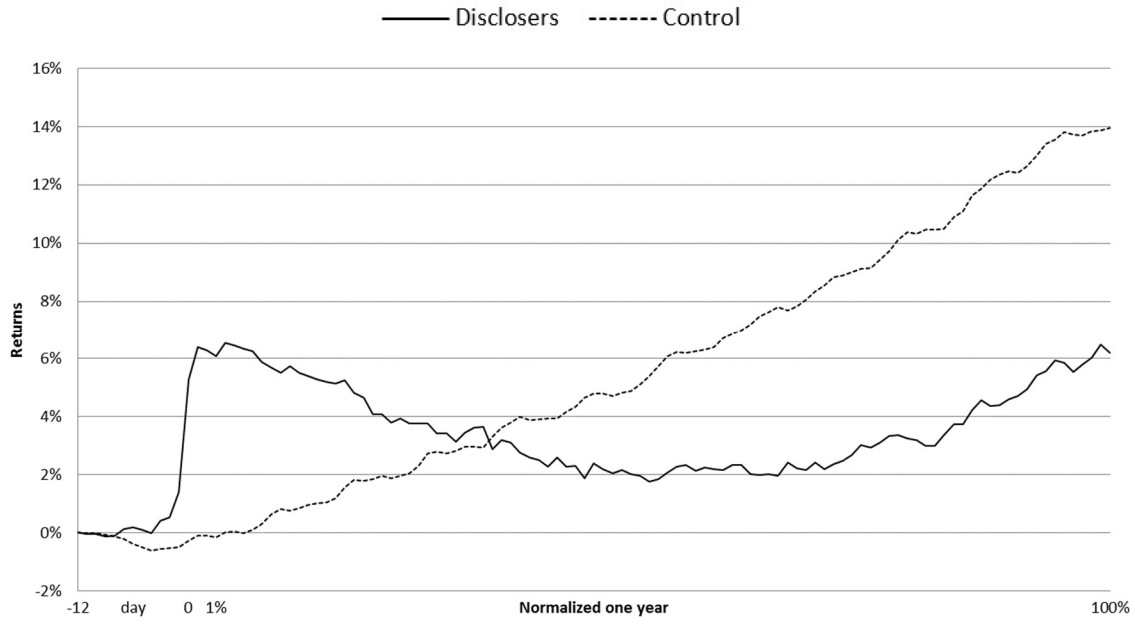
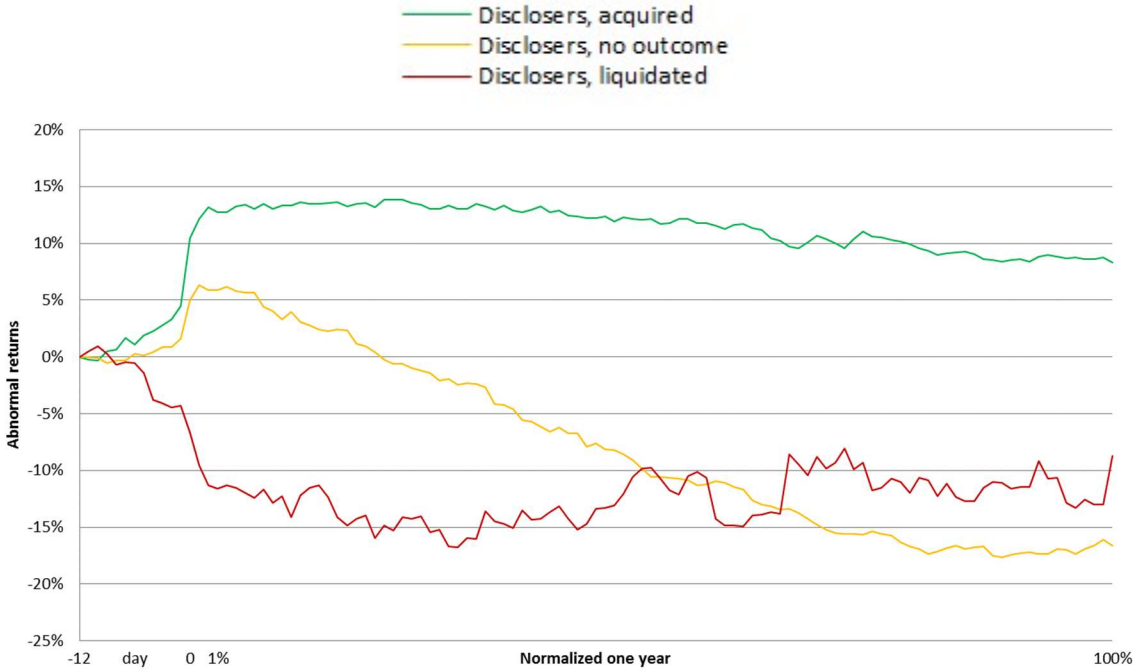


FIGURE 8 (continued on next page)

Panel C: Mean abnormal returns to disclosure, conditional on outcomes



Panel D: Mean raw returns, conditional on outcomes

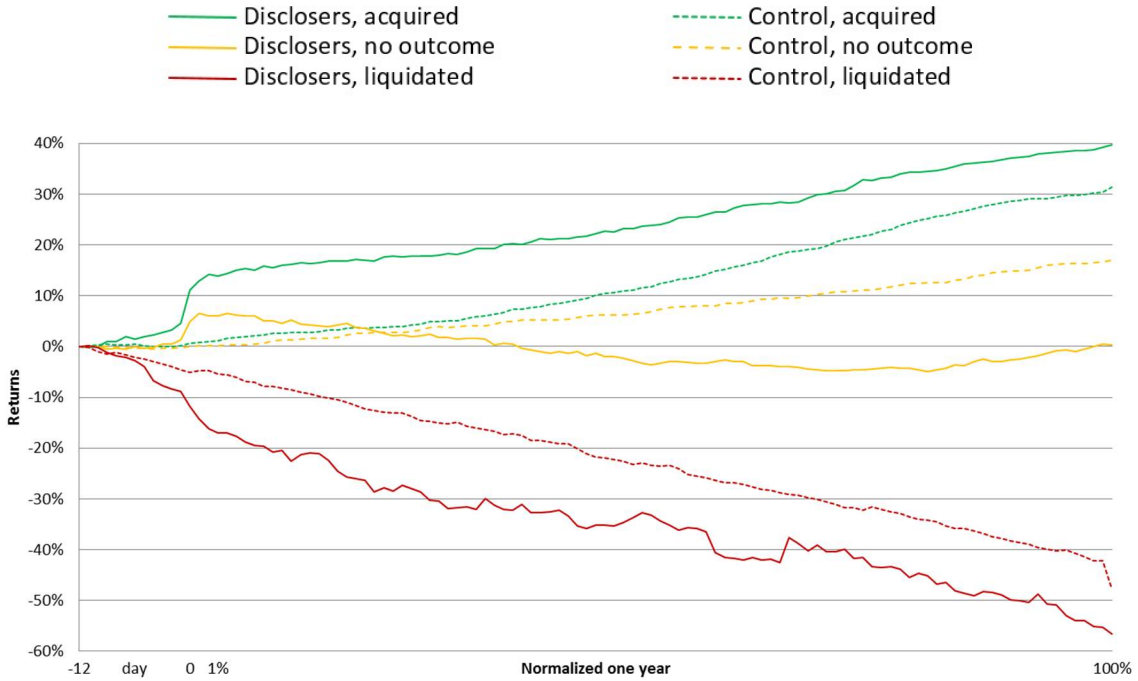


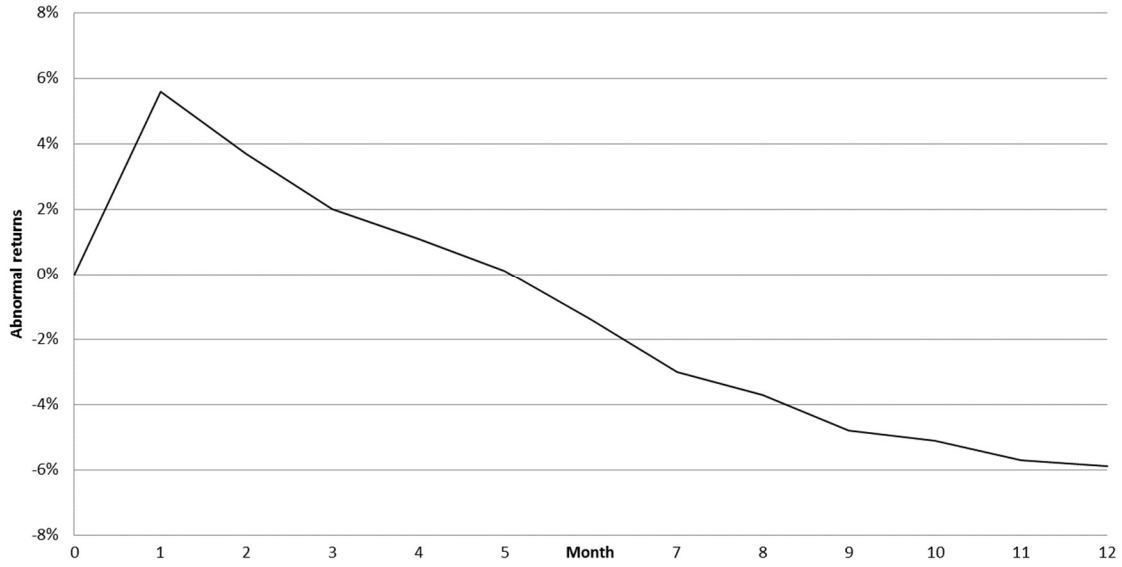
FIGURE 8 (continued)

Notes: Buy-and-hold daily returns are accumulated from day -12 to the end of a normalized one-year period. [-12,0] refers to day -12 to day 0, the announcement or pseudo-announcement date. [1%,100%] represents a normalized period for each observation, where 100% is the delisting date due to acquisition or liquidation if delisting occurs. For observations that do not experience an outcome within one year, [1%,100%] corresponds to the 252 trading days, or 365 calendar days, after the announcement or pseudo-announcement date. Control firms (*DISC*=0) are full entropy-balanced based on fundamental, market, risk, analyst expectation, and ownership characteristics in order to serve as the counterfactual to the disclosure group. Panel A depicts the mean abnormal return to disclosure, where the normal return is of the full entropy-balanced control group. Panel B depicts the raw returns of the disclosure sample and of the full entropy-balanced control sample. Panel C depicts the abnormal returns to disclosure conditional on being *ex-post* acquired, liquidated, or not having an outcome; the normal returns are the returns of the acquired, liquidated, or no outcome subsets of the full entropy-balanced control group. Panel D depicts the raw returns of six groups:
(1) disclosing observations that are acquired within one year after the announcement, to compare with
(2) control observations that are acquired within one year after the pseudo-announcement (full entropy-balanced);
(3) disclosing observations that do not have an outcome within one year after the announcement, to compare with
(4) control observations that do not have an outcome within one year after the pseudo-announcement (full entropy-balanced);
(5) disclosing observations that are liquidated within one year after the announcement, to compare with
(6) control observations that are liquidated within one year after the pseudo-announcement (full entropy-balanced).
The disclosure sample contains 990 observations and the control sample contains 64,421 observations from 1990 to 2014.

FIGURE 9 (continued on next page)

Buy-and-hold cumulative risk-adjusted monthly returns

Panel A: Mean abnormal risk-adjusted return to disclosure



Panel B: Mean risk-adjusted returns

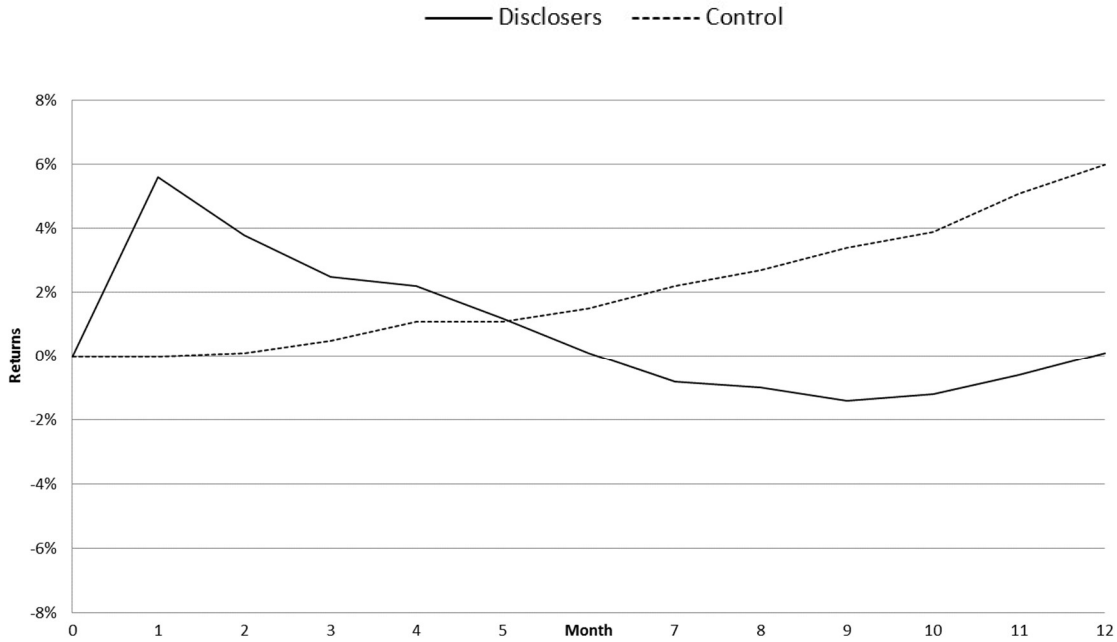
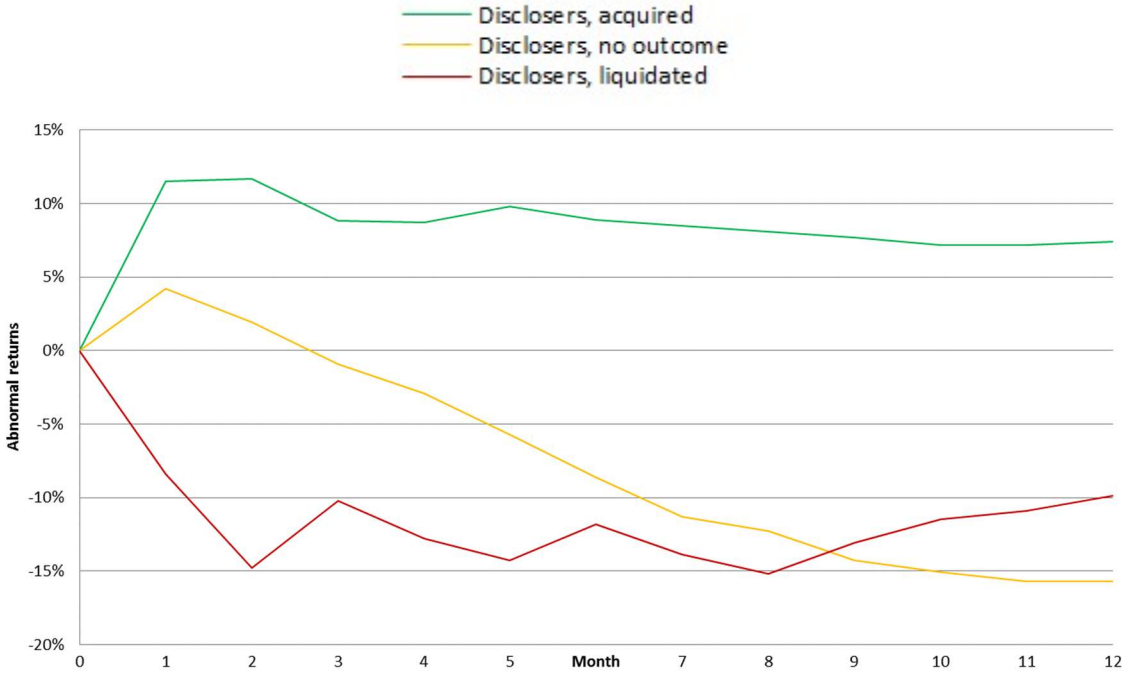


FIGURE 9 (continued on next page)

Panel C: Mean abnormal risk-adjusted returns to disclosure, conditional on outcomes



Panel D: Mean risk-adjusted returns, conditional on outcomes

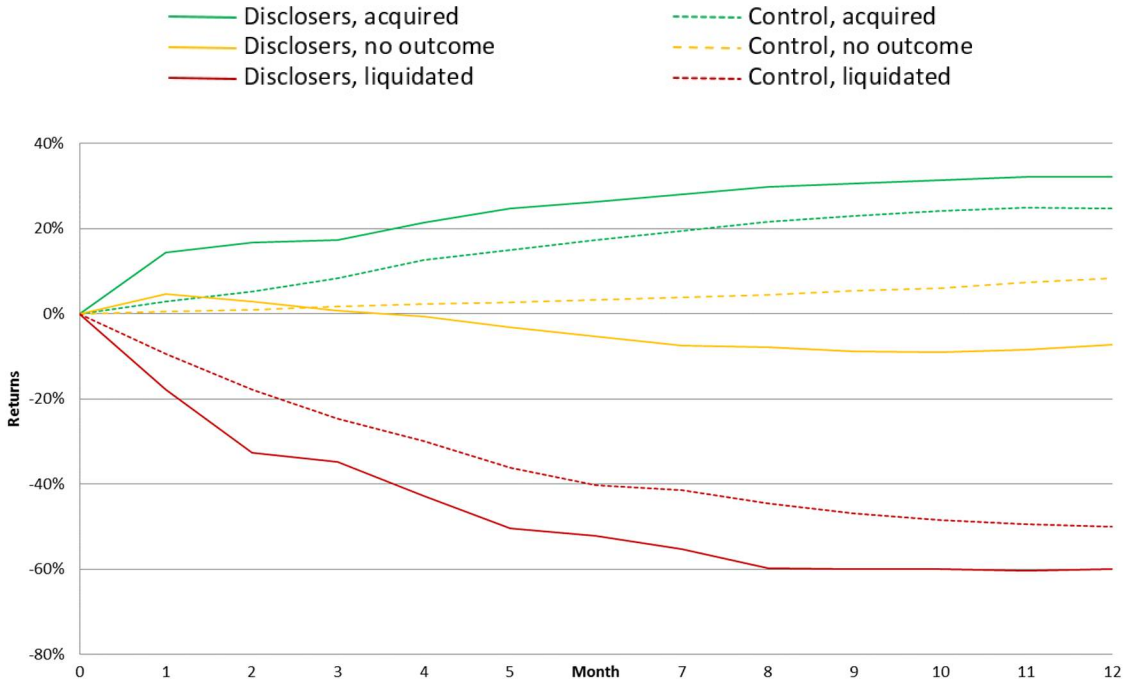
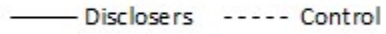


FIGURE 9 (continued)

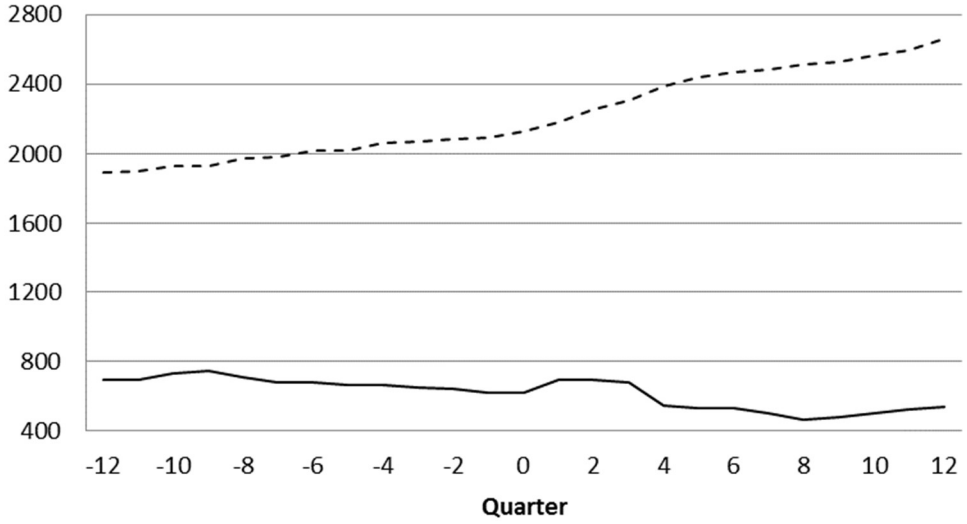
Notes: Buy-and-hold risk-adjusted monthly returns are accumulated from the beginning of month 1 (equivalent to the end of month 0) to the end of month 12 where the announcement or pseudo-announcement date occurs during month 1. The adjustment is for market, i.e. CAPM, systematic risk. For observations that are delisted within this window due to acquisition (*ACQ1YR*=1) or liquidation (*LIQ1YR*=1), the returns stop accumulating but the observation stays in the portfolio without being reinvested. Control firms (*DISC*=0) are full entropy-balanced based on fundamental, market, risk, analyst expectation, and ownership characteristics in order to serve as the counterfactual to the disclosure group. Panel A depicts the mean abnormal risk-adjusted return to disclosure, where the normal risk-adjusted return is of the full entropy-balanced control group. Panel B depicts the risk-adjusted returns of the disclosure sample and of the full entropy-balanced control sample. Panel C depicts the abnormal risk-adjusted returns to disclosure conditional on being *ex-post* acquired, liquidated, or not having an outcome; the normal risk-adjusted returns are the risk-adjusted returns of the acquired, liquidated, or no outcome subsets of the full entropy-balanced control group. Panel D depicts the risk-adjusted returns of six groups:
(1) disclosing observations that are acquired within one year after the announcement, to compare with
(2) control observations that are acquired within one year after the pseudo-announcement (full entropy-balanced);
(3) disclosing observations that do not have an outcome within one year after the announcement, to compare with
(4) control observations that do not have an outcome within one year after the pseudo-announcement (full entropy-balanced);
(5) disclosing observations that are liquidated within one year after the announcement, to compare with
(6) control observations that are liquidated within one year after the pseudo-announcement (full entropy-balanced).
The disclosure sample contains 990 observations and the control sample contains 64,421 observations from 1990 to 2014.

FIGURE 10 (continued on next page)

Fundamental firm characteristics



Panel A: Market value ($M), where the control group is industry- and year- balanced



Panel B: Market value ($M), where the control group is full entropy-balanced

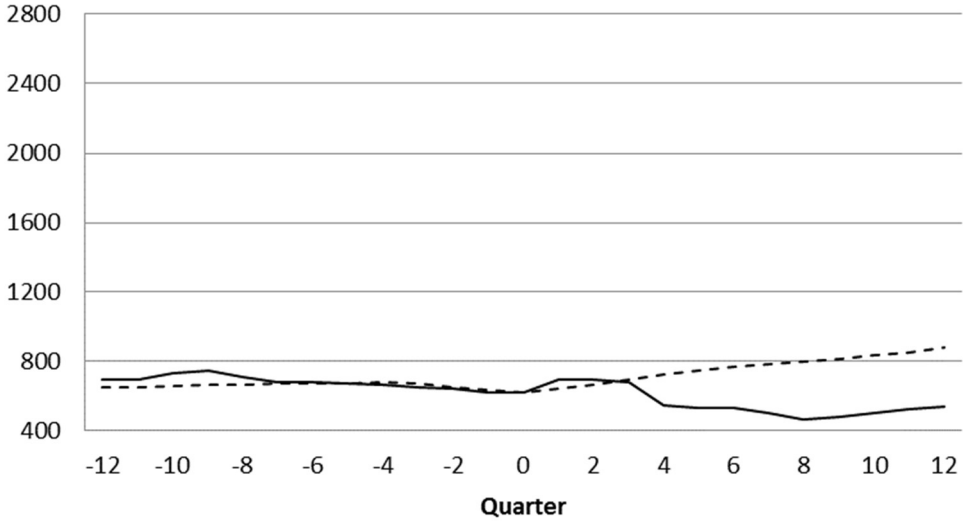
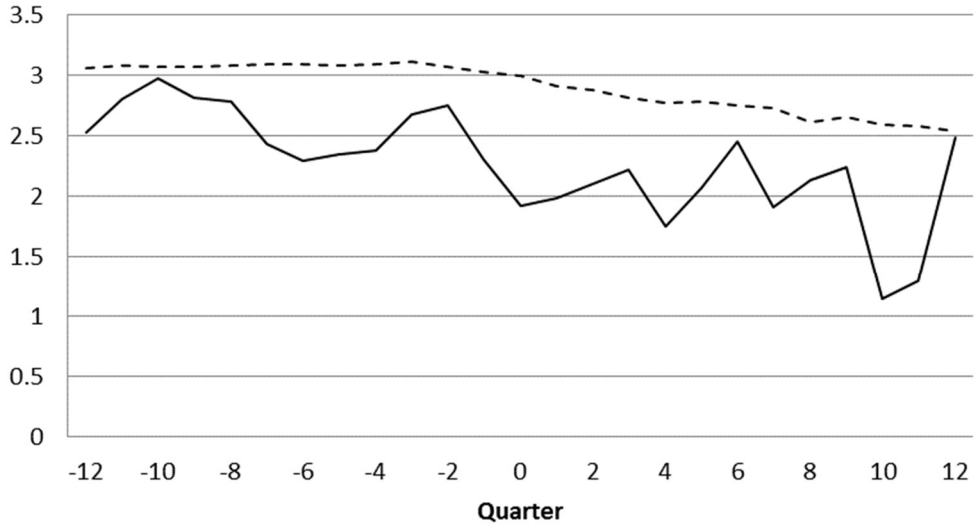


FIGURE 10 (continued on next page)

Panel C: Market-to-book ratio, where the control group is industry- and year- balanced



Panel D: Market-to-book ratio, where the control group is full entropy-balanced

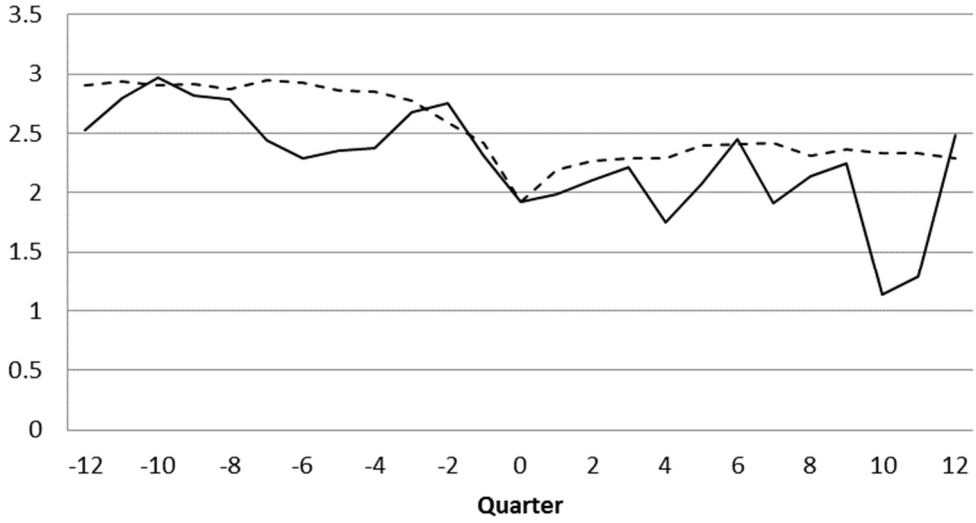
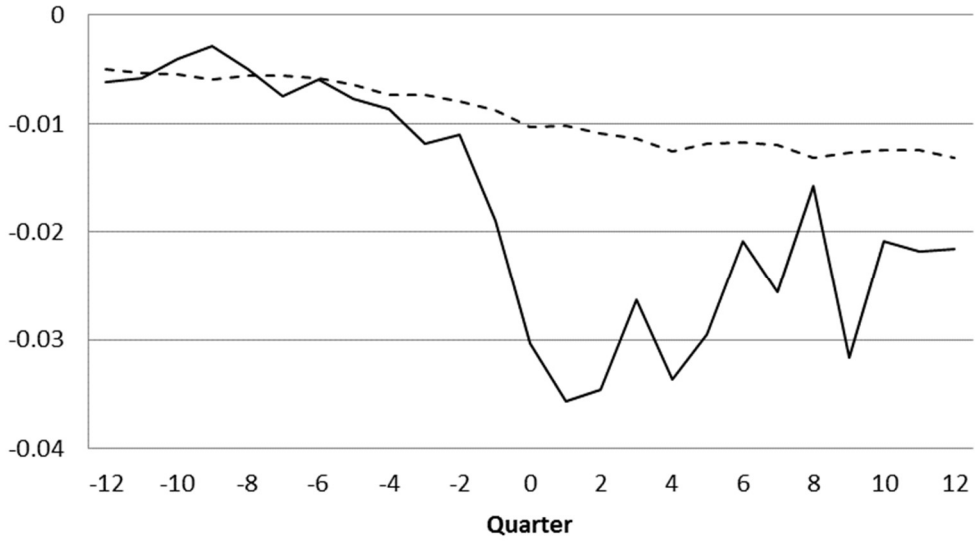


FIGURE 10 (continued on next page)

Panel E: Net income (*ROA*), where the control group is industry- and year- balanced



Panel F: Net income (*ROA*), where the control group is full entropy-balanced

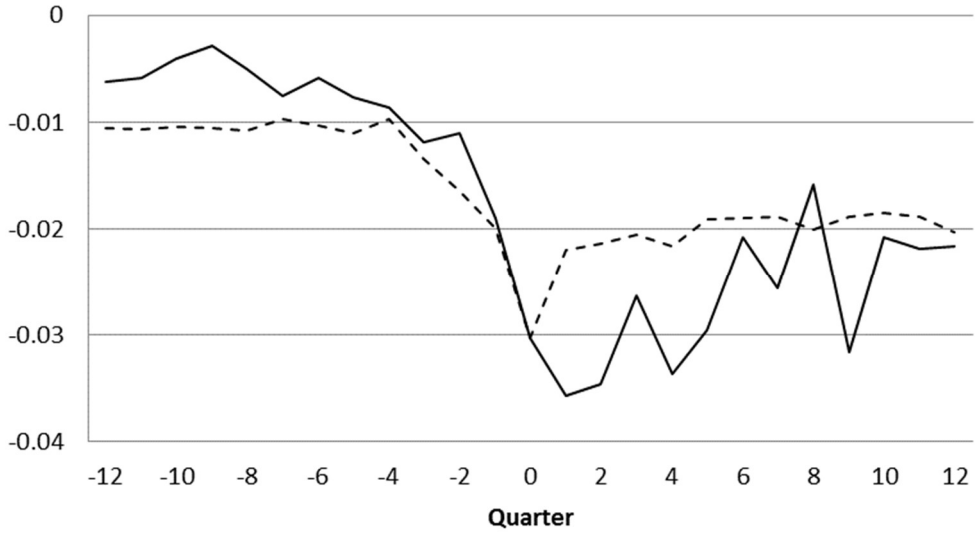
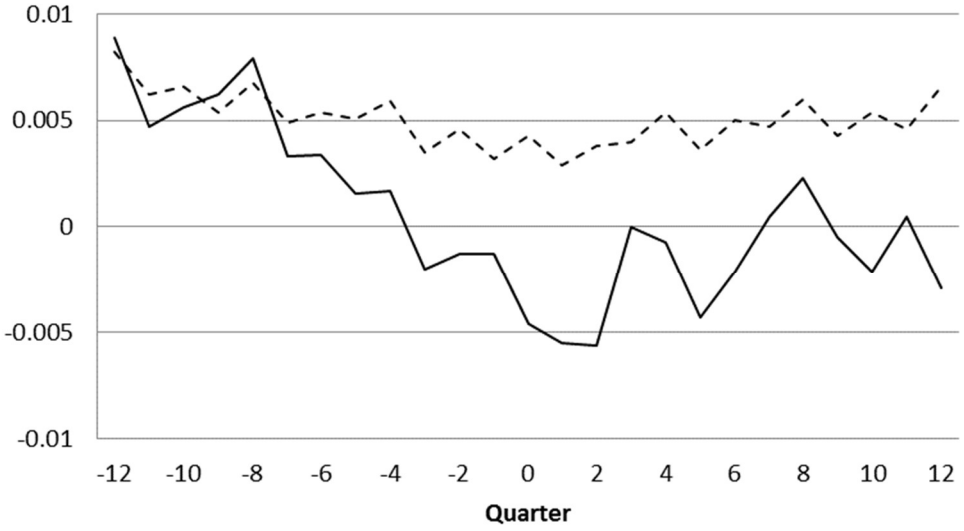


FIGURE 10 (continued on next page)

Panel G: CFO, where the control group is industry- and year- balanced



Panel H: CFO, where the control group is full entropy-balanced

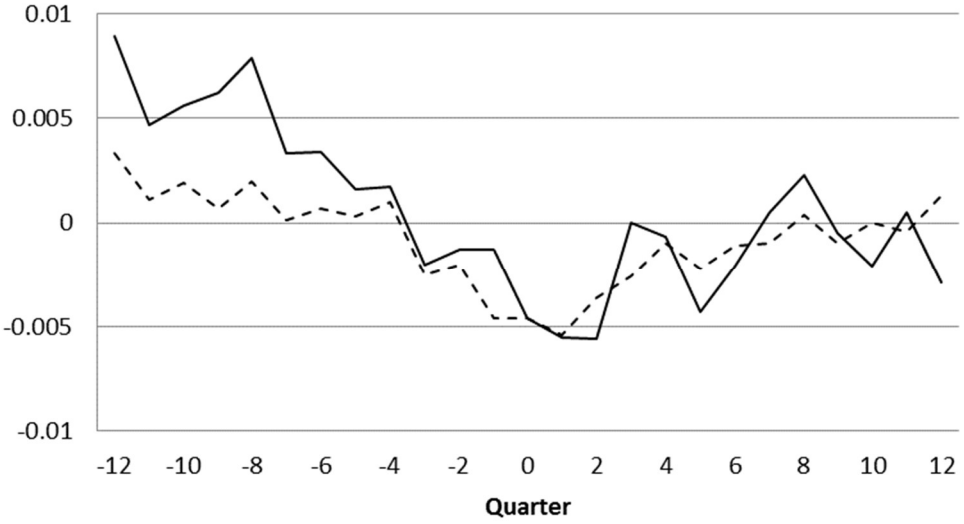
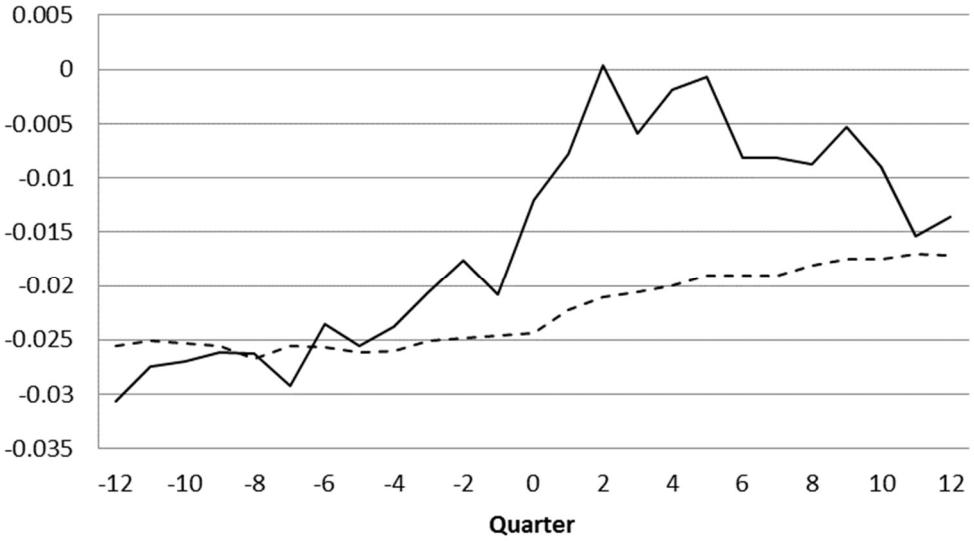


FIGURE 10 (continued on next page)

Panel I: CFI, where the control group is industry- and year- balanced



Panel J: CFI, where the control group is full entropy-balanced

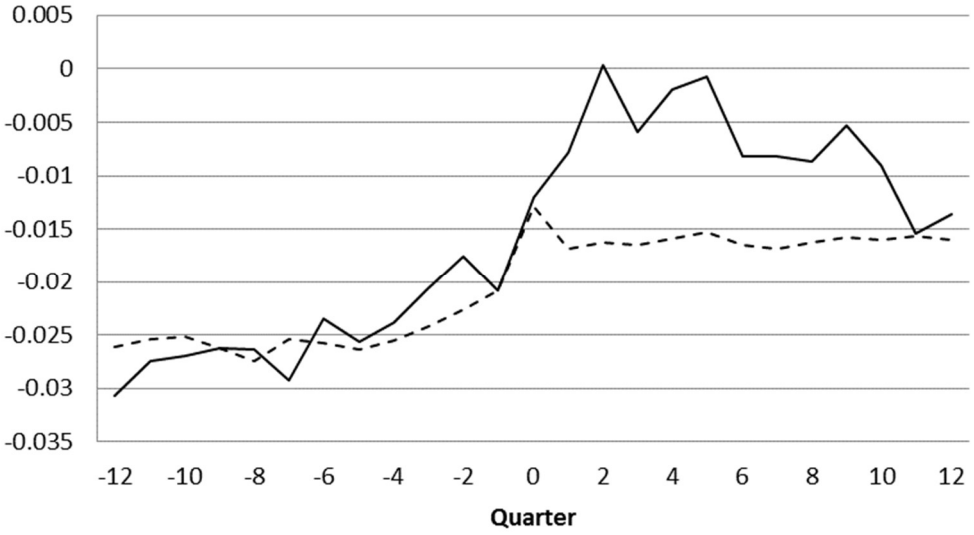
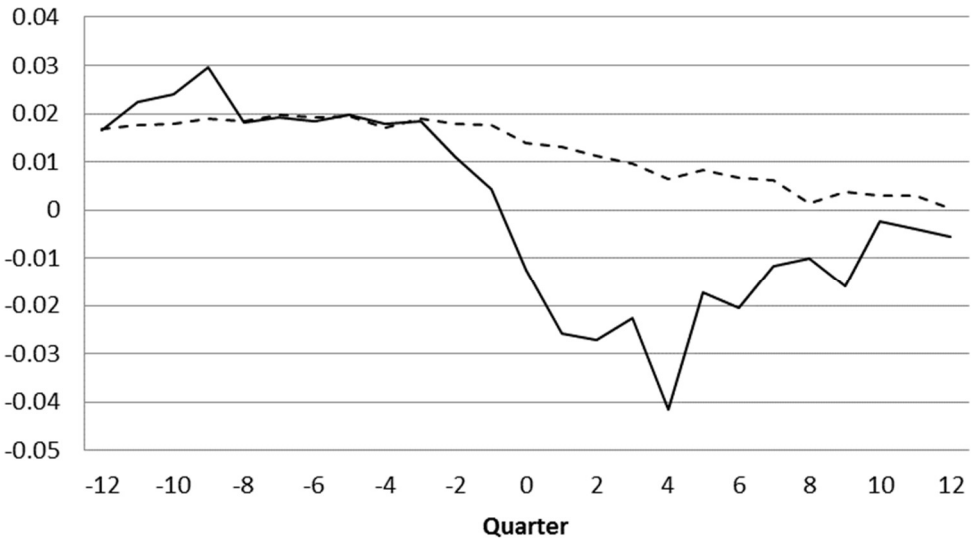
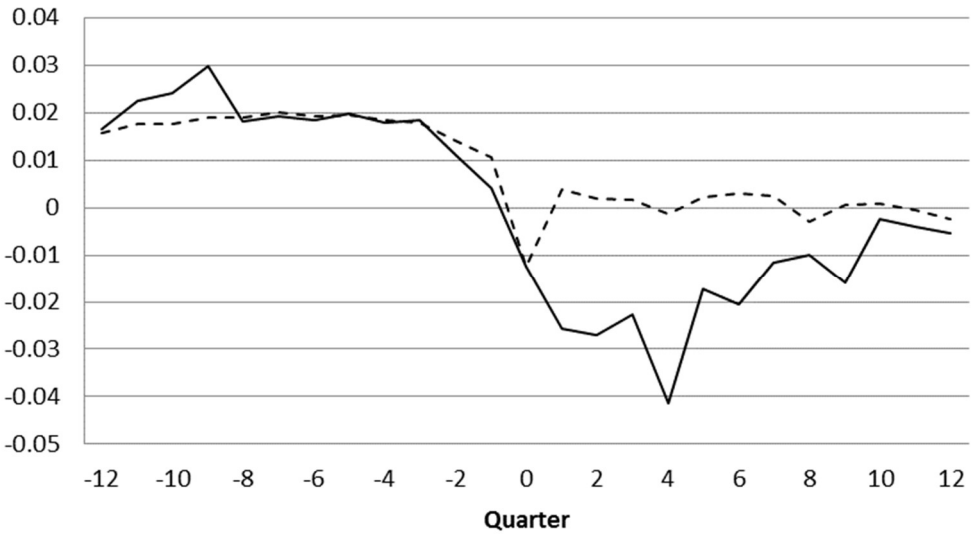


FIGURE 10 (continued)

Panel K: Operating accruals, where the control group is industry- and year- balanced



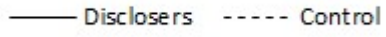
Panel L: Operating accruals, where the control group is full entropy-balanced



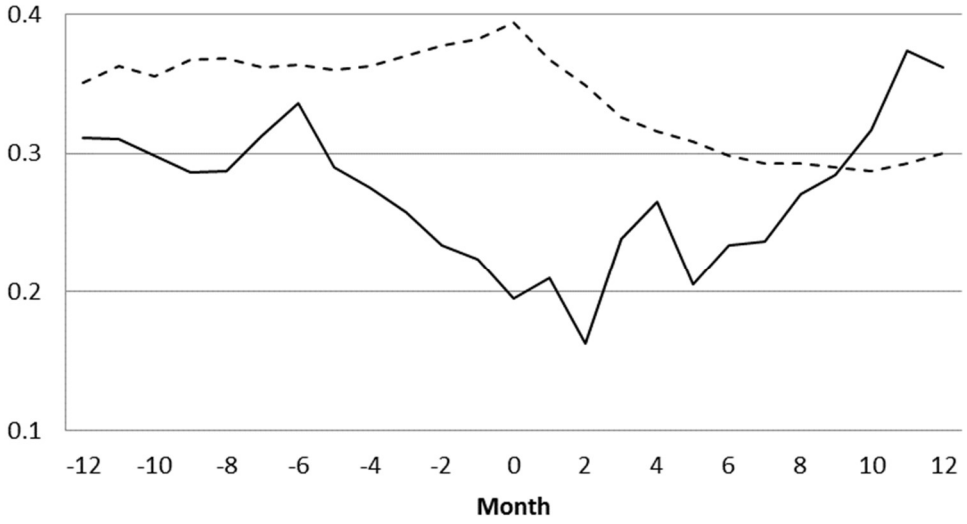
Notes: Figure 10 depicts quarterly firm characteristics during quarters -12 to +12, where quarter 0 is the quarter-end of the most recent financial statements at the time of the announcement or pseudo-announcement. Time series are presented for the disclosure sample of 990 observations and the control sample of 64,421 observations, with industry- and year- balancing (in Panels A, C, E, G) and full entropy-balancing (in Panels, B, D, F, H). Panels A and B depict market value in millions ($MKVAL_{iq}$). Panels C and D depict the market-to-book ratio (MTB_{iq}). Panels E and F depict the quarterly sales revenue over average assets (REV_{iq}). Panels G and H depict quarterly cash flows from operations over average assets (CFO_{iq}). Observations that are acquired or delisted will drop out of the time series at the respective quarter.

FIGURE 11 (continued on next page)

Information intermediaries and corporate governance



Panel A: Consensus analyst estimate, where the control group is industry- and year- balanced



Panel B: Consensus analyst estimate, where the control group is full entropy-balanced

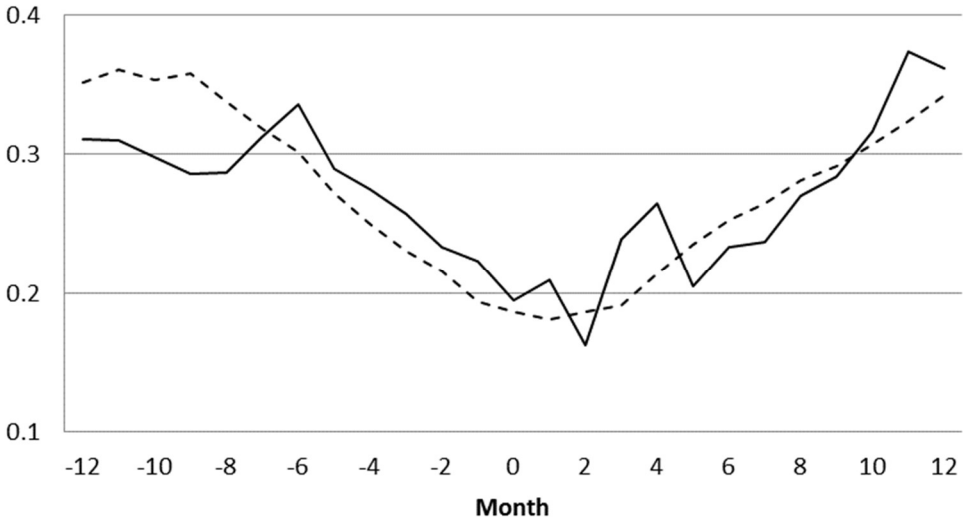
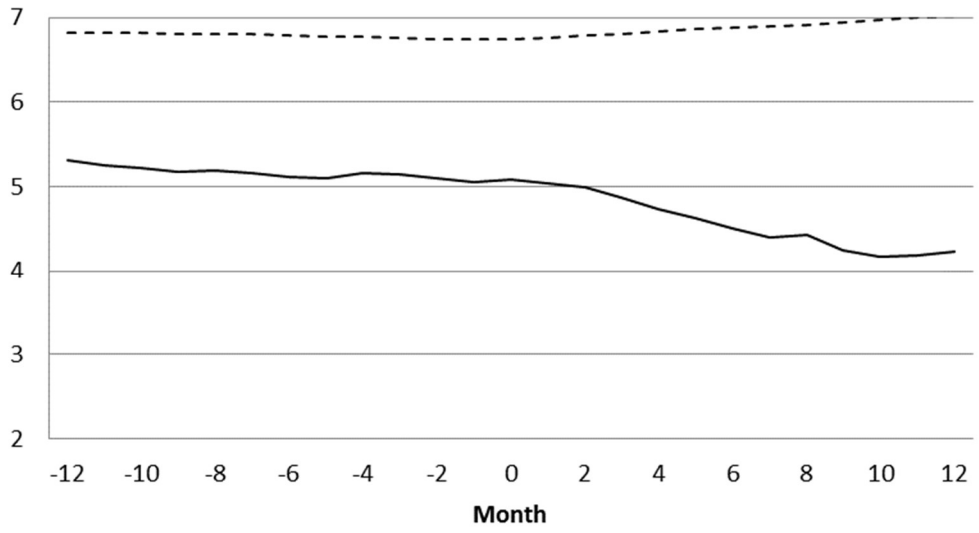


FIGURE 11 (continued on next page)

Panel C: Number of analyst following, where the control group is industry- and year- balanced



Panel D: Number of analyst following, where the control group is full entropy-balanced

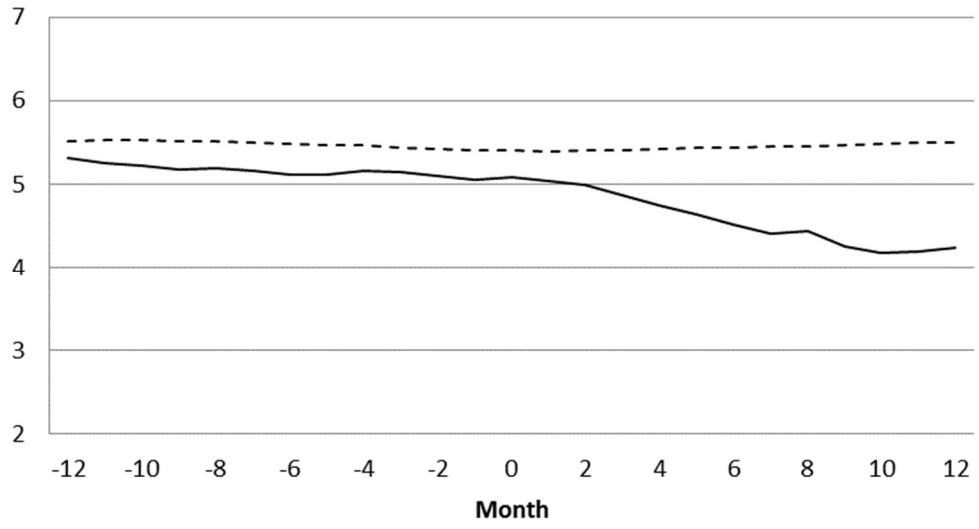
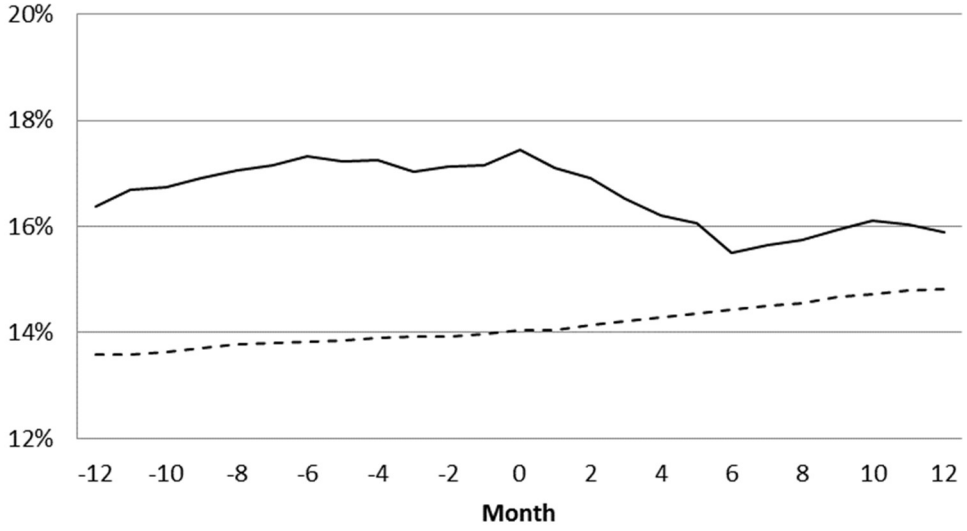


FIGURE 11 (continued on next page)

Panel E: Institutional blockholder ownership %, where the control group is industry- and year- balanced



Panel F: Institutional blockholder ownership %, where the control group is full entropy-balanced

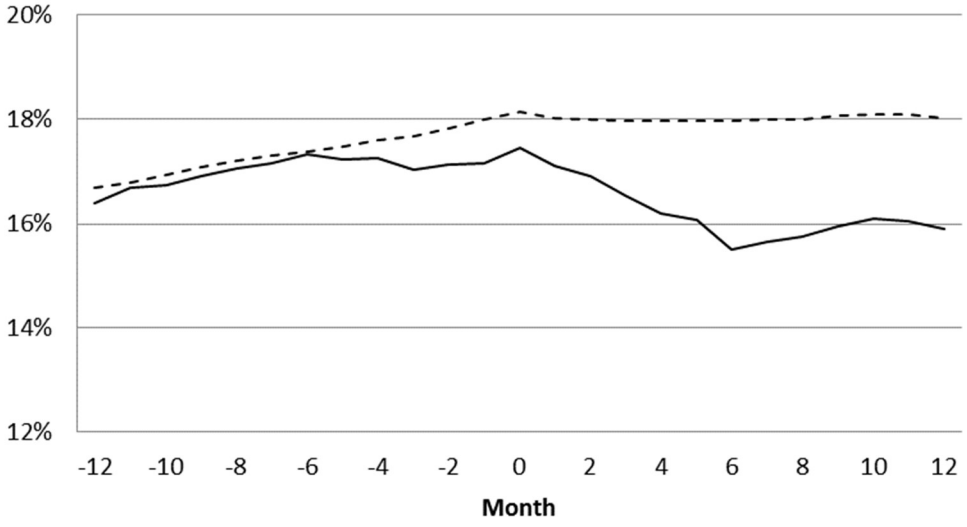
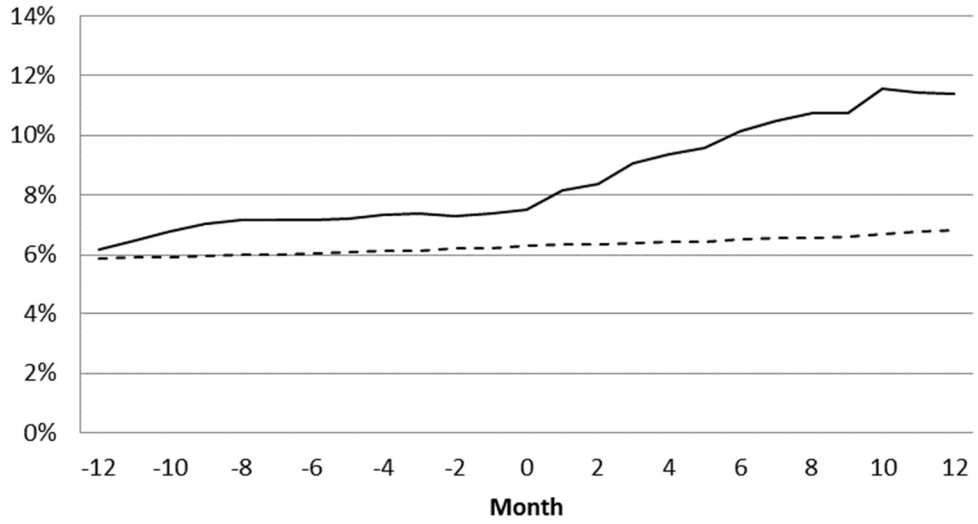


FIGURE 11 (continued on next page)

Panel G: Activist ownership %, where the control group is industry- and year- balanced



Panel H: Activist ownership %, where the control group is full entropy-balanced

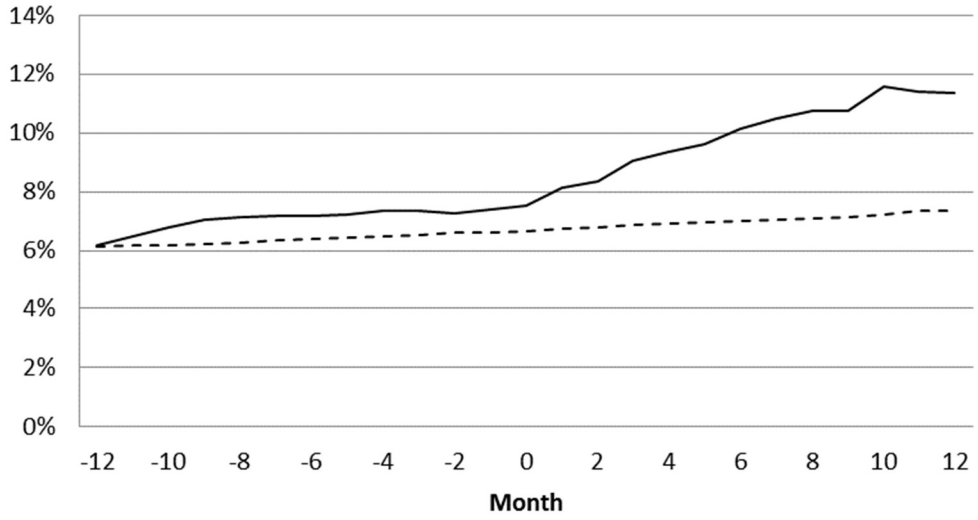
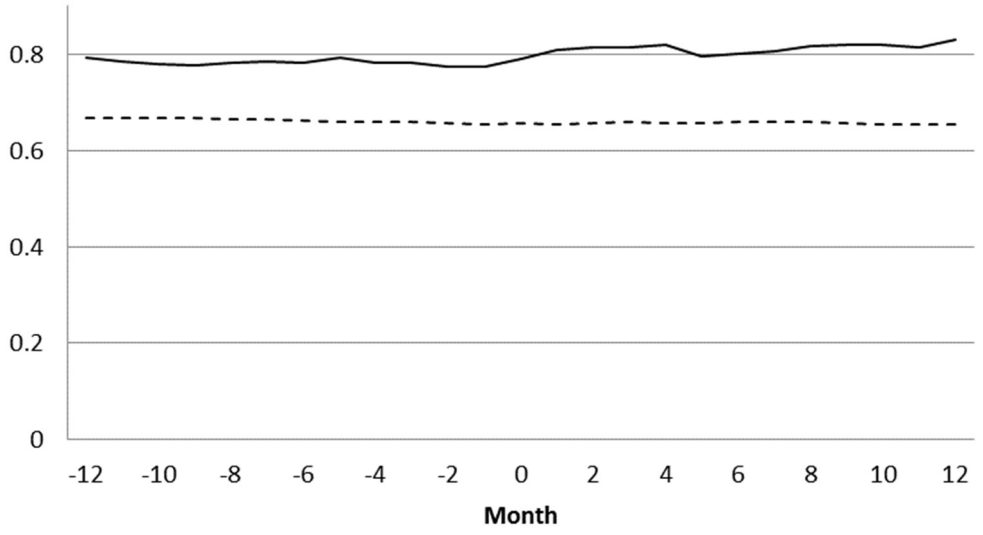


FIGURE 11 (continued on next page)

Panel I: Golden parachute, where the control group is industry- and year- balanced



Panel J: Golden parachute, where the control group is full entropy-balanced

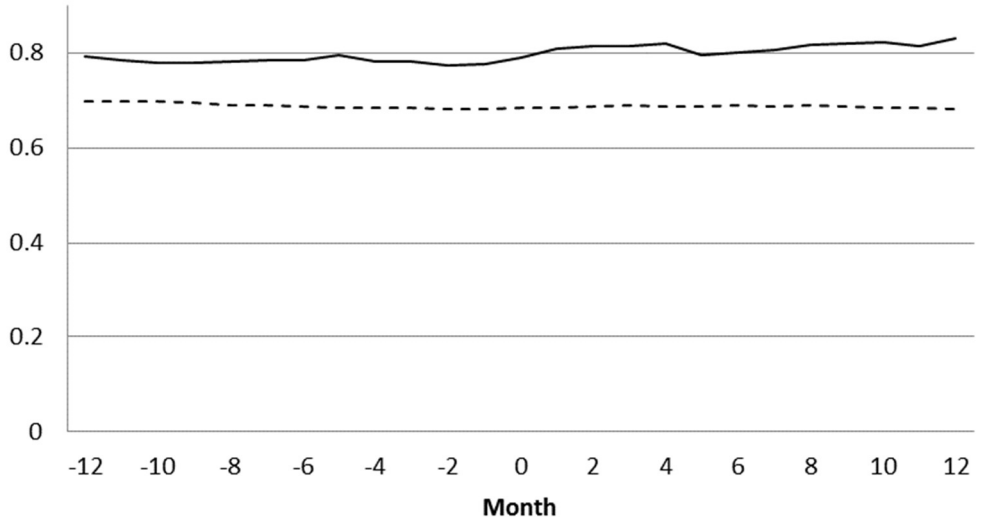
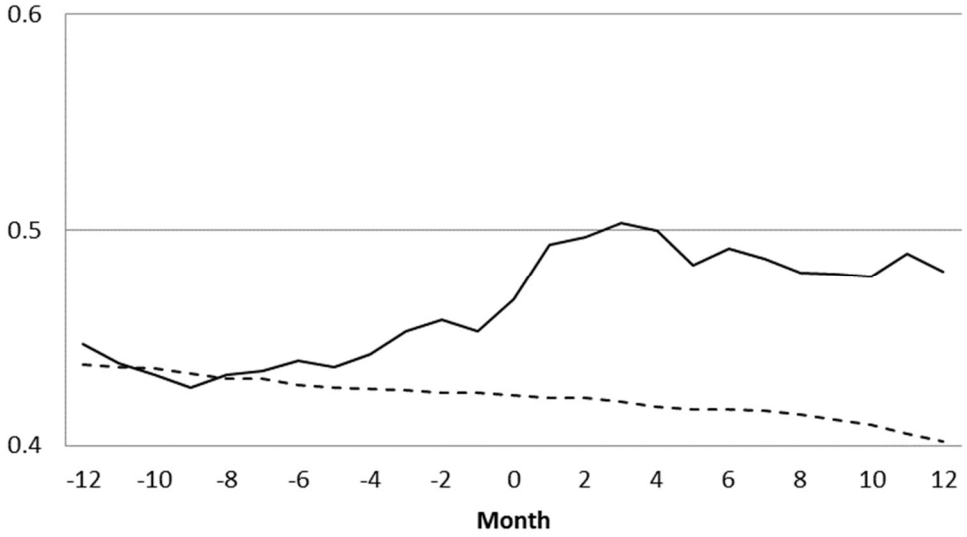
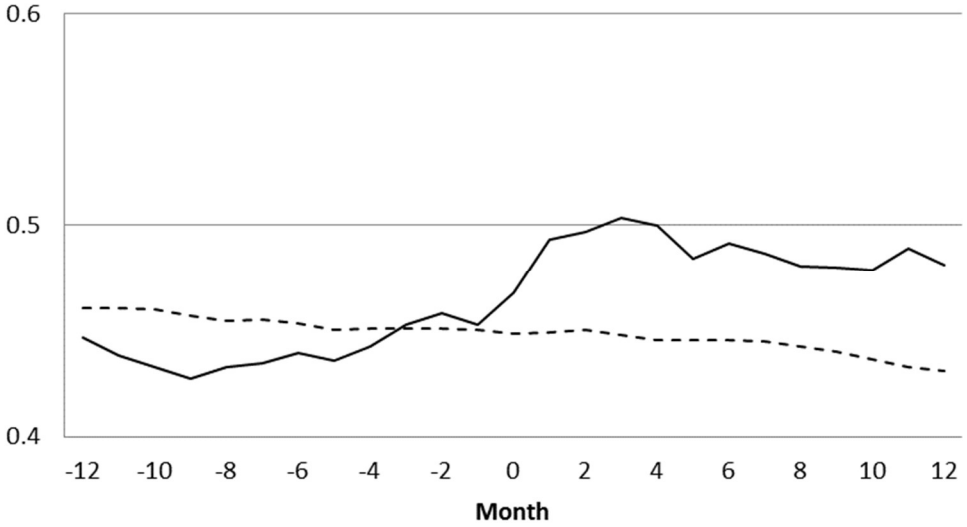


FIGURE 11 (continued)

Panel K: Poison pill, where the control group is industry- and year- balanced



Panel L: Poison pill, where the control group is full entropy-balanced



Notes: Figure 7 depicts monthly firm characteristics related to corporate governance during months -12 to +12, where the announcement or pseudo-announcement occurs between months 0 and 1. Time series are presented for the disclosure sample of 990 observations and the control sample of 64,421 observations, with industry- and year-balancing. Panel A depicts the number of analyst following ($NUMANALYSTS_{im}$). Panel B depicts institutional ownership as a percent of common shares outstanding ($INSTOWN\%_{im}$). Panel C depicts the number of institutional blockholders ($INSTBLK_{im}$). Panel D depicts 13D activist ownership as a percent of common shares outstanding ($ACTIVISTOWN\%_{im}$). Panel E depicts golden parachutes ($PARACHUTE_{im}$). Panel F depicts poison pills ($POISONPILL_{im}$). Observations that are acquired or delisted will drop out of the time series at the respective month.

Tables

TABLE 1 (continued on next page)

Empirical distributions

	N	Mean	SD	Q1	Median	Q3
Disclosure						
$DISC_{it}$	65,411	0.015	0.123	0.000	0.000	0.000
Outcomes						
$ACQ1YR_{it}$	65,411	0.059	0.235	0.000	0.000	0.000
$ACQ2YR_{it}$	65,411	0.090	0.286	0.000	0.000	0.000
$LIQ1YR_{it}$	65,411	0.035	0.185	0.000	0.000	0.000
$LIQ2YR_{it}$	65,411	0.067	0.250	0.000	0.000	0.000
Fundamentals						
$MKVAL_{iq}$ *($M)*	65,411	2,041	6,766	46.422	198.124	928.054
MTB_{iq}	65,411	3.066	6.780	1.125	1.950	3.575
LEV_{iq}	65,411	0.514	0.348	0.277	0.490	0.704
$ASSETS_{iq}$ *($M)*	65,411	3,286	14,494	46.430	222.725	1,147
$CASH_{iq}$	65,411	0.215	0.396	0.027	0.101	0.326
$INTAN_{iq}$	65,411	0.071	0.152	0.000	0.000	0.048
ΔROA_{iq}	62,332	-0.002	0.105	-0.012	-0.000	0.008
ROA_{iq}	65,411	-0.016	0.102	-0.013	0.009	0.022
REV_{iq}	60,884	0.240	0.214	0.081	0.193	0.332
OI_{iq}	65,040	0.003	0.083	-0.001	0.019	0.040
CFO_{iq}	65,411	0.000	0.079	-0.015	0.011	0.035
CFI_{iq}	63,791	-0.023	0.077	-0.034	-0.012	-0.001
FCF_{iq}	65,411	-0.024	0.113	-0.045	-0.003	0.022
$OPACC_{iq}$	65,411	0.013	0.116	-0.020	0.007	0.040
$DIVYIELD_{iq}$	65,411	0.003	0.007	0.000	0.000	0.003
ΔREV_{iq+2}	55,817	-0.004	0.097	-0.024	0.000	0.0221
ΔOI_{iq+2}	59,539	-0.0021	0.070	-0.011	-0.000	0.008
Risk & returns						
$BETA_{iy}$	65,411	1.210	1.067	0.508	1.062	1.755
RET_{iy}	65,411	0.123	0.835	-0.285	0.016	0.321
RET_{iy+1}	65,411	0.165	0.954	-0.285	0.030	0.343
$CUMDRET_{iy+1}$	65,411	0.168	0.979	-0.292	0.031	0.351
RET_{iy+1}^{CAPM}	65,411	0.074	0.860	-0.311	-0.033	0.238
$RET_{iy+1}^{CAPM,12m}$	65,411	0.071	0.864	-0.324	-0.040	0.245
Analysts						
$ANALYSTEST_{im}$	31,456	0.379	1.409	-0.054	0.144	0.431
$NUMANALYSTS_{im}$	40,115	6.673	6.694	2.000	4.000	9.000
Ownership						
$INSTOWN\%_{im}$	51,163	0.408	0.302	0.131	0.368	0.664
$INSTBLKOWN\%_{im}$	51,158	0.134	0.140	0.000	0.096	0.218
$NUMINST_{im}$	50,904	90.207	142.202	13.000	43.000	110.000
$NUMINSTBLK_{im}$	51,163	1.561	1.543	0.000	1.000	3.000
$ACTIVISTOWN\%_{im}$	53,883	0.060	0.149	0.000	0.000	0.045
$NUMACTIVISTS_{im}$	53,883	0.377	0.685	0.000	0.000	1.000
$SHARESHELD_{im}$						

Governance						
$BLANKCHK_{im}$	12,976	0.907	0.290	1.000	1.000	1.000
$CBOARD_{im}$	12,935	0.531	0.499	0.000	1.000	1.000
$PARACHUTE_{im}$	12,671	0.668	0.471	0.000	1.000	1.000
$POISONPILL_{im}$	12,781	0.419	0.493	0.000	0.000	1.000
Sales process						
$EXISTSDC_{id}$	65,411	0.024	0.153	0.000	0.000	0.000
$EXISTRUMOR_{id}$	65,411	0.003	0.052	0.000	0.000	0.000

Notes: This table presents summary statistics of the pooled sample. The required variables are $DISC_{it}$, $MKVAL_{iq}$, MTB_{iq}, LEV_{iq}, $ASSETS_{iq}$, CHE_{iq}, $INTAN_{iq}$, ROA_{iq}, CFO_{iq}, FCF_{iq}, $OPACC_{iq}$, $BETA_{iy+1}$, and RET_{iy},. Non-required variables may have fewer numbers of observations. The sample consists of 65,411 firm-year observations from 1990 to 2014. See Appendix 3 for variable definitions.

TABLE 2

Correlations

	DISC	*MKVAL*	*MTB*	*LEV*	*ASSETS*	*ΔROA*	*ROA*	*FCF*	*OPACC*	*BETA*	RET_{iy}	RET_{iy+1}
$DISC_{it}$		-0.03***	-0.02***	0.02***	-0.02***	-0.02***	-0.02***	0.01**	-0.03***	-0.01*	-0.03***	-0.02***
$MKVAL_{iq}$	-0.03***		0.05***	0.05***	0.70***	0.00	0.10***	0.07***	0.01***	-0.02***	0.04***	-0.02***
MTB_{iq}	-0.05***	0.31***		-0.10***	-0.02***	0.02***	-0.04***	-0.06***	0.04***	0.06***	0.15***	-0.03***
LEV_{iq}	0.02***	0.07***	-0.17***		0.13***	-0.08***	-0.15***	-0.00	-0.13***	-0.08***	-0.04***	-0.02***
$ASSETS_{iq}$	-0.01**	0.84***	-0.08***	0.38***		0.00	0.06***	0.05***	-0.00	-0.02***	-0.00	-0.01***
ΔROA_{iq}	-0.03***	0.06***	0.06***	0.01	0.04***		0.42***	0.08***	0.21***	0.01*	0.10***	0.02***
ROA_{iq}	-0.03***	0.33***	0.15***	-0.02***	0.26***	0.32***		0.39***	0.31***	-0.12***	0.12***	0.01***
FCF_{iq}	0.01	0.14***	-0.07***	0.03***	0.19***	0.10***	0.35***		-0.37***	-0.06***	0.00	0.04***
$OPACC_{iq}$	-0.02***	0.10***	0.15***	-0.08***	0.02***	0.11***	0.22***	-0.49***		-0.02***	0.09***	-0.03***
$BETA_{iy}$	-0.01*	0.10***	0.11***	-0.13***	-0.02***	-0.00	-0.12***	-0.06***	-0.01***		0.04***	0.04***
RET_{iy}	-0.05***	0.30***	0.30***	-0.01***	0.16***	0.23***	0.32***	0.08***	0.13***	-0.06***		-0.05***
RET_{iy+1}	-0.01***	0.07***	-0.08***	0.01**	0.10***	0.07***	0.15***	0.12***	-0.04***	-0.05***	0.05***	

Notes: This table presents Pearson correlations on the upper right and Spearman rank correlations on the lower left. Observations are not weighted in this table. ***, ** and * denote statistical significance at the 1, 5 and 10 percent levels, respectively, based on two-tailed tests. The sample consists of 65,411 firm-year observations from 1990 to 2014. See Appendix 3 for variable definitions.

TABLE 3 (continued on next page)

Disclosure and control groups

Panel A: Disclosure group (*DISC*=1) and control group (*DISC*=0)

	DISC=1 Disclosure group			*DISC*=0 No entropy balancing Control group			*DISC*=0 Industry- and year- balanced Control group			*DISC*=0 Full entropy-balanced Control group		
	N	Mean (a)	SD	N	Mean (b)	SD	N	Mean (c)	SD	N	Mean (d)	SD
$DISC_{it}$	990	1.000	0.000	64,421	0.000	0.000	64,421	0.000	0.000	64,421	0.000	0.000
$MKVAL_{iq}$	990	621	1,800	64,421	2,062	6,811	64,421	2,131	6,869	64,421	621	1,800
MTB_{iq}	990	1.921	7.231	64,421	3.083	6.771	64,421	2.995	6.546	64,421	1.921	7.230
LEV_{iq}	990	0.570	0.338	64,421	0.513	0.348	64,421	0.519	0.334	64,421	0.570	0.338
$ASSETS_{iq}$	990	1,106	3,648	64,421	3319	14595	64,421	3,138	13,623	64,421	1,106	3,649
ΔROA_{iq}	984	-0.021	0.114	61,348	-0.002	0.105	60,494	-0.001	0.097	61,348	-0.022	0.115
ROA_{iq}	990	-0.030	0.120	64,421	-0.015	0.102	64,421	-0.010	0.094	64,421	-0.030	0.120
REV_{iq}	973	0.248	0.218	59,911	0.240	0.214	59,911	0.269	0.230	59,911	0.254	0.221
OI_{iq}	980	-0.005	0.094	64,060	0.004	0.083	64,060	0.009	0.079	64,060	-0.005	0.094
CFO_{iq}	990	-0.005	0.084	64,421	0.000	0.079	64,421	0.004	0.076	64,421	-0.005	0.084
FCF_{iq}	990	-0.016	0.098	64,421	-0.024	0.113	64,421	-0.021	0.110	64,421	-0.016	0.098
$OPACC_{iq}$	990	-0.012	0.134	64,421	0.013	0.116	64,421	0.014	0.114	64,421	-0.012	0.134
$BETA_{iy}$	990	1.142	1.010	64,421	1.211	1.067	64,421	1.187	1.045	64,421	1.142	1.010
RET_{iy}	990	-0.091	0.607	64,421	0.126	0.838	64,421	0.124	0.828	64,421	-0.091	0.607
$ANALYSTEST_{im}$	517	0.195	1.491	30,939	0.382	1.408	30,939	0.395	1.400	30,939	0.187	1.532
$INSTBLKOWN\%_{im}$	845	0.175	0.160	50,313	0.134	0.140	50,313	0.140	0.143	50,313	0.181	0.163
$SHARESHELD_{im}$	803	0.079	0.160	52,288	0.100	0.190	52,288	0.104	0.195	52,288	0.079	0.159
I(YEAR1990)	990	0.031	0.174	64,421	0.033	0.178	64,421	0.031	0.174	64,421	0.031	0.174
I(IND1)	990	0.066	0.248	64,421	0.035	0.184	64,421	0.066	0.248	64,421	0.066	0.248

TABLE 3 (continued on next page)

Panel B: Differences between the disclosure group (*DISC*=1) and control group (*DISC*=0)

	T-tests for difference in means		
	No entropy balancing (b) – (a)	industry- year- balanced (c) – (a)	full entropy-balanced (d) – (a)
$DISC_{it}$	***	***	***
$MKVAL_{iq}$	***	***	.
MTB_{iq}	***	***	.
LEV_{iq}	***	***	.
$ASSETS_{iq}$	***	***	.
ΔROA_{iq}	***	***	.
ROA_{iq}	***	***	.
REV_{iq}	.	***	.
OI_{iq}	***	***	.
CFO_{iq}	***	***	.
FCF_{iq}	**	.	.
$OPACC_{iq}$	***	***	.
$BETA_{iy}$	**	.	.
RET_{iy}	***	***	.
$ANALYSTEST_{im}$	***	***	.
$INSTBLKOWN\%_{im}$	***	***	.
$SHARESHELD_{im}$	***	***	.
I(YEAR1990)	.	.	.
I(IND1)	***	.	.

Panel C: Disclosure group (*DISC*=1) and rumor group

	DISC=1 Disclosure group			Rumor group Involuntary disclosure			*T*-test
	N	Mean (a)	SD	N	Mean (e)	SD	(e) – (a)
$DISC_{it}$	990	1.000	0.000	150	0.000	0.000	***
$MKVAL_{iq}$	990	621.417	1,800	150	2401	2961	***
MTB_{iq}	990	1.921	7.231	150	2.956	5.345	**
LEV_{iq}	990	0.570	0.338	150	0.583	0.250	.
$ASSETS_{iq}$	990	1,106	3,648	150	6,134	19,915	***
ΔROA_{iq}	984	-0.021	0.114	149	0.001	0.044	***
ROA_{iq}	990	-0.030	0.120	150	0.006	0.038	***
REV_{iq}	973	0.248	0.218	143	0.232	0.190	.
OI_{iq}	980	-0.005	0.094	148	0.027	0.040	***
CFO_{iq}	990	-0.005	0.084	150	0.018	0.061	***
FCF_{iq}	990	-0.016	0.098	150	0.001	0.071	***
$OPACC_{iq}$	990	-0.012	0.134	150	0.009	0.075	***
$BETA_{iy}$	990	1.142	1.010	150	1.265	0.944	.
RET_{iy}	990	-0.091	0.607	150	0.102	0.536	***
$ANALYSTEST_{im}$	517	0.195	1.491	133	0.075	0.996	.
$INSTBLKOWN\%_{im}$	845	0.175	0.160	139	0.235	0.147	***
$SHARESHELD_{im}$	803	0.079	0.160	141	0.065	0.172	.
I(YEAR1990)	990	0.031	0.174	150	0.000	0.000	***
I(INDFF1)	990	0.066	0.248	150	0.040	0.197	.

TABLE 3 (continued)

Notes: Panel A presents summary statistics of key variables for the 990 disclosure observations (*DISC*=1) and 64,421 control observations (*DISC*=0), which are drawn from the same industry-years, using the Fama-French 48 industry classification. Industry- and year- balancing assigns a set of weights to the control observations such that the weights sum to 990 and the proportion of Fama-French 12 industries and calendar years are not statistically different between the disclosure group and "industry- and year- balanced" control group. Full entropy balancing is additionally based on $MKVAL_{iq}$, MTB_{iq}, LEV_{iq}, $ASSETS_{iq}$, ΔROA_{iq}, ROA_{iq}, CFO_{iq}, FCF_{iq}, $OPACC_{iq}$, $BETA_{iy+1}$, RET_{iy} , $ANALYSTEST_{im}$, $INSTBLKOWN\%_{im}$, and $SHARESHELD_{im}$. Full entropy balancing assigns a set of weights to the control observations such that the weights sum to 990 and the industries, years, and named characteristics are not statistically different between the disclosure group and "full entropy-balanced" control group, with respect to means and standard deviations. Panel B presents *t*-test results on the differences in means between the disclosure group (*DISC*=1) and control group (*DISC*=0), where either no weights, industry- and year- balanced weights or full entropy-balanced weights are used. Panel D presents summary statistics of key variables between the disclosure group (*DISC*=1) and a sample of firms that were rumored to be seeking strategic alternatives. The required variables are $DISC_{it}$, $MKVAL_{iq}$, MTB_{iq}, LEV_{iq}, $ASSETS_{iq}$, ROA_{iq}, CFO_{iq}, FCF_{iq}, $OPACC_{iq}$, $BETA_{iy+1}$, RET_{iy}, and $EXISTSDC_{id}$. Non-required variables have fewer numbers of observations. *I(YEAR1990)* is an indicator variable =1 if the observation is in 1990, and =0 otherwise. *I(IND1)* is an indicator variable =1 if the observation is in the Fama-French industry 1, using the Fama-French 12 industry classification, and =0 otherwise. ***, ** and * denote statistical significance at the 1, 5 and 10 percent levels, respectively, from *t*-tests of differences in means. The sample consists of 65,411 firm-year observations from 1990 to 2014. See Appendix 3 for variable definitions.

TABLE 4 (continued on next page)

Short window announcement return and information acquisition

Panel A: Market reaction to disclosure

		Dependent variable =			
		$3DAYRET_{id}$		$EDGAR_{id}$	
		(1)	(2)	(3)	(4)
	Intercept	0.003***	0.021**	-1.399**	-2.150**
		(2.849)	(2.385)	(-2.176)	(-2.312)
	$DISC_{it}$	0.055***	0.055***	6.394***	6.442***
		(4.406)	(4.505)	(6.508)	(6.453)
Fundamentals	$MKVAL_{iq}$		0.000***		0.000
			(3.763)		(0.169)
	MTB_{iq}		-0.001**		-0.007
			(-2.309)		(-0.353)
	LEV_{iq}		-0.012		0.939*
			(-1.312)		(1.722)
	ΔROA_{iq}		0.111***		-2.675*
			(2.445)		(-1.825)
	CFO_{iq}		0.193***		2.902
			(3.840)		(0.955)
	$OPACC_{iq}$		0.032		1.216
			(0.910)		(0.704)
Risk & return	$BETA_{im}$		-0.005		0.139
			(-1.127)		(0.691)
	RET_{iy}		0.017*		0.346
			(1.823)		(0.396)
	Model	OLS	OLS	Tobit	Tobit
	Fixed effects	None	None	None	None
	Clustered SEs	FF48 & year	FF48 & year	FF48	FF48
	Balanced controls	No weights	No weights	No weights	No weights
	N	65,411	65,411	28,232	28,232
	Adj. R^2 (Pseudo R^2)	0.029	0.069	0.020	0.021

TABLE 4 (continued on next page)

Panel B: Cross-sectional variation using disclosure traits

		Dependent variable =			
		$3DAYRET_{id}$		$EDGAR_{id}$	
		(1)	(2)	(3)	(4)
	Intercept	0.007	0.064***	2.191***	2.985***
		(0.370)	(6.003)	(2.652)	(7.103)
Disclosure content	$SALEWORDS_{it}$	0.034**		0.733	
		(2.394)		(0.769)	
	$FINWORDS_{it}$	-0.053***		1.138	
		(-3.950)		(1.085)	
	$ADVISOR_{it}$	0.056***		1.399	
		(3.692)		(1.584)	
	$CONFOUNDEARN_{it}$	-0.077***		-0.427	
		(-4.931)		(-0.487)	
	$CONFOUNDTURN_{it}$	-0.045*		1.073	
		(-1.914)		(0.582)	
	$EXISTINTEREST_{it}$	0.093***		1.970	
		(5.875)		(1.130)	
Outcomes	$ACQ1YR_{it}$		0.037***		3.574***
			(2.562)		(3.273)
	$LIQ1YR_{it}$		-0.150***		0.610
			(-4.299)		(0.465)
	RET_{iy}	0.041***	0.030*	1.153	0.902
		(2.620)	(1.725)	(0.866)	(0.647)
	Model	OLS	OLS	Tobit	Tobit
	Fixed effects	None	None	None	None
	Clustered SEs	FF48 & year	FF48 & year	FF48	FF48
	N	990	990	469	469
	Adj. R^2 (Pseudo R^2)	0.110	0.081	0.003	0.006

TABLE 4 (continued)

Notes: Panel A presents results from regressions of three-day returns and abnormal EDGAR downloads on a disclosure indicator variable (*DISC*). Using only the disclosure sample (*DISC*=1), Panel B presents results from regressions of three-day returns and abnormal EDGAR downloads on disclosure traits, prior 12-month returns, and *ex-post* outcomes. $SALEWORDS_{it}$, $FINWORDS_{it}$, $ADVISOR_{it}$, $CONFOUNDEARN_{it}$, $CONFOUNDTURN_{it}$ and $EXISTINTEREST_{it}$ are indicator variables capturing variation in disclosure content. *ACQ1YR* (*LIQ1YR*) are indicator variables =1 if the observation was acquired (liquidated) within one year after the announcement or pseudo-announcement. Adjusted R^2 is presented for OLS regressions while McFadden's Pseudo R^2 is presented for tobit regressions. The sample in Panel A consists of 65,411 firm-year observations from 1990 to 2014. The sample in Panel B consists of 990 firm-year disclosure observations (*DISC*=1) from 1990 to 2014. In both panels, the number of observations is limited in columns (3) and (4) by EDGAR log data, which is available from 2003 to 2014. Standard errors are clustered by industry (FF48) and, when the number of year clusters is sufficient, additionally by year. *T*-statistics are in parentheses. ***, ** and * denote statistical significance at the 1, 5 and 10 percent levels, respectively, based on two-tailed tests. See Appendix 3 for variable definitions.

TABLE 5

Outcomes within two years

		DISC=1 N=990 (a)		*DISC*=0 N=64,421 Full-entropy balanced (b)	*T*-test for difference in means (b) – (a)		Rumor group N=150 (c)	*T*-test for difference in means (c) – (a)
Outcomes	*ACQ1YR*=1	31.5% 233 days until delisting		5.8% 192 days until delisting	***		38.7% 190 days until delisting	*
	ACQ2YR=1	41.4% 294 days until delisting	vs.	9.2% 322 days until delisting	***	vs.	46.7% 245 days until delisting	.
	ACQAFT1.5YR	2.7% 616 days until delisting		1.5% 639 days until delisting	**		3.3% 624 days until delisting	.
	LIQ1YR=1	9.6% 173 days until delisting		5.7% 183 days until delisting	***		0.7% 247 days until delisting	***
	LIQ2YR=1	12.7% 267 days until delisting		10.0% 342 days until delisting	**		2.0% 449 days until delisting	***
	LIQAFT1.5YR	1.8% 634 days until delisting		2.1% 645 days until delisting	.		0.7% 701 days until delisting	.

Notes: This table presents the proportion of observations in the disclosure group (*DISC*=1), control group (*DISC*=0), and rumor group that are acquired (*ACQ*) or liquidated (*LIQ*) within one year (*1YR*), within two years (*2YR*), or after 1.5 years but before two years (*AFT1.5YR*). The proportion of control firms experiencing outcomes and the control firms' mean number of days until delisting are full entropy-balanced. If the control group were not entropy-balanced, then the proportions would be 5.5% acquired within one year (*ACQ1YR*), 8.5% acquired within two years (*ACQ2YR*), 1.4% acquired between 1.5 and two years (*ACQ1.5YR*), 3.4% liquidated within one year (*LIQ1YR*), 6.6% liquidated within two years (*LIQ2YR*), and 1.6% liquidated between 1.5 and two years (*LIQ1.5YR*), which corresponds to the proportion of acquisitions and liquidations over two years depicted in Figure 7. In this table, days refer to calendar days, not trading days. ***, ** and * denote statistical significance at the 1, 5 and 10 percent levels, respectively, from *t*-tests of differences in means. The sample consists of 990 disclosure firm-year observations (*DISC*=1), 54,421 control firm-year observations (*DISC*=0), and 150 rumor firm-year observations from 1990 to 2014. Rumor firms may overlap with the *DISC*=1 or *DISC*=0 firms, if they disclosed or did not disclose strategic alternatives on another date. See Appendix 3 for variable definitions.

TABLE 6 (continued on next page)

Probability of being acquired or liquidated within one year

		Dependent variable =			
		$ACQ1YR_{it}$		$LIQ1YR_{it}$	
	Pred.	Coefficient (1)	Marginal effect (2)	Coefficient (3)	Marginal effect (4)
$DISC_{it}$	+	1.102***	0.247***	0.313***	0.032***
		(15.297)	(18.849)	(4.685)	(4.154)
$MKVAL_{iq}$		0.000	0.000	-0.001***	-0.000***
		(1.336)	(1.473)	(-5.837)	(-10.754)
MTB_{iq}		0.002	0.000	-0.012***	-0.001***
		(0.698)	(0.570)	(-4.202)	(-2.846)
LEV_{iq}		0.049	0.011	0.678***	0.069***
		(0.450)	(0.521)	(7.966)	(6.325)
$CASH_{iq}$		0.003	0.001	0.031*	0.003**
		(0.561)	(0.218)	(1.913)	(2.172)
$INTAN_{iq}$		-0.218	-0.049	-0.177	-0.018
		(-0.724)	(-0.997)	(-0.499)	(-0.579)
CFO_{iq}		2.303***	0.516***	-2.747***	-0.279***
		(5.274)	(5.600)	(-4.335)	(-6.852)
$OPACC_{iq}$		0.764***	0.171***	-1.905***	-0.194***
		(3.263)	(3.264)	(-4.631)	(-6.514)
$BETA_{im}$		-0.101**	-0.023***	0.036	0.004
		(-2.005)	(-3.254)	(0.742)	(0.928)
RET_{iy}		0.258***	0.058***	-1.473***	-0.150***
		(4.349)	(4.607)	(-8.798)	(-9.168)
$INVMILLS_{it}$		-0.807***	-0.181***	1.606***	0.163***
		(-7.372)	(-4.157)	(4.737)	(4.664)
Model		Probit		Probit	
Fixed effects		FF12 & year		FF12 & year	
Clustered SEs		FF48 & year		FF48 & year	
Balanced controls		Full entropy		Full entropy	
N		65,411		65,411	
Pseudo R^2		0.170		0.320	
Wald χ^2		663.61		172.68	

TABLE 6 (continued)

Notes: This table presents the results of probit regressions of the probability of being acquired or liquidated on the disclosure of strategic alternatives (*DISC*). The inclusion of fixed effects subsumes an intercept. The dependent variable *ACQ1YR* (*LIQ1YR*) =1 if the observation is acquired (liquidated) within one year after the announcement or pseudo-announcement date. Control firms (*DISC*=0) are full entropy-balanced in order to serve as the counterfactual to the disclosure (*DISC*=1) firms. Standard errors are clustered by industry and year. *Z*-statistics of the coefficient estimates and marginal effects are in parentheses. ***, ** and * denote statistical significance at the 1, 5 and 10 percent levels, respectively. The sample consists of 65,411 observations from 1990 to 2014. See Appendix 3 for variable definitions.

TABLE 7

Buy-and-hold daily returns cumulated from day -12 to day +252

		DISC=1 N=990 (a)		*DISC*=0 N=64,421 Full-entropy balanced (b)	*T*-test for difference in means (b) – (a)		Rumor group N=150 (c)	*T*-test for difference in means (c) – (a)
Outcomes	*ACQ1YR*=1	39.7% (35.0%)	vs.	30.2% (19.9%)	*p*=0.016 **	vs.	41.3% (34.9%)	*p*=0.852 .
	ACQ1YR =0& *LIQ1YR*=0	0.6% (-13.7%)		16.1% (0.5%)	*p*=0.000 ***		8.6% (-6.0%)	*p*=0.337 .
	LIQ1YR=1	-56.5% (-73.2%)		-47.8% (-60.0%)	*p*=0.100 *		-96.7% (N=1)	*p*=0.000 ***

Notes: This table presents the mean and median portfolio returns of the disclosure group (*DISC*=1), control group (*DISC*=0), and rumor group based on whether the firms were *ex-post* acquired (*ACQ1YR=1*), liquidated (*LIQ1YR=1*), or neither within one year after the announcement or pseudo-announcement date. The weighted means and weighted medians of the control group (*DISC*=0) are weighted using full-entropy balancing. The returns are buy-and-hold raw returns cumulated from day -12 to day +252 relative to the announcement date, if *DISC*=1, or pseudo-announcement date, if *DISC*=0. The mean returns in columns (a) and (b) correspond to the ending buy-and-hold returns in Figure 8. *P*-values are based on *t*-tests for differences in means. ***, ** and * denote statistical significance at the 1, 5 and 10 percent levels, respectively, based on two-tailed tests. The sample consists of 990 disclosure firm-year observations (*DISC*=1), 54,421 control firm-year observations (*DISC*=0), and 150 rumor firm-year observations from 1990 to 2014. Rumor firms may overlap with the *DISC*=1 or *DISC*=0 firms, if they disclosed or did not disclose strategic alternatives on another date. See Appendix 3 for variable definitions.

TABLE 8

Buy-and-hold 12-month risk-adjusted returns (RET_{iy+1}^{CAPM})

		DISC=1 N=990 (a)		*DISC*=0 N=64,421 Full-entropy balanced (b)	*T*-test for difference in means (b) – (a)		Rumor group N=150 (c)	*T*-test for difference in means (c) – (a)
Outcomes	*ACQ1YR*=1	32.1% (27.6%)	vs.	24.7% (13.8%)	*p*=0.039 **	vs.	26.7% (27.6%)	*p*=0.326 .
	ACQ1YR =0& *LIQ1YR*=0	-7.3% (-15.4%)		8.3% (-4.9%)	*p*=0.000 ***		-7.1% (-17.0%)	*p*=0.925 .
	LIQ1YR=1	-60.0% (-77.8%)		-49.9% (-61.8%)	*p*=0.076 *		-77.0% (N=1)	*p*=0.001 ***

Notes: This table presents the mean and median portfolio returns of the disclosure group (*DISC*=1), control group (*DISC*=0), and rumor group based on whether the firms were *ex-post* acquired (*ACQ1YR=1*), liquidated (*LIQ1YR=1*), or neither within one year after the announcement or pseudo-announcement date. The weighted means and weighted medians of the control group (*DISC*=0) are weighted using full-entropy balancing. The returns are buy-and-hold CAPM risk-adjusted returns cumulated from the beginning of month 1 (equivalent to the end of month 0) to the end of month 12, where the announcement date, if *DISC*=1, or pseudo-announcement date, if *DISC*=0, occurs during month 1. The mean returns in columns (a) and (b) correspond to the ending buy-and-hold returns in Figure 9. *P*-values are based on *t*-tests for differences in means. ***, ** and * denote statistical significance at the 1, 5 and 10 percent levels, respectively, based on two-tailed tests. The sample consists of 990 disclosure firm-year observations (*DISC*=1), 54,421 control firm-year observations (*DISC*=0), and 150 rumor firm-year observations from 1990 to 2014. Rumor firms may overlap with the *DISC*=1 or *DISC*=0 firms, if they disclosed or did not disclose strategic alternatives on another date. See Appendix 3 for variable definitions.

Buy-and-hold 12-month risk-adjusted returns = $\prod_{m=1}^{12}(1 + aret_{im})$,
where $aret_{im} = ret_{im} - \hat{\beta}_{iy} r_m^{mkt}$.
$\hat{\beta}_{iy}$ is the CAPM beta estimated annually using 36 monthly observations of firm *i* during years *y*-1, *y*, and *y*+1: $(ret_{im} - r_m^f) = \alpha_{im} + \beta_{iy}(r_m^{mkt} - r_m^f) + \varepsilon_{im}$.

Monthly market return r_m^{mkt} is the CRSP value-weighted monthly return including dividends. Delisting return is included in ret_{im} if applicable.

TABLE 9

Buy-and-hold 12-month or terminal risk-adjusted returns ($RET_{iy+1}^{CAPM,12m}$)

		DISC=1 N=990 (a)		*DISC*=0 N=64,421 Full-entropy balanced (b)	*T*-test for difference in means (b) – (a)		Rumor group N=150 (c)	*T*-test for difference in means (c) – (a)
Outcomes	*ACQ1YR*=1	28.3% (22.8)	vs.	16.9% (13.3%)	*p*=0.003 ***	vs.	34.6% (22.5)	*p*=0.452 .
	ACQ1YR =0& *LIQ1YR*=0	-7.7% (-15.4%)		8.2% (-5.0%)	*p*=0.000 ***		-7.1% (-17.0%)	*p*=0.981 .
	LIQ1YR=1	-77.4% (-90.4%)		-71.5% (-85.5%)	*p*=0.184 .		-81.3% (N=1)	*p*=0.370 .

Notes: This table presents the mean and median portfolio returns of the disclosure group (*DISC*=1), control group (*DISC*=0), and rumor group based on whether the firms were *ex-post* acquired (*ACQ1YR=1*), liquidated (*LIQ1YR=1*), or neither within one year after the announcement or pseudo-announcement date. The weighted means and weighted medians of the control group (*DISC*=0) are weighted using full-entropy balancing. The returns are buy-and-hold CAPM risk-adjusted returns cumulated from the beginning of month 1 (equivalent to the end of month 0) to the end of month 12, where the announcement date, if *DISC*=1, or pseudo-announcement date, if *DISC*=0, occurs during month 1. However, if the CRSP monthly return series ends within 12 months, then the terminal 12-month risk-adjusted return is used. *P*-values are based on *t*-tests for differences in means. ***, ** and * denote statistical significance at the 1, 5 and 10 percent levels, respectively, based on two-tailed tests. The sample consists of 990 disclosure firm-year observations (*DISC*=1), 54,421 control firm-year observations (*DISC*=0), and 150 rumor firm-year observations from 1990 to 2014. Rumor firms may overlap with the *DISC*=1 or *DISC*=0 firms, if they disclosed or did not disclose strategic alternatives on another date. See Appendix 3 for variable definitions.

Buy-and-hold 12-month risk-adjusted returns = $\prod_{m=1}^{12}(1 + aret_{im})$, or terminal buy-and-hold 12-month risk-adjusted returns = $\prod_{m=T-12}^{T}(1 + aret_{im})$, where $aret_{im} = ret_{im} - \hat{\beta}_{iy} r_m^{mkt}$.

$\hat{\beta}_{iy}$ is the CAPM beta estimated annually using 36 monthly observations of firm *i* during years *y*-1, *y*, and *y*+1: $ret_{im} - r_m^f = \alpha_{im} + \beta_{iy}(r_m^{mkt} - r_m^f) + \varepsilon_{im}$.

Monthly market return r_m^{mkt} is the CRSP value-weighted monthly return including dividends. Delisting return is included in ret_{im} if applicable.

TABLE 10

(continued on next page)

Regressions of buy-and-hold daily returns cumulated from day -12 to day +252 conditional on disclosure and future outcomes

			Dependent variable = $CUMDRET_{iy+1}$			
		Pred.	(1)	(2)	(3)	(4)
	Intercept		0.161***	0.158***	N/A due	N/A due
			(3.189)	(3.173)	to F.E.	to F.E.
	$DISC_{it}$	-	-0.155***	-0.149***	-0.147***	-0.121**
			(-2.739)	(-2.840)	(-2.937)	(-2.417)
Outcomes	$ACQ1YR_{it}$	+	0.143***	0.145***	0.152***	0.160***
			(4.301)	(4.278)	(4.427)	(4.617)
	$ACQ1YR_{it}$*$DISC_{it}$	+	0.248***	0.242***	0.244***	0.229***
			(4.393)	(4.464)	(4.007)	(3.772)
	$LIQ1YR_{it}$	-	-0.639***	-0.598***	-0.594***	-0.502***
			(-15.468)	(-15.862)	(-10.210)	(-7.428)
	$LIQ1YR_{it}$*$DISC_{it}$		0.068			
			(0.949)			
Fundamentals	$MKVAL_{iq}$				-0.000	-0.000
					(-0.745)	(-0.978)
	MTB_{iq}				-0.004**	-0.004*
					(-2.248)	(-1.913)
	LEV_{iq}				-0.057**	-0.039
					(-1.976)	(-1.044)
	$CASH_{iq}$				0.004	0.004
					(1.289)	(1.534)
	$INTAN_{iq}$				-0.035	-0.053
					(-0.327)	(-0.542)
	ΔROA_{iq}				0.135	0.022
					(1.237)	(0.208)
	FCF_{iq}				0.428***	0.054
					(4.087)	(0.404)
	$OPACC_{iq}$				-0.305***	-0.457***
					(-2.589)	(-3.402)

Risk & return	$BETA_{im}$	0.020	0.021
		(0.875)	(1.039)
	RET_{iy}	-0.046	-0.058*
		(-1.239)	(-1.671)
Ownership	$INSTBLKOWN\%_{im}$	0.193**	0.150
		(1.990)	(1.496)
	$SHARESHELD_{im}$	0.383**	0.353**
		(2.568)	(2.475)
	$INVMILLS_{it}$	0.205**	0.185*
		(1.967)	(1.876)
	$AVGQROA_{iy+1}$		1.043***
			(4.666)
	Model	OLS	OLS	OLS	OLS
	Fixed effects	None	None	FF12 & year	FF12 & year
	Clustered SEs	FF48 & year	FF48 & year	FF48 & year	FF48 & year
	Balanced controls	Full entropy	Full entropy	Full entropy	Full entropy & $AVGQROA_{iy+1}$
	N	65,411	65,411	65,411	65,411
	Adj. R^2	0.064	0.064	0.134	0.145

Notes: This table presents the results of regressions of buy-and-hold returns on indicator variables for disclosure choice and *ex-post* transactional outcomes. $CUMDRET_{iy+1}$ is the cumulative buy-and-hold return from day -12 to day +252 (in trading days, equivalent to one year) after the announcement or pseudo-announcement date. If delisting occurs due to acquisition (*ACQ1YR*=1) or liquidation (*LIQ1YR*=1) within one year, then $CUMDRET_{iy+1}$ ends with the delisting return, without reinvestment. Control firms (*DISC*=0) are full entropy-balanced based on fundamental, market, risk/return, analyst, and ownership characteristics in order to serve as the counterfactual to the disclosure group (*DISC*=1). In column (4), the control group is additionally entropy-balanced on $AVGROA_{iy+1}$ and includes $AVGROA_{iy+1}$ as a covariate. Standard errors are clustered by Fama-French 48 industry and year. *T*-statistics are in parentheses. ***, ** and * denote statistical significance at the 1, 5 and 10 percent levels, respectively, based on two-tailed tests. The sample consists of 65,411 firm-year observations from 1990 to 2014. See Appendix 2 for variable definition.

TABLE 11

(continued on next page)

Regressions of buy-and-hold 12-month risk-adjusted returns conditional on disclosure and future outcomes

			Dependent variable = RET_{iy+1}^{CAPM}			
		Pred.	(1)	(2)	(3)	(4)
	Intercept		0.083**	0.081**	N/A due	N/A due
			(2.432)	(2.479)	to F.E.	to F.E.
	$DISC_{it}$	-	-0.157***	-0.151***	-0.155***	-0.132***
			(-3.729)	(-3.762)	(-3.832)	(-3.262)
Outcomes	$ACQ1YR_{it}$	+	0.163***	0.165***	0.164***	0.174***
			(6.469)	(6.260)	(6.230)	(7.438)
	$ACQ1YR_{it}$*$DISC_{it}$	+	0.232***	0.226***	0.253***	0.234***
			(4.502)	(4.276)	(4.215)	(3.913)
	$LIQ1YR_{it}$	-	-0.583***	-0.547***	-0.537***	-0.445***
			(-14.112)	(-15.635)	(-13.372)	(-18.323)
	$LIQ1YR_{it}$*$DISC_{it}$		0.058			
			(0.754)			
Fundamentals	$MKVAL_{iq}$				-0.000	-0.000
					(-0.534)	(-0.844)
	MTB_{iq}				-0.004**	-0.003*
					(-2.052)	(-1.772)
	LEV_{iq}				-0.080***	-0.061**
					(-3.399)	(-2.338)
	$CASH_{iq}$				-0.001	-0.001
					(-0.325)	(-0.230)
	$INTAN_{iq}$				-0.053	-0.071
					(-0.651)	(-1.012)
	ΔROA_{iq}				0.157*	0.054
					(1.693)	(0.555)
	FCF_{iq}				0.322***	-0.077
					(3.212)	(-0.609)
	$OPACC_{iq}$				-0.214**	-0.378***
					(-2.089)	(-3.106)

Risk & return	$BETA_{im}$			-0.028	-0.024
				(-1.083)	(-0.933)
	RET_{iy}			-0.043	-0.058**
				(-1.459)	(-2.216)
Ownership	$INSTBLKOWN\%_{im}$			0.090*	0.045
				(1.895)	(1.062)
	$SHARESHELD_{im}$			0.299***	0.271***
				(3.878)	(3.607)
	$INVMILLS_{it}$			0.177**	0.158**
				(2.194)	(2.166)
	$AVGQROA_{iy+1}$				1.113***
					(6.675)
	Model	OLS	OLS	OLS	OLS
	Fixed effects	None	None	FF12 & year	FF12 & year
	Clustered SEs	FF48 & year	FF48 & year	FF48 & year	FF48 & year
	Balanced controls	Full entropy	Full entropy	Full entropy	Full entropy & $AVGQROA_{iy+1}$
	N	65,411	65,411	65,411	65,411
	Adj. R^2	0.078	0.077	0.110	0.126

Notes: This table presents the results of regressions of buy-and-hold returns on indicator variables for disclosure choice and *ex-post* transactional outcomes. RET_{iy+1}^{CAPM} is the cumulative buy-and-hold 12-month return starting at the beginning of month 1 (equivalent to the end of month 0) to the end of month 12, where the announcement date, if *DISC*=1, or pseudo-announcement date, if *DISC*=0, occurs during month 1. If delisting occurs due to acquisition (*ACQ1YR*=1) or liquidation (*LIQ1YR*=1) within 12 months, then RET_{iy+1}^{CAPM} ends with the delisting return, without reinvestment. Control firms (*DISC*=0) are full entropy-balanced based on fundamental, market, risk/return, analyst, and ownership characteristics in order to serve as the counterfactual to the disclosure group (*DISC*=1). In column (4), the control group is additionally entropy-balanced on $AVGROA_{iy+1}$ and includes $AVGROA_{iy+1}$ as a covariate. Standard errors are clustered by Fama-French 48 industry and year. *T*-statistics are in parentheses. ***, ** and * denote statistical significance at the 1, 5 and 10 percent levels, respectively, based on two-tailed tests. The sample consists of 65,411 firm-year observations from 1990 to 2014. See Appendix 3 for variable definitions.

Buy-and-hold 12-month risk-adjusted returns = $\prod_{m=1}^{12}(1 + aret_{im})$,
where $aret_{im} = ret_{im} - \hat{\beta}_{iy} r_m^{mkt}$.
$\hat{\beta}_{iy}$ is the CAPM beta estimated annually using 36 monthly observations of firm *i* during years *y*-1, *y*, and *y*+1: $(ret_{im} - r_m^f) = \alpha_{im} + \beta_{iy}(r_m^{mkt} - r_m^f) + \varepsilon_{im}$.

Monthly market return r_m^{mkt} is the CRSP value-weighted monthly return including dividends. Delisting return is included in ret_{im} if applicable.

TABLE 12

(continued on next page)

Regressions of buy-and-hold 12-month or terminal risk-adjusted returns conditional on disclosure and future outcomes

			Dependent variable = $RET_{iy+1}^{CAPM,12m}$			
		Pred.	(1)	(2)	(3)	(4)
	Intercept		0.082**	0.079**	N/A due	N/A due
			(2.415)	(2.449)	to F.E.	to F.E.
	$DISC_{it}$	-	-0.160***	-0.151***	-0.154***	-0.130***
			(-3.864)	(-3.983)	(-3.981)	(-3.372)
Outcomes	$ACQ1YR_{it}$	+	0.088**	0.092**	0.089**	0.100***
			(2.243)	(2.398)	(2.235)	(2.632)
	$ACQ1YR_{it}$*$DISC_{it}$	+	0.273***	0.264***	0.278***	0.259***
			(4.724)	(4.734)	(4.435)	(4.200)
	$LIQ1YR_{it}$	-	-0.797***	-0.736***	-0.676***	-0.578***
			(-17.375)	(-21.109)	(-14.499)	(-17.292)
	$LIQ1YR_{it}$*$DISC_{it}$		0.100			
			(1.314)			
Fundamentals	$MKVAL_{iq}$				-0.000	-0.000
					(-0.348)	(-0.697)
	MTB_{iq}				-0.003*	-0.002
					(-1.664)	(-1.380)
	LEV_{iq}				-0.070**	-0.053
					(-2.392)	(-1.644)
	$CASH_{iq}$				-0.005**	-0.005**
					(-2.359)	(-2.108)
	$INTAN_{iq}$				-0.040	-0.059
					(-0.483)	(-0.850)
	ΔROA_{iq}				0.156*	0.049
					(1.919)	(0.527)
	FCF_{iq}				0.388***	-0.026
					(3.357)	(-0.205)
	$OPACC_{iq}$				-0.160	-0.328***
					(-1.462)	(-2.650)

Risk & return	$BETA_{im}$			-0.036 (-1.466)	-0.031 (-1.284)
	RET_{iy}			0.063 (1.271)	0.049 (1.046)
Ownership	$INSTBLKOWN\%_{im}$			0.068 (0.974)	0.022 (0.334)
	$SHARESHELD_{im}$			0.306*** (3.539)	0.277*** (3.273)
	$INVMILLS_{it}$			0.109 (1.465)	0.089 (1.342)
	$AVGQROA_{iy+1}$				1.143*** (6.307)
	Model	OLS	OLS	OLS	OLS
	Fixed effects	None	None	FF12 & year	FF12 & year
	Clustered SEs	FF48 & year	FF48 & year	FF48 & year	FF48 & year
	Balanced controls	Full entropy	Full entropy	Full entropy	Full entropy & $AVGQROA_{iy+1}$
	N	65,411	65,411	65,411	65,411
	Adj. R^2	0.103	0.103	0.137	0.155

Notes: This table presents the results of regressions of buy-and-hold returns on indicator variables for disclosure choice and *ex-post* transactional outcomes. $RET_{iy+1}^{CAPM,12m}$ is the cumulative buy-and-hold 12-month return starting at the beginning of month 1 (equivalent to the end of month 0) to the end of month 12, where the announcement date, if *DISC*=1, or pseudo-announcement date, if *DISC*=0, occurs during month 1. However, if the CRSP monthly return series ends within 12 months, then the terminal 12-month risk-adjusted return is used. Control firms (*DISC*=0) are full entropy-balanced based on fundamental, market, risk/return, analyst, and ownership characteristics in order to serve as the counterfactual to the disclosure group (*DISC*=1). In column (4), the control group is additionally entropy-balanced on $AVGROA_{iy+1}$ and includes $AVGROA_{iy+1}$ as a covariate. Standard errors are clustered by Fama-French 48 industry and year. *T*-statistics are in parentheses. ***, ** and * denote statistical significance at the 1, 5 and 10 percent levels, respectively, based on two-tailed tests. The sample consists of 65,411 firm-year observations from 1990 to 2014. See Appendix 3 for variable definitions.

Buy-and-hold 12-month risk-adjusted returns = $\prod_{m=1}^{12}(1 + aret_{im})$, or terminal buy-and-hold 12-month risk-adjusted returns = $\prod_{m=T-1}^{T}(1 + aret_{im})$,
where $aret_{im} = ret_{im} - \hat{\beta}_{iy} r_m^{mkt}$.
$\hat{\beta}_{iy}$ is the CAPM beta estimated annually using 36 monthly observations of firm *i* during years *y*-1, *y*, and *y*+1: $ret_{im} - r_m^f = \alpha_{im} + \beta_{iy}(r_m^{mkt} - r_m^f) + \varepsilon_{im}$.

Monthly market return r_m^{mkt} is the CRSP value-weighted monthly return including dividends. Delisting return is included in ret_{im} if applicable.

TABLE 13

Disclosure group and one-to-one matched control group

	DISC=1 Disclosure group			*DISC*=0 Matched control group			*T*-test
	N	Mean (a)	SD	N	Mean (b)	SD	(b) – (a)
$DISC_{it}$	990	1.000	0.000	990	0.000	0.000	***
$MKVAL_{iq}$	990	621.417	1,800	990	715.258	1,869	.
MTB_{iq}	990	1.921	7.231	990	2.020	5.883	.
LEV_{iq}	990	0.570	0.338	990	0.524	0.360	***
$ASSETS_{iq}$	990	1,106	3,648	990	1,042	3,277	.
ΔROA_{iq}	984	-0.021	0.114	952	0.000	0.080	***
ROA_{iq}	990	-0.030	0.120	990	-0.006	0.068	***
REV_{iq}	973	0.248	0.218	970	0.269	0.225	**
OI_{iq}	980	-0.005	0.094	981	0.011	0.062	***
CFO_{iq}	990	-0.005	0.084	990	0.006	0.070	***
FCF_{iq}	990	-0.016	0.098	990	-0.017	0.119	.
$OPACC_{iq}$	990	-0.012	0.134	990	0.013	0.113	***
$BETA_{iy}$	990	1.142	1.010	990	1.148	1.098	.
RET_{iy}	990	-0.091	0.607	990	0.049	0.713	**
$ANALYSTEST_{im}$	517	0.195	1.491	461	0.349	1.285	*
$INSTBLKOWN\%_{im}$	845	0.175	0.160	775	0.154	0.154	***
$SHARESHELD_{im}$	803	0.079	0.160	792	0.101	0.177	***
I(YEAR1990)	990	0.031	0.174	990	0.031	0.174	.
I(FF1)	990	0.066	0.248	990	0.062	0.241	.

Notes: This table presents summary statistics of key variables for the 990 disclosure observations (*DISC*=1) and 990 matched control observations (*DISC*=0). The right column presents *t*-test results on the differences in means between the disclosure group (*DISC*=1) and control group (*DISC*=0), where either no weights, industry- and year-balanced weights or full entropy-balanced weights are used. The required variables are $DISC_{it}$, $MKVAL_{iq}$, MTB_{iq}, LEV_{iq}, $ASSETS_{iq}$, ROA_{iq}, CFO_{iq}, FCF_{iq}, $OPACC_{iq}$, $BETA_{iy+1}$, RET_{iy}, and $EXISTSDC_{id}$. Non-required variables have fewer numbers of observations. *I(YEAR1990)* is an indicator variable =1 if the observation is in 1990, and =0 otherwise. *I(FF1)* is an indicator variable =1 if the observation is in industry 1, using the Fama-French 12 industry classification, and =0 otherwise. ***, ** and * denote statistical significance at the 1, 5 and 10 percent levels, respectively, from *t*-tests of differences in means. The sample consists of 1,980 firm-year observations from 1990 to 2014, where the one-to-one matched control observations are selected based on the closest total assets (*ASSETS*) within the same *MTB* quartile and same industry-year, using the Fama-French 48 industry classification. The subtle discrepancy in FF1 could be due to a disclosure-control pair having the same FF48 industry classification but a different FF12 industry classification. See Appendix 3 for variable definitions.

TABLE 14

(continued on next page)

Regressions of buy-and-hold daily returns cumulated from day -12 to day +252 conditional on disclosure and future outcomes, using one-to-one matched control group

			Dependent variable = $CUMDRET_{iy+1}$			
		Pred.	(1)	(2)	(3)	(4)
	Intercept		0.148***	0.144**	N/A due	N/A due
			(2.593)	(2.538)	to F.E.	to F.E.
	$DISC_{it}$	-	-0.143***	-0.132***	-0.124***	-0.106**
			(-3.588)	(-3.352)	(-3.285)	(-2.567)
Outcomes	$ACQ1YR_{it}$	+	0.185**	0.189**	0.229***	0.227***
			(2.061)	(2.114)	(3.286)	(3.349)
	$ACQ1YR_{it}$*$DISC_{it}$	+	0.206**	0.196**	0.159*	0.147*
			(2.171)	(2.071)	(1.792)	(1.653)
	$LIQ1YR_{it}$	-	-0.691***	-0.614***	-0.635***	-0.545***
			(-9.327)	(-11.949)	(-8.885)	(-7.229)
	$LIQ1YR_{it}$*$DISC_{it}$		0.120			
			(1.451)			
Fundamentals	$MKVAL_{iq}$				-0.000	-0.000
					(-0.791)	(-1.187)
	MTB_{iq}				-0.005	-0.004
					(-1.609)	(-1.218)
	LEV_{iq}				-0.067*	-0.015
					(-1.900)	(-0.376)
	$CASH_{iq}$				0.004	0.004
					(1.031)	(1.353)
	$INTAN_{iq}$				-0.154	-0.148
					(-0.967)	(-0.970)
	ΔROA_{iq}				0.071	0.032
					(0.594)	(0.207)
	FCF_{iq}				0.532***	0.098
					(3.654)	(0.662)
	$OPACC_{iq}$				-0.224	-0.472***
					(-1.525)	(-3.429)

Risk & return	$BETA_{im}$			0.026	0.033
				(0.859)	(1.151)
	RET_{iy}			-0.095**	-0.115***
				(-2.198)	(-3.046)
Ownership	$INSTBLKOWN\%_{im}$			0.161	0.099
				(0.778)	(0.479)
	$SHARESHELD_{im}$			0.232	0.183
				(1.330)	(1.101)
	$INVMILLS_{it}$			0.218*	0.201*
				(1.814)	(1.778)
	$AVGQROA_{iy+1}$				1.456***
					(5.072)
	Model	OLS	OLS	OLS	OLS
	Fixed effects	None	None	FF12 & year	FF12 & year
	Clustered SEs	FF48 & year	FF48 & year	FF48 & year	FF48 & year
	Balanced controls	No	No	No	No
	N	1,980	1,980	1,980	1,980
	Adj. R^2	0.074	0.074	0.152	0.170

Notes: This table presents the results of regressions of buy-and-hold returns on indicator variables for disclosure choice and *ex-post* transactional outcomes. $CUMDRET_{iy+1}$ is the cumulative buy-and-hold return from day -12 to day +252 (in trading days, equivalent to one year) after the announcement or pseudo-announcement date. If delisting occurs due to acquisition (*ACQ1YR*=1) or liquidation (*LIQ1YR*=1) within one year, then $CUMDRET_{iy+1}$ ends with the delisting return, without reinvestment. Control firms (*DISC*=0) are full entropy-balanced based on fundamental, market, risk/return, analyst, and ownership characteristics in order to serve as the counterfactual to the disclosure group (*DISC*=1). In column (4), the control group is additionally entropy-balanced on $AVGROA_{iy+1}$ and includes $AVGROA_{iy+1}$ as a covariate. Standard errors are clustered by Fama-French 48 industry and year. *T*-statistics are in parentheses. ***, ** and * denote statistical significance at the 1, 5 and 10 percent levels, respectively, based on two-tailed tests. The sample consists of 1,980 firm-year observations from 1990 to 2014, where the one-to-one matched control observations are selected based on the closest total assets (*ASSETS*) within the same *MTB* quartile and same industry-year, using the Fama-French 48 industry classification. See Appendix 2 for variable definition.

TABLE 15

(continued on next page)

Regressions of buy-and-hold 12-month risk-adjusted returns conditional on disclosure and future outcomes, using one-to-one matched control group

			Dependent variable = RET_{iy+1}^{CAPM}			
		Pred.	(1)	(2)	(3)	(4)
	Intercept		0.061**	0.061**	N/A due	N/A due
			(2.167)	(2.194)	to F.E.	to F.E.
	$DISC_{it}$	-	-0.135***	-0.135***	-0.124***	-0.107***
			(-4.243)	(-4.126)	(-3.746)	(-3.042)
Outcomes	$ACQ1YR_{it}$	+	0.180***	0.180***	0.219***	0.217***
			(2.672)	(2.708)	(3.422)	(3.573)
	$ACQ1YR_{it}$*$DISC_{it}$	+	0.215***	0.215***	0.194**	0.183**
			(2.633)	(2.678)	(2.452)	(2.377)
	$LIQ1YR_{it}$	-	-0.523***	-0.524***	-0.495***	-0.413***
			(-5.394)	(-11.000)	(-14.207)	(-23.201)
	$LIQ1YR_{it}$*$DISC_{it}$		-0.001			
			(-0.009)			
Fundamentals	$MKVAL_{iq}$				0.000	-0.000
					(0.080)	(-0.489)
	MTB_{iq}				-0.005**	-0.004
					(-1.988)	(-1.630)
	LEV_{iq}				-0.074*	-0.027
					(-1.878)	(-0.670)
	$CASH_{iq}$				-0.000	-0.000
					(-0.187)	(-0.083)
	$INTAN_{iq}$				-0.084	-0.078
					(-0.615)	(-0.610)
	ΔROA_{iq}				0.208	0.172
					(1.438)	(0.912)
	FCF_{iq}				0.303***	-0.094
					(3.387)	(-0.600)
	$OPACC_{iq}$				-0.219	-0.446***
					(-1.641)	(-3.464)

Risk & return	$BETA_{im}$			-0.033	-0.027
				(-1.357)	(-1.079)
	RET_{iy}			-0.048*	-0.066***
				(-1.756)	(-2.659)
Ownership	$INSTBLKOWN\%_{im}$			0.042	-0.015
				(0.315)	(-0.113)
	$SHARESHELD_{im}$			0.198**	0.154
				(2.135)	(1.647)
	$INVMILLS_{it}$			0.201**	0.186**
				(2.025)	(2.002)
	$AVGQROA_{iy+1}$				1.330***
					(4.932)
	Model	OLS	OLS	OLS	OLS
	Fixed effects	None	None	FF12 & year	FF12 & year
	Clustered SEs	FF48 & year	FF48 & year	FF48 & year	FF48 & year
	Balanced controls	No	No	No	No
	N	1,980	1,980	1,980	1,980
	Adj. R^2	0.104	0.105	0.134	0.158

Notes: This table presents the results of regressions of buy-and-hold returns on indicator variables for disclosure choice and *ex-post* transactional outcomes. RET_{iy+}^{CAPM} is the cumulative buy-and-hold 12-month return starting at the beginning of month 1 (equivalent to the end of month 0) to the end of month 12, where the announcement date, if *DISC*=1, or pseudo-announcement date, if *DISC*=0, occurs during month 1. If delisting occurs due to acquisition (*ACQ1YR*=1) or liquidation (*LIQ1YR*=1) within 12 months, then RET_{iy+1}^{CAPM} ends with the delisting return, without reinvestment. Control firms (*DISC*=0) are full entropy-balanced based on fundamental, market, risk/return, analyst, and ownership characteristics in order to serve as the counterfactual to the disclosure group (*DISC*=1). In column (4), the control group is additionally entropy-balanced on $AVGROA_{iy+1}$ and includes $AVGROA_{iy+1}$ as a covariate. Standard errors are clustered by Fama-French 48 industry and year. *T*-statistics are in parentheses. ***, ** and * denote statistical significance at the 1, 5 and 10 percent levels, respectively, based on two-tailed tests. The sample consists of 1,980 firm-year observations from 1990 to 2014, where the one-to-one matched control observations are selected based on the closest total assets (*ASSETS*) within the same *MTB* quartile and same industry-year, using the Fama-French 48 industry classification. See Appendix 3 for variable definitions.

Buy-and-hold 12-month risk-adjusted returns = $\prod_{m=1}^{12}(1 + aret_{im})$,
where $aret_{im} = ret_{im} - \hat{\beta}_{iy} r_m^{mkt}$.
$\hat{\beta}_{iy}$ is the CAPM beta estimated annually using 36 monthly observations of firm *i* during years *y*-1, *y*, and *y*+1: $(ret_{im} - r_m^f) = \alpha_{im} + \beta_{iy}(r_m^{mkt} - r_m^f) + \varepsilon_{im}$.

Monthly market return r_m^{mkt} is the CRSP value-weighted monthly return including dividends. Delisting return is included in ret_{im} if applicable.

TABLE 16

(continued on next page)

Regressions of buy-and-hold 12-month or terminal risk-adjusted returns conditional on disclosure and future outcomes, using one-to-one matched control group

			Dependent variable = $RET_{iy+1}^{CAPM,12m}$			
		Pred.	(1)	(2)	(3)	(4)
	Intercept		0.061**	0.065**	-0.192	-0.226
			(2.173)	(2.322)	(-0.685)	(-0.844)
	$DISC_{it}$	-	-0.139***	-0.149***	-0.128***	-0.110***
			(-4.445)	(-4.478)	(-3.833)	(-3.139)
Outcomes	$ACQ1YR_{it}$	+	0.168*	0.164*	0.193**	0.192**
			(1.964)	(1.926)	(2.356)	(2.381)
	$ACQ1YR_{it}$*$DISC_{it}$	+	0.193**	0.203**	0.181*	0.169*
			(1.991)	(2.077)	(1.927)	(1.867)
	$LIQ1YR_{it}$	-	-0.580***	-0.655***	-0.584***	-0.498***
			(-4.750)	(-9.319)	(-8.510)	(-8.854)
	$LIQ1YR_{it}$*$DISC_{it}$		-0.116			
			(-1.162)			
Fundamentals	$MKVAL_{iq}$				0.000	-0.000
					(0.223)	(-0.385)
	MTB_{iq}				-0.004*	-0.003
					(-1.693)	(-1.312)
	LEV_{iq}				-0.075	-0.025
					(-1.548)	(-0.502)
	$CASH_{iq}$				-0.005**	-0.004**
					(-2.360)	(-2.197)
	$INTAN_{iq}$				-0.080	-0.075
					(-0.641)	(-0.648)
	ΔROA_{iq}				0.157	0.119
					(0.956)	(0.544)
	FCF_{iq}				0.359***	-0.057
					(3.122)	(-0.327)
	$OPACC_{iq}$				-0.153	-0.391***
					(-1.138)	(-3.015)

Risk & return	$BETA_{im}$			-0.038 (-1.545)	-0.032 (-1.261)
	RET_{iy}			0.041 (0.992)	0.022 (0.600)
Ownership	$INSTBLKOWN\%_{im}$			0.039 (0.245)	-0.020 (-0.125)
	$SHARESHELD_{im}$			0.209* (1.929)	0.163 (1.509)
	$INVMILLS_{it}$			0.146* (1.727)	0.130* (1.662)
	$AVGQROA_{iy+1}$				1.393*** (5.382)
	Model	OLS	OLS	OLS	OLS
	Fixed effects	None	None	FF12 & year	FF12 & year
	Clustered SEs	FF48 & year	FF48 & year	FF48 & year	FF48 & year
	Balanced controls	No	No	No	No
	N	1,980	1,980	1,980	1,980
	Adj. R^2	0.124	0.124	0.157	0.183

Notes: This table presents the results of regressions of buy-and-hold returns on indicator variables for disclosure choice and *ex-post* transactional outcomes. $RET_{iy+1}^{CAPM,12m}$ is the cumulative buy-and-hold 12-month return starting at the beginning of month 1 (equivalent to the end of month 0) to the end of month 12, where the announcement date, if *DISC*=1, or pseudo-announcement date, if *DISC*=0, occurs during month 1. However, if the CRSP monthly return series ends within 12 months, then the terminal 12-month risk-adjusted return is used. Control firms (*DISC*=0) are full entropy-balanced based on fundamental, market, risk/return, analyst, and ownership characteristics in order to serve as the counterfactual to the disclosure group (*DISC*=1). In column (4), the control group is additionally entropy-balanced on $AVGROA_{iy+1}$ and includes $AVGROA_{iy+1}$ as a covariate. Standard errors are clustered by Fama-French 48 industry and year. *T*-statistics are in parentheses. ***, ** and * denote statistical significance at the 1, 5 and 10 percent levels, respectively, based on two-tailed tests. The sample consists of 1,980 firm-year observations from 1990 to 2014, where the one-to-one matched control observations are selected based on the closest total assets (*ASSETS*) within the same *MTB* quartile and same industry-year, using the Fama-French 48 industry classification. See Appendix 3 for variable definitions.

Buy-and-hold 12-month risk-adjusted returns = $\prod_{m=1}^{12}(1 + aret_{im})$, or terminal buy-and-hold 12-month risk-adjusted returns = $\prod_{m=T-1}^{T}(1 + aret_{im})$,
where $aret_{im} = ret_{im} - \hat{\beta}_{iy} r_m^{mkt}$.
$\hat{\beta}_{iy}$ is the CAPM beta estimated annually using 36 monthly observations of firm *i* during years *y*-1, *y*, and *y*+1: $ret_{im} - r_m^f = \alpha_{im} + \beta_{iy}(r_m^{mkt} - r_m^f) + \varepsilon_{im}$.

Monthly market return r_m^{mkt} is the CRSP value-weighted monthly return including dividends. Delisting return is included in ret_{im} if applicable.

TABLE 17 (continued on next page)

Mechanisms of disclosure benefits

Panel A: Greater number of bidders

			Dependent variable = $NUMBIDDERS_{it}$	
		Pred.	(1)	(2)
	Intercept		N/A due to F.E.	N/A due to F.E.
	$DISC_{it}$	+	0.083***	0.082***
			(3.288)	(3.056)
Fundamentals	$MKVAL_{iq}$			-0.000***
				(-2.860)
	MTB_{iq}			-0.004
				(-1.500)
	LEV_{iq}			0.011
				(0.240)
	$CASH_{iq}$			0.002
				(1.598)
	$INTAN_{iq}$			-0.105
				(-1.465)
	CFO_{iq}			-0.157
				(-0.794)
	$OPACC_{iq}$			-0.225*
				(-1.898)
Risk & return	$BETA_{im}$			0.001
				(0.042)
	RET_{iy}			0.073
				(1.448)
	$INVMILLS_{it}$			0.109**
				(2.302)
	Model		Poisson	Poisson
	Fixed effects		FF12 & year	FF12 & year
	Clustered SEs		FF48 & year	FF48 & year
	Balanced controls		Full entropy	Full entropy
	N		5,405	5,405
	Wald χ^2		91.24 (p=0.000)	106.25 (p=0.000)

TABLE 17 (continued on next page)

Panel B: Greater valuation certainty in offer

			Dependent variable = $PERCCASH_{it}$			
		Pred.	Coefficient (1)	Marginal effect (2)	Coefficient (3)	Marginal effect (4)
	Intercept		N/A due to F.E.		N/A due to F.E.	
	$DISC_{it}$	+	0.327*** (4.729)	0.095*** (4.710)	0.317*** (4.567)	0.087*** (4.572)
Fundamentals	$MKVAL_{iq}$				-0.000*** (-2.904)	-0.000*** (-2.944)
	MTB_{iq}				-0.028*** (-3.282)	-0.008*** (-3.400)
	LEV_{iq}				-0.670*** (-4.095)	-0.184*** (-4.059)
	$CASH_{iq}$				0.030*** (2.750)	0.008*** (2.696)
	$INTAN_{iq}$				0.359 (1.223)	0.098 (1.217)
	CFO_{iq}				0.380 (0.549)	0.104 (0.551)
	$OPACC_{iq}$				-0.598 (-1.500)	-0.164 (-1.527)
Risk & return	$BETA_{im}$				-0.133** (-2.401)	-0.036** (-2.450)
	RET_{iy}				0.197** (1.993)	0.054** (2.030)
	$INVMILLS_{it}$				-0.306 (-1.230)	-0.084 (-1.238)
	Model		Fractional probit		Fractional probit	
	Fixed effects		FF12 & year		FF12 & year	
	Clustered SEs		FF48		FF48	
	Balanced controls		Full entropy		Full entropy	
	N		4,727		4,727	

TABLE 17 (continued on next page)

Panel C: Decreased information asymmetry

			Dependent variable = $\Delta SPREAD_{im+1}$	
		Pred.	(1)	(2)
	Intercept		N/A due to F.E.	N/A due to F.E.
	$DISC_{it}$	-	-0.003* (-1.715)	-0.003* (-1.713)
Fundamentals	$SPREAD_{im}$		-0.049 (-1.600)	-0.059* (-1.910)
	$MKVAL_{iq}$			-0.000 (-0.473)
	MTB_{iq}			0.000 (0.650)
	LEV_{iq}			0.001 (0.257)
	$INTAN_{iq}$			0.001 (0.412)
	CFO_{iq}			-0.015* (-1.831)
	$OPACC_{iq}$			-0.005 (-0.836)
	$DIVYIELD_{iq}$			0.329** (2.028)
Ruck & return	$BETA_{im}$			-0.001 (-1.087)
	RET_{iy}			-0.002* (-1.665)
	$INVMILLS_{it}$			0.001 (0.248)
	Model		OLS	OLS
	Fixed effects		FF12 & year	FF12 & year
	Clustered SEs		FF48 & year	FF48 & year
	Balanced controls		Full entropy	Full entropy
	N		60,604	60,604
	Adj. R^2		0.019	0.027

TABLE 17 (continued)

Notes: Panel A presents results of poisson regressions of the number of bidders for observations matched to SDC. $NUMBIDDERS_{it}$ is the number of bidders in the formal, public and final round of the sale process. Panel B presents the results of fractional probit regressions of the percentage of cash consideration in the M&A bid ($PERCCASH_{it}$) for observations matched to SDC. Panel C presents results of OLS regressions of the change in bid-ask spread ($\Delta SPREAD_{im+1}$) at month m+1 compared to month m-1. M&A variables are limited by SDC Platinum coverage. Observations reflect M&A offers, which do not necessarily lead to completed transactions. The SDC screens are described in the data and sample section of the paper. Control firms (*DISC*=0) are full entropy-balanced based on fundamental, market, risk/return, analyst, and ownership characteristics in order to serve as the counterfactual to the disclosure group (*DISC*=1). Standard errors are clustered by Fama-French 48 industry and year. *Z*-statistics are in parentheses for poisson and fractional probit regressions. *T*-statistics are in parentheses for OLS regressions. ***, ** and * denote statistical significance at the 1, 5 and 10 percent levels, respectively, based on two-tailed tests. The sample consists of 65,411 firm-year observations from 1990 to 2014. The number of observations used in these regressions is lower due to missing values of non-required variables. See Appendix 3 for variable definitions.

TABLE 18 (continued on next page)

Mechanisms of disclosure costs

Panel A: Decreased revenue

		Pred.	Dependent variable = ΔREV_{iq+2} (1)	(2)
	Intercept		N/A due to F.E.	N/A due to F.E.
	$DISC_{it}$	-	-0.006* (-1.800)	-0.006* (-1.689)
Fundamentals	REV_{iq}		-0.010 (-0.925)	-0.000 (-0.023)
	$MKVAL_{iq}$			0.000 (0.250)
	MTB_{iq}			-0.001 (-1.345)
	LEV_{iq}			0.009 (1.590)
	$INTAN_{iq}$			0.016 (1.530)
	CFO_{iq}			-0.052** (-2.074)
	$OPACC_{iq}$			-0.105*** (-5.049)
	$DIVYIELD_{iq}$			0.382 (1.596)
Ruck & return	$BETA_{im}$			0.001 (0.444)
	RET_{iy}			0.000 (0.077)
	$INVMILLS_{it}$			-0.003 (-0.241)
	Model		OLS	OLS
	Fixed effects		FF12 & year	FF12 & year
	Clustered SEs		FF48 & year	FF48 & year
	Balanced controls		Full entropy	Full entropy
	N		55,791	55,791
	Adj. R^2		0.019	0.049

TABLE 18 (continued on next page)

Panel B: Decreased operating income

		Pred.	Dependent variable = ΔOI_{iq+2} (1)	(2)
	Intercept		N/A due to F.E.	N/A due to F.E.
	$DISC_{it}$	-	-0.010*** (-3.539)	-0.010*** (-3.518)
Fundamentals	OI_{iq}		0.242*** (7.715)	0.251*** (8.163)
	$MKVAL_{iq}$			-0.000 (-1.528)
	MTB_{iq}			-0.000*** (-3.149)
	LEV_{iq}			0.003 (0.508)
	$INTAN_{iq}$			0.015 (1.243)
	CFO_{iq}			-0.019 (-0.484)
	$OPACC_{iq}$			-0.017** (-2.336)
	$DIVYIELD_{iq}$			0.151 (1.509)
Ruck & return	$BETA_{im}$			0.003 (1.257)
	RET_{iy}			0.000 (0.130)
	$INVMILLS_{it}$			0.017 (1.273)
	Model		OLS	OLS
	Fixed effects		FF12 & year	FF12 & year
	Clustered SEs		FF48 & year	FF48 & year
	Balanced controls		Full entropy	Full entropy
	N		59,250	59,250
	Adj. R^2		0.100	0.107

TABLE 18 (continued)

Notes: Panel A presents results of OLS regressions of the change in change in revenue at quarter q+2 compared to q-2, which matches the respective seasonal quarters. ΔREV_{iq+2} is calculated as $REV_{iq+2} - REV_{iq-2}$. REV_{iq} is quarterly sales revenue scaled by average assets. Panel B presents results of OLS regressios of the change in operating income before depreciation at quarter q+2 compared to q-2, which matches the respective seasonal quarters. ΔOI_{iq+2} is calculated as $OI_{iq+2} - OI_{iq-2}$. OI_{iq} is quarterly operating income scaled by average assets. Control firms (*DISC*=0) are full entropy-balanced based on fundamental, market, risk/return, analyst, and ownership characteristics in order to serve as the counterfactual to the disclosure group (*DISC*=1). Standard errors are clustered by Fama-French 48 industry and year. *T*-statistics are in parentheses. ***, ** and * denote statistical significance at the 1, 5 and 10 percent levels, respectively, based on two-tailed tests. The sample consists of 65,411 firm-year observations from 1990 to 2014. The number of observations used in these regressions is lower due to missing values of non-required variables. See Appendix 3 for variable definitions.

TABLE 19 (continued on next page)

Falsification test using rumors for mechanisms of disclosure benefits

Panel A: Not greater number of bidders

			Dependent variable = $NUMBIDDERS_{it}$	
		Pred.	(1)	(2)
	Intercept		N/A due to F.E.	N/A due to F.E.
	$DISC_{it}$	0	0.065***	-0.055
			(2.963)	(-1.503)
Fundamentals	$MKVAL_{iq}$			-0.000***
				(-3.216)
	MTB_{iq}			-0.005*
				(-1.841)
	LEV_{iq}			-0.011
				(-0.193)
	$CASH_{iq}$			0.003*
				(1.812)
	$INTAN_{iq}$			-0.046
				(-0.750)
	CFO_{iq}			-0.298
				(-1.225)
	$OPACC_{iq}$			-0.275**
				(-2.306)
Risk & return	$BETA_{im}$			-0.001
				(-0.049)
	RET_{iy}			0.077
				(1.574)
	$INVMILLS_{it}$			0.130**
				(2.349)
	Model		Poisson	Poisson
	Fixed effects		FF12 & year	FF12 & year
	Clustered SEs		FF48 & year	FF48 & year
	Balanced controls		Full entropy	Full entropy
	N		508	508
	Pseudo R^2		0.0052	0.0083
	LR χ^2		5.93 (p=1.000)	9.46 (p=1.000)

TABLE 19 (continued on next page)

Panel B: Not greater valuation certainty in offer

			Dependent variable = $PERCCASH_{it}$			
		Pred.	Coefficient (1)	Marginal effect (2)	Coefficient (3)	Marginal effect (4)
	Intercept		N/A due to F.E.		N/A due to F.E.	
	$DISC_{it}$	0	0.080 (0.481)	0.021 (0.478)	0.181 (0.708)	0.045 (0.704)
Fundamentals	$MKVAL_{iq}$				-0.000* (-1.708)	-0.000* (-1.760)
	MTB_{iq}				-0.032** (-2.099)	-0.008** (-2.219)
	LEV_{iq}				-0.855*** (-3.470)	-0.215*** (-3.409)
	$CASH_{iq}$				0.034** (2.430)	0.008** (2.426)
	$INTAN_{iq}$				0.634** (2.216)	0.159** (2.242)
	CFO_{iq}				-0.416 (-0.402)	-0.105 (-0.401)
	$OPACC_{iq}$				-0.118 (-0.159)	-0.030 (-0.159)
Risk & return	$BETA_{im}$				-0.131* (-1.800)	-0.033* (-1.859)
	RET_{iy}				0.321** (2.542)	0.081*** (2.651)
	$INVMILLS_{it}$				-0.431 (-1.593)	-0.108 (-1.596)
	Model		Fractional probit		Fractional probit	
	Fixed effects		FF12 & year		FF12 & year	
	Clustered SEs		FF48		FF48	
	Balanced controls		Full entropy		Full entropy	
	N		447		447	

TABLE 19 (continued on next page)

Panel C: Not decreased information asymmetry

			Dependent variable = $\Delta SPREAD_{im+1}$	
		Pred.	(1)	(2)
	Intercept		N/A due to F.E.	N/A due to F.E.
	$DISC_{it}$	0	0.003** (2.083)	-0.004 (-1.484)
Fundamentals	$SPREAD_{im}$		-0.385*** (-6.700)	-0.413*** (-7.463)
	$MKVAL_{iq}$			-0.000** (-2.057)
	MTB_{iq}			0.000 (1.116)
	LEV_{iq}			0.006*** (3.027)
	$INTAN_{iq}$			0.003 (1.177)
	CFO_{iq}			-0.028* (-1.819)
	$OPACC_{iq}$			-0.011 (-1.208)
	$DIVYIELD_{iq}$			0.186 (1.110)
Ruck & return	$BETA_{im}$			-0.000 (-0.077)
	RET_{iy}			-0.007*** (-3.126)
	$INVMILLS_{it}$			0.006** (2.029)
	Model		OLS	OLS
	Fixed effects		FF12 & year	FF12 & year
	Clustered SEs		FF48 & year	FF48 & year
	Balanced controls		Full entropy	Full entropy
	N		1,058	1,058
	Adj. R^2		0.212	0.234

TABLE 19 (continued)

Notes: Panel A presents results of poisson regressions of the number of bidders for observations matched to SDC. $NUMBIDDERS_{it}$ is the number of bidders in the formal, public and final round of the sale process. Panel B presents the results of fractional probit regressions of the percentage of cash consideration in the M&A bid ($PERCCASH_{it}$) for observations matched to SDC. Panel C presents results of OLS regressions of the change in bid-ask spread ($\Delta SPREAD_{im+1}$) at month m+1 compared to month m-1. M&A variables are limited by SDC Platinum coverage. Observations reflect M&A offers, which do not necessarily lead to completed transactions. The SDC screens are described in the data and sample section of the paper. Control firms (*DISC*=0) are full entropy-balanced based on fundamental, market, risk/return, analyst, and ownership characteristics in order to serve as the counterfactual to the disclosure group (*DISC*=1). Standard errors are clustered by Fama-French 48 industry and year. *Z*-statistics are in parentheses for poisson and fractional probit regressions. *T*-statistics are in parentheses for OLS regressions. ***, ** and * denote statistical significance at the 1, 5 and 10 percent levels, respectively, based on two-tailed tests. The sample consists of 990 disclosure (*DISC*=1) firm-year observations and 150 rumor firm-year observations from 1990 to 2014. The number of observations used in these regressions is lower due to missing values of non-required variables. See Appendix 3 for variable definitions.

TABLE 20 (continued on next page)

Falsification test using rumors for mechanisms of disclosure costs

Panel A: Not decreased revenue

		Pred.	Dependent variable = ΔREV_{iq+2} (1)	(2)
	Intercept		N/A due to F.E.	N/A due to F.E.
	$DISC_{it}$	0	-0.003 (-0.411)	0.004 (0.365)
Fundamentals	REV_{iq}		-0.021 (-0.971)	-0.008 (-0.337)
	$MKVAL_{iq}$			0.000 (0.473)
	MTB_{iq}			-0.002 (-1.497)
	LEV_{iq}			-0.002 (-0.162)
	$INTAN_{iq}$			0.032 (1.577)
	CFO_{iq}			-0.053 (-0.977)
	$OPACC_{iq}$			-0.111*** (-2.642)
	$DIVYIELD_{iq}$			0.472 (0.909)
Ruck & return	$BETA_{im}$			0.003 (1.128)
	RET_{iy}			0.014*** (3.342)
	$INVMILLS_{it}$			-0.011 (-0.745)
	Model		OLS	OLS
	Fixed effects		FF12 & year	FF12 & year
	Clustered SEs		FF48 & year	FF48 & year
	Balanced controls		Full entropy	Full entropy
	N		929	929
	Adj. R^2		0.019	0.062

TABLE 20 (continued on next page)

Panel B: Not decreased operating income

		Pred.	Dependent variable = ΔOI_{iq+2} (1)	(2)
	Intercept		N/A due to F.E.	N/A due to F.E.
	$DISC_{it}$	0	-0.002 (-0.571)	-0.015 (-0.937)
Fundamentals	OI_{iq}		0.350*** (3.694)	0.362*** (3.428)
	$MKVAL_{iq}$			-0.000 (-0.834)
	MTB_{iq}			-0.001* (-1.810)
	LEV_{iq}			-0.004 (-0.392)
	$INTAN_{iq}$			0.022 (1.136)
	CFO_{iq}			-0.046 (-0.595)
	$OPACC_{iq}$			-0.020 (-1.236)
	$DIVYIELD_{iq}$			0.317 (1.195)
Ruck & return	$BETA_{im}$			0.008 (1.401)
	RET_{iy}			0.006* (1.745)
	$INVMILLS_{it}$			0.016 (0.855)
	Model		OLS	OLS
	Fixed effects		FF12 & year	FF12 & year
	Clustered SEs		FF48 & year	FF48 & year
	Balanced controls		Full entropy	Full entropy
	N		924	924
	Adj. R^2		0.162	0.176

TABLE 20 (continued)

Notes: Panel A presents results of OLS regressions of the change in change in revenue at quarter q+2 compared to q-2, which matches the respective seasonal quarters. ΔREV_{iq+2} is calculated as $REV_{iq+2} - REV_{iq-2}$. REV_{iq} is quarterly sales revenue scaled by average assets. Panel B presents results of OLS regressios of the change in operating income before depreciation at quarter q+2 compared to q-2, which matches the respective seasonal quarters. ΔOI_{iq+2} is calculated as $OI_{iq+2} - OI_{iq-2}$. OI_{iq} is quarterly operating income scaled by average assets. Control firms (*DISC*=0) are full entropy-balanced based on fundamental, market, risk/return, analyst, and ownership characteristics in order to serve as the counterfactual to the disclosure group (*DISC*=1). Standard errors are clustered by Fama-French 48 industry and year. *T*-statistics are in parentheses. ***, ** and * denote statistical significance at the 1, 5 and 10 percent levels, respectively, based on two-tailed tests. The sample consists of 990 disclosure (*DISC*=1) firm-year observations and 150 rumor firm-year observations from 1990 to 2014. The number of observations used in these regressions is lower due to missing values of non-required variables. See Appendix 3 for variable definitions.

TABLE 21 (continued on next page)

Model for inverse mills ratio

		Dependent variable = $DISC_{it}$	
		Coefficient (1)	Marginal effect (2)
	Intercept	N/A due to F.E.	
Fundamentals	$MKVAL_{iq}$	-0.000*** (-6.690)	-0.000*** (-6.599)
	MTB_{iq}	-0.005*** (-2.769)	-0.000*** (-2.763)
	LEV_{iq}	0.063** (2.242)	0.002** (2.240)
	$CASH_{iq}$	0.037** (2.171)	0.001** (2.168)
	$INTAN_{iq}$	0.259*** (2.746)	0.009*** (2.740)
	ΔROA_{iq}	-0.309** (-2.313)	-0.011** (-2.310)
	CFO_{iq}	-0.262 (-1.528)	-0.009 (-1.527)
	$OPACC_{iq}$	-0.465*** (-3.935)	-0.017*** (-3.917)
Risk & return	$BETA_{im}$	-0.031** (-2.333)	-0.001** (-2.330)
	RET_{iy}	-0.191*** (-7.122)	-0.007*** (-7.013)
	$ANALYSTEST_{im}$	-0.027* (-1.905)	-0.001* (-1.903)
Ownership	$INSTBLKOWN\%_{im}$	0.684*** (6.857)	0.025*** (6.763)
	$SHARESHELD_{im}$	-0.291*** (-3.219)	-0.011*** (-3.209)
	$EXISTRUMOR_{it}$	1.052*** (8.431)	0.038*** (8.282)

Model	Probit
Fixed effects	FF12 & year
Clustered SEs	No
Balanced controls	No
N	65,411
Pseudo. R^2	0.0633

Notes: This table presents the results of a probit regression of *DISC* on fundamental, risk, return, ownership, and sales process variables used to calculate the inverse Mills ratio. The inverse Mills ratio is calculated as the standard normal distribution function at $\widehat{DISC}$ divided by the standard normal cumulative density function at $\widehat{DISC}$. $\widehat{DISC}$ is the fitted value of *DISC* using a probit regression on *MKVAL*, *MTB*, *LEV*, *CASH*, *INTAN*, ΔROA, *CFO*, *OPACC*, *BETA*, RET_{iy}, *ANALYSTEST*, *INSTBLKOWN%*, *SHARESHELD*, and *EXISTRUMOR*. FF12 industry and year fixed effects are included in the probit regression to capture varying probability of disclosing strategic alternatives dependent on industry and year. Where *ANALYSTEST*, *INSTBLKOWN%*, or *SHARESHELD* are missing, the mean industry-year average value is filled in, to avoid generating missing values of $\widehat{DISC}$ and *INVMILLS*. Standard errors are not corrected. *T*-statistics are in parentheses. ***, ** and * denote statistical significance at the 1, 5 and 10 percent levels, respectively, based on two-tailed tests. The sample consists of 65,411 firm-year observations from 1990 to 2014. See Appendix 3 for variable definitions.

TABLE 22 (continued on next page)

Determinants of disclosure

		Dependent variable = $DISC_{it}$			
		Coefficient (1)	Marginal effect (2)	Coefficient (3)	Marginal effect (4)
	Intercept	N/A due to F.E.		N/A due to F.E.	
Fundamentals	$MKVAL_{iq}$	-0.000*** (-3.352)	-0.000*** (-3.494)	-0.000*** (-3.409)	-0.000*** (-4.293)
	MTB_{iq}	-0.014** (-2.266)	-0.005*** (-3.016)	-0.012** (-2.117)	-0.004* (-1.655)
	LEV_{iq}	0.098 (0.815)	0.034 (0.871)	0.468*** (3.231)	0.148** (2.259)
	$CASH_{iq}$	0.052 (1.632)	0.018* (1.669)	0.090*** (4.180)	0.029*** (2.864)
	$INTAN_{iq}$	0.648** (2.122)	0.222*** (3.158)	0.786*** (3.051)	0.248** (2.497)
	CFO_{iq}	-0.652 (-1.022)	-0.223 (-1.201)	-3.095* (-1.738)	-0.977** (-2.537)
	$OPACC_{iq}$	-1.304*** (-3.852)	-0.447*** (-3.850)	-1.810*** (-2.833)	-0.571** (-2.469)
Risk & return	$BETA_{im}$	-0.015 (-0.319)	-0.005 (-0.391)	-0.001 (-0.009)	-0.000 (-0.012)
	RET_{iy}	-0.608*** (-4.813)	-0.208*** (-7.469)	-0.384** (-2.290)	-0.121*** (-3.130)
	$EXISTRUMOR_{it}$	1.458*** (8.695)	0.499*** (8.405)	1.431*** (4.555)	0.452*** (4.710)
Analysts	$ANALYSTEST_{im}$	-0.003 (-0.114)	-0.001 (-0.129)		
	$NUMANALYSTS_{im}$	-0.014** (-2.116)	-0.005* (-1.892)		
Ownership	$INSTBLKOWN\%_{im}$	0.542* (1.913)	0.186** (2.415)		
	$NUMACTIVISTS_{im}$	0.242*** (5.638)	0.083*** (5.325)		

	SHARESHELD$_{im}$	-0.415***	-0.142*		
		(-2.861)	(-1.866)		
Governance	*PARACHUTE*$_{im}$			0.323**	0.102***
				(2.568)	(2.590)
	POISONPILL$_{im}$			0.035	0.011
				(0.444)	(0.316)
	Model	Probit		Probit	
	Fixed effects	FF12 & year		FF12 & year	
	Clustered SEs	FF48 & year		FF48 & year	
	Balanced controls	Industry- and year- entropy		Industry- and year- entropy	
	N	26,692		12,465	
	Pseudo. R^2	0.1349		0.190	

Notes: This table presents results from probit regressions to predict the likelihood of disclosure. Because this is a test for determinants of disclosure, industry- and year- balanced entropy weights are used on the control group (see the research design section). Column (2) incorporates analyst and investor characteristics *ANALYSTEST*, *NUMANALYSTS*, *INSTOWN%* and *NUMACTIVISTS*, which limits the number of observations. Column (3) incorporates governance provisions *PARACHUTE* and *POISONPILL*, which further limits the number of observations. Standard errors are clustered by firm and year. *Z*-statistics are in parentheses. ***, ** and * denote statistical significance at the 1, 5 and 10 percent levels, respectively. Interpretations of the coefficients' marginal effects are discussed in the text.

Appendices

APPENDIX 1

Comparing the disclosing group to the counterfactual control group

Disclosing firms		Control firms		Notes
These firms publicly disclose strategic alternatives. This may occur before receiving any bid. This may occur after receiving a bid (hostile or friendly) or preliminary indication of interest. This may also occur after private efforts to find a buyer have failed.	→ Subsequently acquired	These firms privately explore strategic alternatives. This may occur before receiving any bid. This may occur after receiving a bid (hostile or friendly) or preliminary indication of interest.	→ Subsequently acquired	The target control firms evaluated strategic alternatives privately, and were taken over. The inclusion of hostile takeover targets that did not seek their sale may minimally impact the sample (Andrade et al., 2001) and works against my findings, as it would bias upwards the probability of takeovers and future returns in the control group.
	→ Subsequently liquidated		→ Subsequently liquidated	The entropy-balanced control firms are assumed to evaluate strategic alternatives privately.
	→ No transaction		→ No transaction	The entropy-balanced control firms are assumed to evaluate strategic alternatives privately.

Notes: This appendix compares the antecedent circumstances and future outcomes of firms that choose to disclose or not to disclose strategic alternatives.

APPENDIX 2

Example of a strategic alternatives disclosure

BlackBerry Board of Directors Announces Exploration of Strategic Alternatives (Aug 12, 2013)

WATERLOO, ONTARIO – BlackBerry Limited (NASDAQ:BBRY) (TSX:BB), a world leader in the mobile communications market, today announced that the Company's Board of Directors has formed a Special Committee to explore strategic alternatives to enhance value and increase scale in order to accelerate BlackBerry 10 deployment. These alternatives could include, among others, possible joint ventures, strategic partnerships or alliances, a sale of the Company or other possible transactions.

The Special Committee of the Board is comprised of Barbara Stymiest, Thorsten Heins, Richard Lynch and Bert Nordberg, and will be chaired by Timothy Dattels.

With the announcement of the Special Committee, Prem Watsa, Chairman and CEO of Fairfax Financial informed the Company that he felt it was appropriate to resign due to potential conflicts that may arise during the process. Fairfax Financial is the largest BlackBerry shareholder. Mr. Watsa said, "I continue to be a strong supporter of the Company, the Board and Management as they move forward during this process, and Fairfax Financial has no current intention of selling its shares."

“During the past year, management and the Board have been focused on launching the BlackBerry 10 platform and BES 10, establishing a strong financial position, and evaluating the best approach to delivering long-term value for customers and shareholders,” said Timothy Dattels, Chairman of BlackBerry’s Special Committee of the Board. “Given the importance and strength of our technology, and the evolving industry and competitive landscape, we believe that now is the right time to explore strategic alternatives.”

Thorsten Heins, President and Chief Executive Officer of BlackBerry, added, “We continue to see compelling long-term opportunities for BlackBerry 10, we have exceptional technology that customers are embracing, we have a strong balance sheet and we are pleased with the progress that has been made in our transition. As the Special Committee focuses on exploring alternatives, we will be continuing with our strategy of reducing cost, driving efficiency and accelerating the deployment of BES 10, as well as driving adoption of BlackBerry 10 smartphones, launching the multi-platform BBM social messaging service, and pursuing mobile computing opportunities by leveraging the secure and reliable BlackBerry Global Data Network.”

JP Morgan Securities LLC is serving as financial advisor to BlackBerry and Skadden, Arps, Slate, Meagher & Flom LLP and Torys LLP are serving as legal advisors.

There can be no assurance that this exploration process will result in any transaction. The Company does not currently intend to disclose further developments with respect to this process, unless and until its Board of Directors approves a specific transaction or otherwise concludes the review of strategic alternatives.

APPENDIX 3 (continued on next page)

Variable definitions

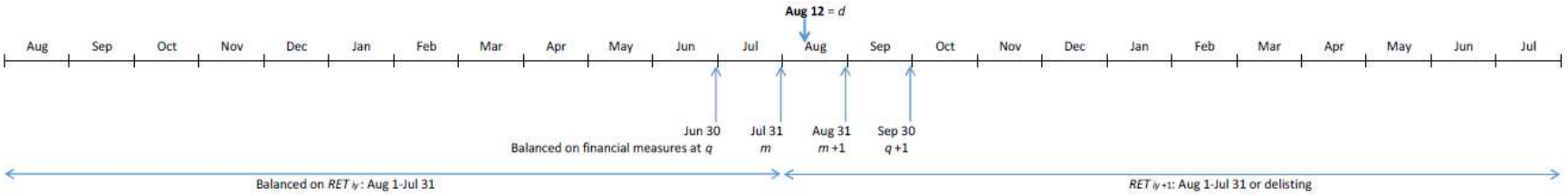
Variable	Definition
Disclosure	
$DISC_{it}$	=1 if firm *i* discloses strategic alternatives in year *t* (disclosing group), and =0 otherwise (control group).
Disclosure traits	
$SALEWORDS_{it}$	=1 if the sale and/or merger of the company are explicitly mentioned as possible alternatives.
$FINWORDS_{it}$	=1 if financial alternatives, including refinancing, restructuring and/or recapitalization, are explicitly mentioned as possible alternatives.
$ADVISOR_{it}$	=1 if the firm has retained a financial or legal advisor to assist in the process.
$CONFOUNDEARN_{it}$	=1 if there is confounded earnings guidance or earnings news in the surrounding three days or bundled with the strategic alternatives announcement.
$CONFOUNDTURN_{it}$	=1 if there is confounded director or executive turnover news bundled with or on the same day as the strategic alternatives announcement.
$EXISTINTEREST_{it}$	=1 if the disclosure indicates that interest already exists, for example, the firm is engaged in preliminary talks or the firm is shopping itself in response to receiving an unsolicited offer. Announcements about the receipt of an acquisition, merger or tender offer from a bidder are excluded from the disclosure sample while announcements about initiating strategic alternatives *after* receiving an (unsolicited) offer are included.
Outcomes	
$ACQ1YR_{id}$	=1 if firm *i* is acquired within 365 days after the strategic alternatives announcement date or pseudo-announcement date. Acquisitions are identified using Compustat deletion reasons 1, 4, 6, 9; CRSP delisting code 2; SDC completed merger.
$ACQ2YR_{id}$	=1 if firm i is acquired within 730 days after the strategic alternatives announcement date or pseudo-announcement date.
$LIQ1YR_{id}$	=1 if firm *i* is liquidated within 365 days after the strategic alternatives announcement date or pseudo-announcement date. Liquidations are identified using Compustat deletion reasons 2, 3; CRSP delisting codes 4, 5, 6, if not conflicted with *ACQ1YR* or *ACQ2YR*.
$LIQ2YR_{id}$	=1 if firm *i* is liquidated within 730 days after the strategic alternatives announcement date or pseudo-announcement date.
Fundamentals	
$ASSETS_{iq}$	Total assets of firm *i* at of the most recent quarter-end *q*.
$MKVAL_{iq}$	Market value of firm *i* at of the most recent quarter-end *q*, calculated as *PRCC_F* * *CSHO*.
MTB_{iq}	Market-to-book ratio of firm *i* at of the most recent quarter-end *q*, calculated as market value to book value of equity.
LEV_{iq}	Leverage of firm *i* at of the most recent quarter-end *q*, calculated as total liabilities over total assets.
$CASH_{iq}$	Liquid cash and cash equivalents of firm *i* at end of quarter *q*, over total assets.
$INTAN_{iq}$	Illiquid intangible assets of firm *i* at end of quarter *q*, over total assets.
ΔROA_{iq}	Year-over-year change in quarterly net income as a percentage of average total assets, calculated as $ROA_{iq} - ROA_{iq-4}$.
ROA_{iq}	Quarterly return on assets of firm *i* for the most recent quarter *q*, calculated as net income plus interest expense divided by average total assets.
OI_{iq}	Quarterly operating income of firm *i* for the most recent quarter *q*, calculated as operating income before depreciation divided by average total assets.
REV_{iq}	Quarterly sales revenue of firm *i* for the most recent quarter *q*, calculated as total revenue divided by average total assets.
CFO_{iq}	Quarterly cash flows from operations of firm *i* for the most recent quarter *q*, calculated as *OANCF* scaled by average assets.
CFI_{iq}	Quarterly cash flows from investing of firm *i* for the most recent quarter *q*,

	calculated as *IVNCF* scaled by average assets.
FCF_{iq}	Quarterly free cash flows of firm *i* for the most recent quarter *q*, calculated as *OANCF + IVNCF* scaled by average assets.
$OPACC_{iq}$	Quarterly total operating accruals of firm *i* for the most recent quarter *q*, calculated as *(ΔAT – ΔCHE) – (ΔLT – ΔLCT – ΔDLT)*.
$DIVYIELD_{iq}$	Quarterly dividend yield of firm *i* for the most recent quarter *q*, calculated as *DVC / (PRCC_F * CSHO)*.
Future operations	
$AVGROA_{iy+1}$	Average future quarterly ROA for the year after the announcement or pseudo-announcement, using ROA_{iq+1}, ROA_{iq+2}, ROA_{iq+3} and ROA_{iq+4} when available. If no future quarterly ROA is available (i.e. the firm is delisted before the next quarterly financials), then ROA_{iq} is used.
ΔREV_{iq+2}	Change in sales over assets, calculated as $REV_{iq+2} - REV_{iq-2}$, accounting for the seasonality of quarterly revenue.
ΔOI_{iq+2}	Change in operating income over assets, calculated as $OI_{iq+2} - OI_{iq-2}$, accounting for the seasonality of quarterly operating income.
Returns & risk	
$BETA_{iy}$	Annual market portfolio beta from regressing firm *i*'s monthly returns on the monthly market excess returns (R_m-r_f) using years *y*, *y*-1 and *y*-2 data when available. Regressions require at least 10 observations.
$SPREAD_{im}$	Bid-ask spread of firm *i* at end of month *m*, calculated as the ask price minus bid price divided by closing price, from the CRSP monthly file.
$RET3DAY_{id}$	Three-day buy and hold returns surrounding the announcement date or pseudo-announcement date.
RET_{iy}	12-month buy-and-hold return. Subscript *y* refers to the 12-month period before the announcement or pseudo-announcement month. Subscript *y+1* refers to the 12-month period starting with the month of the announcement or pseudo-announcement.
$CUMDRET_{iy+1}$	Cumulative buy-and-hold returns over a custom window from day -12 to day +252 (in trading days, equivalent to one year) after the announcement or pseudo-announcement date. If delisting occurs due to acquisition (*ACQ1YR*=1) or liquidation (*LIQ1YR*=1) within one year, then $CUMDRET_{iy+1}$ ends with the delisting return, without reinvestment.
RET_{iy+1}^{CAPM}	12-month buy-and-hold risk-adjusted return, calculated as $\prod_{m=1}^{12}(1 + aret_{im})$, where $aret_{im} = ret_{im} - \hat{\beta}_{iy} r_m^{mkt}$. $\hat{\beta}_{iy}$ is the CAPM beta estimated annually using 36 monthly observations of firm *i* during years *y*-1, *y*, and *y*+1: $(ret_{im} - r_m^f) = \alpha_{im} + \beta_{iy}(r_m^{mkt} - r_m^f) + \varepsilon_{im}$. Monthly market return r_m^{mkt} is the CRSP value-weighted monthly return including dividends.
$RET_{iy+1}^{CAPM,12m}$	Equals RET_{iy+1}^{CAPM} if firm *i*'s CRSP time series is not delisted before month 12. If the monthly data is delisted within the 12 months after the announcement or pseudo-announcement month, then the terminal 12-months' buy-and-hold risk-adjusted return is used.
Analysts	
$ANALYSTEST_{im}$	Consensus analyst EPS growth estimate for firm *i* at month m, calculated as (*consensus EPS estimate*$_{im}$ – *actual*$_{im-12}$) / *actual*$_{im-12}$. Source: I/B/E/S.
$NUMANALYSTS_{im}$	Number of analysts following firm *i* at month *m*, calculated as the number of earnings forecasts used in determining the consensus estimate for fiscal year earnings. Source: I/B/E/S.
Investors	
$INSTOWN\%_{im}$	Institutional ownership as a percent of shares outstanding, by asset managers with $100+ million AUM, for firm *i* at the end of the most recent month *m* before the announcement or pseudo-announcement. Source: Thomson Reuters Institutional Holdings.
$INSTBLKOWN\%_{im}$	Institutional blockholders' ownership as a percent of shares outstanding, by asset

	managers with $100+ million AUM and 5%+, for firm *i* at the end of the most recent month *m* before the announcement or pseudo-announcement. Source: Thomson Reuters Institutional Holdings.
$NUMINST_{im}$	Number of institutional shareholders who are asset managers with $100+ million AUM, for firm *i* at the end of the most recent month *m* before the announcement or pseudo-announcement. Source: Thomson Reuters Institutional Holdings.
$NUMINSTBLK_{im}$	Number of institutional blockholders that own 5%+ of shares outstanding, for firm *i* at the end of the most recent month *m* before the announcement or pseudo-announcement. Source: Thomson Reuters Institutional Holdings.
$ACTIVISTOWN\%_{im}$	Activist ownership as a percent of shares outstanding, aggregated from Schedule 13-D filings, for firm *i* at the end of the most recent month *m* before the announcement or pseudo-announcement. Missing values are assumed to be zero if institutional ownership data is non-missing. Source: Audit Analytics.
$NUMACTIVISTS_{im}$	Number of activist investors counted as unique 13-D filings non-zero-ownership in firm *i* at the end of the most recent month *m* before the announcement or pseudo-announcement. Missing values are assumed to be zero if institutional ownership data is non-missing. Source: Audit Analytics.
$SHARESHELD_{im}$	Insiders' shares held in firm *i* at the end of month *m*, as a percent of shares outstanding. In this study, insiders are the CEO; Chairman of the Board; Director; CFO; General Counsel; Partner; Director and Beneficial Owner; Officer Director and Beneficial Owner; Officer and Director; and Vice Chairman. Source: Thomson Reuters Insider Filing Data Table 1.
Governance	
$BLANKCHK_{im}$	=1 if firm *i* has a blank check provision at the end of the most recent month *m* before the announcement or pseudo-announcement. Source: Risk Metrics/ISS Governance.
$CBOARD_{im}$	=1 if firm *i* has a classified board (including staggered board) as of the end of the most recent month *m* before the announcement or pseudo-announcement. Source: Risk Metrics/ISS Governance.
$PARACHUTE_{im}$	=1 if firm *i* has a golden parachute provision at the end of the most recent month *m* before the announcement or pseudo-announcement. Source: Risk Metrics/ISS Governance.
$POISONPILL_{im}$	=1 if the firm *i* board has adopted a poison pill provision as of the end of the most recent month *m* before the announcement or pseudo-announcement. Source: Risk Metrics/ISS Governance.
Selection	
$INVMILLS_{it}$	Inverse Mills ratio, calculated as the standard normal distribution function at $\widehat{DISC}$ divided by the standard normal cumulative density function at $\widehat{DISC}$. $\widehat{DISC}$ is the fitted value of *DISC* using a probit regression on *MKVAL*, *MTB*, *LEV*, *CASH*, *INTAN*, ΔROA, *CFO*, *OPACC*, *BETA*, RET_{iy}, *ANALYSTEST*, *INSTBLKOWN%*, *SHARESHELD*, and *EXISTRUMOR*. FF12 industry and year fixed effects are included in the probit regression to capture varying probability of disclosing strategic alternatives dependent on industry and year. Where *ANALYSTEST*, *INSTBLKOWN%*, or *SHARESHELD* are missing, the mean industry-year average value is filled in, to avoid generating missing values of $\widehat{DISC}$ and *INVMILLS*.

APPENDIX 4

Example timeline of measurement windows for an August 12 disclosure



Notes: This exhibit shows how variables are measured for an example observation with an August 12 announcement date. The quarterly and monthly variables are subscripted *iq* and *im*, respectively, and refer to the most recent data at the announcement date. In this example, the financial variables at *q* refer to the amounts at June 30. Monthly price, investor and governance data at *m* would refer to the amounts at July 31. Annual returns during *y* are the 12-month returns ending the last month before the announcement, ending July 31 in this example. Annual returns during *y*+1 are the 12-month returns starting with the announcement month, starting August 1 in this example. If the firm is acquired or liquidated within the next 12-months, annual returns during *y*+1 will end with the delisting return.

In full entropy-balancing, each control observation is assigned a weight strictly greater than 0 and less than or equal to 1, and the sum of all weights is 990. With full entropy-balanced controls, specified variables denoted *iq*, *im*, and *iy* – the most recent quarterly, monthly and annual characteristics about firm *i* at the time of the announcement or pseudo-announcement – are not different between the disclosure group and control group, on average and in standard deviation.