WHY DO ACQUIRERS MANAGE EARNINGS BEFORE STOCK-FOR-STOCK ACQUISITIONS?

by

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DISSERTATION ABSTRACT

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In this dissertation, I examine whether high disclosure costs explain why acquirers manage earnings before stock-for-stock acquisitions. Because stock-for-stock acquirers use their own shares to pay for targets' shares, stock-for-stock acquirers have incentives to manage earnings in order to boost their stock prices. I show that high disclosure costs lead to an equilibrium in which acquirers engage in earnings management in a manner consistent with target firms' expectations. As a result, I hypothesize that stock-for-stock acquirers with high disclosure costs are more likely to manage earnings before the acquisition than stock-for-stock acquirers with low disclosure costs.

Using a sample of stock-for-stock acquisitions in the United States during the period from 1988 to 2009, I find a positive association between acquirers' proprietary disclosure costs and pre-acquisition abnormal accruals. In addition, I find a negative association between pre-acquisition abnormal accruals and abnormal stock returns around the acquisition announcement for acquirers with high proprietary disclosure costs but not for acquirers with low proprietary disclosure costs. Assuming that the market is efficient with respect to publicly available information, this evidence is also consistent with

acquirers with high proprietary disclosure costs using abnormal accruals to manage earnings. Finally, I do not find a statistically significant association between the extent of acquirers' earnings management and the acquisition premium received by target shareholders. This is consistent with acquirers' earnings management not serving to extract wealth from target shareholders. Overall, the evidence in this dissertation suggests that earnings management by stock-for-stock acquirers is a rational response to targets' expectations when high disclosure costs prevent the acquirers from credibly signaling the absence of earnings management.

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CHAPTER I

INTRODUCTION

Prior research documents that acquirers use discretionary accruals to inflate earnings before stock-for-stock acquisitions (Erickson and Wang 1999; Louis 2004; Botsari and Meeks 2008). At first glance, this evidence is consistent with acquirers' incentives to boost stock prices to reduce the cost of the acquisition. However, given target managers' strong incentives to detect earnings inflation and their ability to request additional information from acquiring firms, it is unlikely that target managers would be fooled by acquirers' earnings inflation.[1] This raises the question as to why acquirers continue to inflate earnings. One explanation is that acquirers inflate earnings because targets expect them to do so. This could be a rational choice if the acquirers are unable to credibly signal the absence of earnings inflation, given that the acquirers' incentives to inflate earnings are obvious to target managers (Stein 1989). In this dissertation, I examine whether costs associated with voluntary disclosures hinder acquirers' ability to signal the absence of earnings inflation, thereby leading to a separating equilibrium in which acquirers with high disclosure costs inflate earnings and acquirers with low disclosure costs do not inflate earnings prior to stock-for-stock acquisitions.

In a stock-for-stock acquisition, the acquirer uses its own shares to pay for the target's shares. Therefore, acquirer managers have ex ante incentives to manage earnings upward in order to inflate their share price before the acquisition. However, target managers should be able to anticipate the acquirer's incentives and request additional information from the acquirer during the due diligence process to verify whether the

[1] In this paper, the term "earnings inflation" refers to *upward* earnings management.

acquirer's earnings are inflated. As earnings management is costly (Dechow, Sloan, and Sweeney 1996; Gong, Louis, and Sun 2008), acquirer managers have incentives to provide the requested information to signal the absence of earnings management and avoid managing earnings. However, there are costs associated with disclosing the requested information to target managers. First, information necessary to verify the absence of earnings management might be proprietary in nature and revelation of such information could undermine the acquirer's competitive position. For example, verifying the absence of earnings management requires access to information about the acquirer's transactions with key customers and suppliers, expected future sales, plans to introduce new products, profitability by product or by geographic market, and investment opportunities. Second, due to the inherent complexity of their operation, it might be practically infeasible for some acquirers to provide sufficient information to convince target managers that earnings management does not occur. For example, firms with multiple business segments and firms with highly volatile earnings might find it difficult to provide sufficient information to signal the absence of earnings management.

If the cost of disclosing information to signal the absence of earnings management is high relative to the cost of managing earnings, an optimal strategy for the acquirer would be to withhold the information and forgo the opportunity to signal the absence of earnings management (Verrecchia 1983; Wagenhofer 2000; Hansen 2001). In this case, target managers, who understand the acquirer's incentives to bias earnings upward and are unable to verify the absence of earnings inflation, would rationally assume that the acquirer has inflated earnings and discount the acquirer's share value accordingly in

setting the exchange ratio.[2] Anticipating target managers' behavior, acquiring firms with high disclosure costs rationally use discretionary accruals to inflate earnings in accordance with target managers' expectation (Stein 1989). On the other hand, acquiring firms with low disclosure costs find it optimal to disclose information to signal the absence of earnings inflation and not to inflate earnings.[3]

The existence of a separating equilibrium, in which only stock-for-stock acquirers with disclosure costs that exceed the cost of earnings management would inflate earnings, leads to two empirical predictions. First, holding the cost of earnings management constant, there is a positive association between stock-for-stock acquirers' pre-acquisition abnormal accruals and disclosure costs.[4] Second, there is a negative association between pre-acquisition abnormal accruals and abnormal stock returns around the acquisition announcement for stock-for-stock acquirers with high disclosure costs but not for stock-for-stock acquirers with low disclosure costs. The second prediction should hold because when the acquisition is announced, the market recognizes stock-for-stock acquirers' incentives to inflate earnings and adjusts their stock prices downward for the assumed amount of earnings inflation, resulting in a negative association between acquirers' pre-acquisition abnormal accruals and abnormal stock returns around the acquisition announcement (Louis 2004). Since in equilibrium acquirers with high disclosure costs

[2] Exchange ratio is the number of the acquirer's shares to be exchanged for one target's share.

[3] A maintained assumption underlying this prediction is that an acquirer cannot simultaneously disclose information and manage earnings because their earnings management will be exposed by their disclosures. This assumption is consistent with the empirical evidence that firms that have more transparent disclosures are less likely to manage earnings around their seasoned equity offerings (Jo and Kim 2007).

[4] In this dissertation, abnormal accruals and discretionary accruals are used interchangeably to indicate the extent of earnings management.

inflate earnings and acquirers with low disclosure costs do not, I expect this negative association to only hold for acquirers with high disclosure costs.

I test my hypotheses using a sample of stock-for-stock acquisitions in the United States during the period from 1988 to 2009. I use abnormal current accruals to proxy for the extent of acquirers' earnings inflation. Abnormal current accruals are estimated using the performance-adjusted approach in Kothari, Leone, and Wasley (2005). Following prior studies, I use acquirers' industry concentration, price-cost margin, and market-to-book ratio as proxies for costs associated with disclosing proprietary information (Bamber and Cheon 1998; Harris 1998; Nevo 2001; Botosan and Stanford 2005; Karuna 2007). To proxy for the difficulty faced by acquirers in providing sufficient information to signal the absence of earnings management (i.e., disclosure complexity), I use acquirers' number of business segments and earnings volatility. Acquirers with more business segments or more volatile earnings are assumed to have higher disclosure costs.

Consistent with prior research (Erickson and Wang 1999; Louis 2004; Botsari and Meeks 2008), I find that, on average, stock-for-stock acquirers have positive and statistically significant abnormal accruals in the three quarters immediately before the acquisition announcement. Consistent with my first hypothesis, I find a positive and statistically significant association between stock-for-stock acquirers' pre-acquisition abnormal accruals and three proxies for proprietary disclosure costs (i.e., industry concentration, price-cost margin, and market-to-book ratio), after controlling for other factors known to affect firms' propensity to manage earnings. However, I do not find a positive and statistically significant association between acquirers' pre-acquisition abnormal accruals and two proxies for disclosure complexity (i.e., earnings volatility and

number of business segments). Consistent with my second hypothesis, I find a negative and statistically significant association between pre-acquisition abnormal accruals and abnormal stock returns around the acquisition announcement for stock-for-stock acquirers with high proprietary disclosure costs but not for stock-for-stock acquirers with low proprietary disclosure costs. Finally, similar to the results for the first hypothesis, I do not find evidence consistent with the second hypothesis when I use acquirers' earnings volatility and number of business segments as proxies for disclosure costs.

I conduct several additional tests to increase confidence that the above findings are consistent with high proprietary disclosure costs inducing acquirers' earnings management. First, I examine whether acquirers' earnings inflation reduces the amount of acquisition premium received by target shareholders. Following Schwert (1996), I calculate the acquisition premium as the cumulative abnormal return to the target's stock from the 42nd trading day prior to the acquisition announcement through the 126th trading day after the acquisition announcement (or through delisting, whichever comes first). Consistent with acquirers' earnings inflation not serving to extract wealth from target shareholders, I do not find a statistically significant association between acquirers' pre-acquisition abnormal accruals and acquisition premium. Second, I test whether the association between proprietary disclosure costs and pre-acquisition abnormal accruals holds for cash acquirers. Unlike stock-for-stock acquirers, cash acquirers pay their targets with cash and hence have no acquisition-induced incentive to inflate earnings. Therefore, I do not expect the association between proprietary disclosure costs and pre-acquisition abnormal accruals to hold for cash acquirers. Consistent with this prediction, the association between cash acquirers' proprietary disclosure costs and pre-acquisition

abnormal accruals is not statistically significant at conventional levels. In addition, neither cash acquirers with high disclosure costs nor cash acquirers with low disclosure costs have significantly positive abnormal accruals over the three quarters immediately before the acquisition announcement. Finally, I use the approach developed by Pungaliya and Vijh (2009) to adjust for both ROA and sales growth in estimating abnormal accruals for acquirers. Inferences are unchanged if I use this alternative measure of abnormal accruals as a proxy for earnings management to test my hypotheses.

This study makes several contributions to the literature. First, it offers an explanation for why acquirers inflate earnings before stock-for-stock acquisitions. Specifically, costs associated with disclosing proprietary information hinder acquirers' ability to signal the absence of earnings inflation, leading acquirers with high disclosure costs to inflate earnings. In a recent study, Pungaliya and Vijh (2009) question evidence of earnings management by stock-for-stock acquirers documented in prior literature by arguing that for acquirers to benefit from earnings management, it is necessary that target managers are either misled or not acting in the interest of target shareholders. My findings suggest that earnings management could occur even when target managers are rational and acting in the interest of their shareholders. More generally, the results in this paper imply that high disclosure costs could lead to earnings management in settings where managers are unable to mislead financial statement users. For example, Shivakumar (2000) finds that firms manage earnings before seasoned equity offerings even though investors understand their motives and fully adjust for earnings management when the offerings are announced. Coles, Hertzel, and Kalpathy (2006) find that prior to firms' reissuances of executive stock options, managers use discretionary accruals to

manage earnings downward even though investors and financial analysts properly anticipate and adjust for their earnings management.

Second, this study adds to the literature that examines the link between disclosure costs and managers' financial reporting choices. Prior studies have documented that firms with higher proprietary disclosure costs are less willing to provide voluntary disclosures because of concerns about revealing proprietary information that may undermine their competitive position (Bamber and Cheon 1998; Harris 1998; Botosan and Stanford 2005). The evidence in this study suggests that concerns about disclosing proprietary information may also lead firms to manipulate earnings because they are unable to credibly signal to financial statement users that their earnings are free from manipulation.

Finally, while prior research finds that stock-for-stock acquirers manage earnings prior to the acquisition, it is not clear whether acquirers successfully extract wealth from target shareholders. In this study, I do not find evidence that acquirers' earnings management affects the amount of acquisition premium received by target shareholders, suggesting that target managers properly anticipate and adjust for acquirers' earnings management to protect target shareholders.

The remainder of this dissertation is organized as follows: Chapter II provides a review of the related literature. Hypotheses are developed in Chapter III. Chapter IV describes the data and research design. Empirical results are presented in Chapter V. Chapter VI presents additional tests. Finally, summary and concluding remarks are provided in Chapter VII.

CHAPTER II

LITERATURE REVIEW

Earnings Management by Stock-for-Stock Acquirers

In a stock-for-stock acquisition, the acquirer uses its own shares to pay for the target's shares. The exchange ratio, defined as the number of the acquirer's shares in exchange for one target's share, is usually determined based on market prices of the acquirer's and the target's shares shortly before the acquisition announcement when these prices are available.[5] Holding the target's stock price constant, the higher the acquirer' stock price shortly before the acquisition agreement, the lower the exchange ratio will be. This implies that stock-for-stock acquirers have ex ante incentives to boost their stock prices shortly before the acquisition agreement. If earnings management allows acquirers to artificially inflate their stock prices in the short term, then one would expect that stock-for-stock acquirers have ex ante incentives to manage earnings upward in periods leading to the acquisition agreement. Prior studies have found empirical evidence consistent with this conjecture. Erickson and Wang (1999) examine a sample of 55 stock-for-stock acquisitions during the period 1985-1990 and find that stock-for-stock acquirers have abnormally high discretionary accruals in the three fiscal quarters immediately before the acquisition announcement.[6] They also find that acquirers' pre-acquisition abnormal

[5] In acquisition announcements, acquirers/targets and their financial advisors frequently express opinion about the fairness of the exchange ratio by reference to stock prices shortly before the acquisition announcement date.

[6] Erickson and Wang (1999) find that target firms have positive but statistically insignificant discretionary accruals before the acquisition announcement despite the fact that targets should also have incentives to boost their stock prices (Baik, Kang, and Morton [2007] find similar evidence). The authors suggest that acquirers are in a better position to identify their target and time the transaction. In contrast, it is usually too late for a target firm to manage earnings by the time the acquirer initiates the deal. While in principle an acquisition can be initiated by the target firm, in reality most deals are initiated by the acquirer (e.g.,

accruals are higher when the target is larger relative to the acquirer, consistent with acquirers managing earnings more when the economic benefits from earnings management are higher. Louis (2004) examines a sample of 236 stock-for-stock acquirers during the period 1992-2000 and finds similar evidence, except that acquirers in Louis (2004) only exhibit positive and statistically significant abnormal accruals in the latest quarter preceding the acquisition announcement. Finally, Botsari and Meeks (2008) examine a sample of 42 stock-for-stock acquirers in the United Kingdom during the period 1997-2001 and find that stock-for-stock acquirers have abnormally high discretionary accruals in the fiscal year immediately before the acquisition announcement.

While existing evidence consistently suggests that stock-for-stock acquirers inflate earnings before the acquisition, consistent with their incentives to boost stock prices, the role played by target managers has been ignored.[7] Target managers should have strong incentives to detect and adjust for the impact of earnings management on the acquirer's stock price. First, target managers have fiduciary duties to protect their shareholders. Second, target managers have equity ownership in the target firm and hence would act to protect their own interests.[8] Finally, allowing earnings management to transfer wealth from target shareholders to acquiring shareholders would likely damage the reputation of target managers.

Anilowski, Macias, and Sanchez [2009] find that in their sample of 279 negotiation acquisitions, only 25% of the deals are initiated by the target firm).

[7] In this dissertation, "target managers" refer to the target management team in charge of negotiating the acquisition, which may or may not include the target CEO (Heitzman 2009).

[8] Hartzell, Ofek, and Yermack (2004) find that the largest source of wealth increase for CEOs of target firms in mergers and acquisitions comes from appreciation of the their direct stockholdings in the target firms.

In a typical acquisition, both the acquirer and the target conduct due diligence. While the depth of the due diligence process varies, at the minimum both parties should focus on three areas: financial statements review, legal compliance review, and management and operations review (Lajoux and Elson 2000). While it might seem intuitive that due diligence should be of greater concern to acquiring firms, target firms are advised to pay special attention to the due diligence process when target shareholders are paid with the acquirer's shares instead of cash.[9] In conducting financial due diligence, target managers are assisted by their own accountants as well as professional financial advisors. Given target managers' incentives, expertise, and their access to additional information from the acquirer during the due diligence process, it is reasonable to assume that target managers would not be fooled by the acquirer's earnings management. Thus, existing evidence suggests a puzzle whereby acquirers inflate earnings prior to stock-for-stock acquisitions even though target managers should be able to anticipate and adjust for the earnings inflation.[10]

[9] "[J]ust as a buyer can be sued for paying too much money for an acquisition, a seller can be sued for accepting too little money." (Lajoux and Elson 2000, p.10)

[10] One could argue that although target managers are not fooled, they might not adjust for the acquirer's earnings inflation because they receive some personal benefits from the acquirer. Existing evidence as to whether target managers accept "sweetheart deals" at the expense of target shareholders are mixed. Hartzell, Ofek, and Yermack (2004) find a weakly negative association between merger premium and target CEOs' special treatments offered by acquiring firms. On the other hand, Bargeron, Schlingemann, Stulz, and Zutter (2010) find that acquirers' decision to retain target managers in the merged firm is primarily driven by performance related reasons (e.g., when the target CEO has specialized expertise, when the target has good past performance, and when the target insider ownership is high). Moreover, Baik et al. (2007) find stronger evidence of earnings management by acquirers when the target is a private firm, where the interests of target shareholders and managers are presumably aligned. Finally, Heitzman (2009) finds that target directors increase equity grants to target CEOs who negotiate the acquisition to align their interest with that of shareholders, which reduces the likelihood that target managers collude with the acquirer at the expense of target shareholders.

Disclosure Costs and Earnings Management by Stock-for-Stock Acquirers

One possible explanation for the aforementioned puzzle is that earnings inflation by stock-for-stock acquirers does not serve to extract wealth from target shareholders but rather is a rational response to targets' expectations when the acquirers are unable to credibly signal the absence of earnings inflation. This is the signal-jamming hypothesis offered by Stein (1989).[11] Since target managers know that the acquirer has ex ante incentives to inflate earnings, if the acquirer is unable to credibly signal the absence of earnings inflation, target managers would rationally assume that earnings inflation occurs and adjust the acquirer's reported earnings for the assumed amount of inflation in valuing the acquirer's shares. In this case, the acquirer's best response is to inflate earnings in a manner consistent with target managers' expectations. This analysis implies that high costs of signaling the absence of earnings inflation might lead acquirers to inflate earnings even though they are unable to fool target managers.

Early work in economics suggests that it is in the interest of sellers to fully reveal to buyers their private information about the quality of the asset that they are selling. The reason is that rational buyers would interpret withheld information as unfavorable and discount the asset's value to the point where all sellers of assets with quality higher than the worst one would find it desirable to reveal the quality of their asset (Grossman and Hart 1980; Grossman 1981; Milgrom 1981). Extending this idea to the realm of financial disclosures, one implication is that if managers' objective is to maximize the market value of their firm, they should fully disclose their private information to the market. However, we rarely observe full disclosures in reality. One explanation for partial

[11] Stein (1989) does not specifically examine stock-for-stock acquisitions. His signal-jamming model is developed to explain why managers manage earnings in more general settings.

disclosures is that there are costs associated with disclosing private information. When disclosures are costly, there exist equilibria in which not all information is disclosed even if the market is rational and presumes that withheld information is unfavorable (see for examples, Verrecchia 1983; Hayes and Lundholm 1996). While there are various costs associated with disclosing private information, the most compelling example are perhaps costs associated with revealing proprietary information, which might be used by competitors to the disadvantage of the disclosing firm (Verrecchia 2001, p. 141).

Consistent with this theoretical work, empirical studies have found evidence that costs associated with disclosing proprietary information deter firms' voluntary disclosures. For example, Harris (1998) and Botosan and Stanford (2005) find that firms withhold information about operations in industries characterized by high degrees of concentration or industries in which firms' abnormal profitability persists over time, consistent with concerns about revealing proprietary information discouraging transparent segment disclosures. Bamber and Cheon (1998) find that firms with more growth opportunities and firms that operate in more concentrated industries are less likely to issue earnings forecasts unless there is pressure from financial analysts. Moreover, firms with more growth opportunities and firms that operate in more concentrated industries tend to issue less specific forecasts, presumably because of concerns about revealing proprietary information. Finally, Dedman and Lennox (2009) survey managers of private firms in the UK and find that managers are more likely to withhold information about sales and cost of sales when they perceive that the degree of competition in their product market is high.

In the context of a stock-for-stock acquisition, target managers have strong incentives to remove any impact of earnings inflation on the acquirer's stock price to ensure that target shareholders are not underpaid for their firm. During the due diligence process, target managers can request information from the acquirer to verify whether the acquirer's earnings are biased. As earnings management is costly (Dechow et al. 1996; Gong et al. 2008), acquirer managers have incentives to signal the absence of earnings management and avoid managing earnings. However, in deciding whether to provide the requested information, acquirer managers also take into account costs associated with disclosing private information. First, some of the information necessary to identify "true" earnings can be proprietary in nature and revelation of such information is detrimental to the acquirer's competitive position. For example, information about transactions with key customers and suppliers, expected future sales, product development and introduction plans, or profitability by geographic market is necessary to verify the unbiasedness of earnings, but disclosing such information might be very costly to the acquirer.[12, 13] Second, due to the inherent complexity of their operation, it might be practically infeasible for some acquirers to provide sufficient information to convince target managers that the acquirers' earnings are unbiased.

[12] Dontoh (1989) presents a model in which competitors adjust their production schedule in response to firms' disclosures of future outcomes (e.g., earnings forecasts). More timely and accurate disclosures about future outcomes allow competitors to more efficiently adjust their production schedule and gain competitive advantages over the disclosing firms. Hayes and Lundholm (1996) model how competitors adjust their capital allocation in response to firms' disclosures of segment activities. More accurate disclosures of segment activities allow competitors to make more efficient capital allocation decisions at the expense of the disclosing firms.

[13] One might argue that because of the private nature of the information exchange through due diligence, the acquirer should not be concerned about proprietary disclosure costs. This argument may be reasonable if the acquirer is certain that the deal will go through, however, if the acquirer is uncertain, the acquirer would be concerned about disclosing proprietary information, especially when the target is an existing competitor of the acquirer, a potential entrant to the acquirer's market, or when there are multiple bidders and some of them are existing competitors of the acquirer. Boone and Mulherin (2007) find that for an average deal, there are nine bidders contacting or being contacted by one target.

Assuming that the objective of acquirer managers is to maximize their firm value, they would trade off the cost of managing earnings against the cost of disclosing private information to signal the absence of earnings management. If the cost of disclosing information is low relative to the cost of managing earnings, acquirer managers would choose to disclose information to signal the absence of earnings management and avoid managing earnings. In contrast, if the cost of disclosing information is high relative to the cost of managing earnings, acquirer managers would choose to withhold information and forgo the opportunity to signal the absence of earnings management (Verrecchia 1983; Wagenhofer 2000; Hansen 2001). Being unable to verify the absence of earnings management, target managers would rationally assume that earnings management occurs and discount the acquirer's stock price for the assumed impact of earnings inflation. Given target managers' strategy, the acquirer's best response in this case is to inflate earnings in accordance with target managers' conjecture.[14] In sum, differential costs of disclosure lead to a separating equilibrium in which acquirers with high disclosure costs inflate earnings and acquirers with low disclosure costs do not inflate earnings prior to the acquisition.[15] In the next section, I will develop hypotheses to test whether disclosure costs are associated with the propensity of stock-for-stock acquirers to manage earnings before the acquisition.

[14] Admittedly, acquirers might have other devices to signal the absence of earnings management. For example, insider share purchases can signal that the company's shares are not overvalued due to earnings inflation. To the extent that acquirers can use devices other than disclosures to signal the absence of earnings management, the role of disclosure costs becomes less important and I would be less likely to find evidence consistent with my hypotheses.

[15] See Appendix A for a formal illustration of an earnings management game with a separating equilibrium. This analysis is consistent with Hansen (2001), who presents a model of company auction in which the seller deliberately withholds information whose revelation might impose costs and reduce the firm value. Similarly, Wagenhofer (2000) analyzes acquisitions in which the buyer and seller are competitors and shows that uncertainty about the intention of the buyer (i.e., whether the buyer will actually buy or not) will deter disclosures of verifiable information by the seller. Although these studies focus on sellers' disclosure decisions, the same logic applies to buyers' disclosure strategies.

CHAPTER III

HYPOTHESIS DEVELOPMENT

Acquirers' Disclosure Costs and Pre-acquisition Abnormal Accruals

The analyses in the previous section suggest that stock-for-stock acquirers with high disclosure costs are more likely to manage earnings before the acquisition than stock-for-stock acquirers with low disclosure costs. Following prior studies (Botsari and Meeks 2008; Erickson and Wang 1999; Louis 2004), I use abnormal accruals as a proxy for earnings management. I then examine the association between acquirers' disclosure costs and abnormal accruals over the quarters leading to the acquisition announcement. If stock-for-stock acquirers with high disclosure costs are more likely to manage earnings before the acquisition than stock-for-stock acquirers with low disclosure costs, then we would expect a positive association between acquirers' disclosure costs and pre-acquisition abnormal accruals. Therefore, my first hypothesis is:

> *H1: There is a positive association between stock-for-stock acquirers' disclosure costs and pre-acquisition abnormal accruals.*

One might argue that using abnormal accruals to identify earnings management is problematic because accruals are publicly observable. That is, if target managers can detect earnings inflation by looking at abnormal accruals, acquirers would be able to signal the absence of earnings inflation through their accrual choices and hence do not have to inflate earnings. To see why the earnings inflation equilibrium still sustains even if target managers can observe acquirers' abnormal accruals, it is important to understand why the equilibrium exists in the first place. Since abnormal accruals are an imperfect measure of earnings management, target managers need access to additional private

information from the acquirer to correctly identify whether earnings management occurs. Target managers would infer earnings management occurs if the acquirer refuses to provide such information, regardless of the observed accruals. Anticipating target managers' strategy, acquirers that choose to withhold information (due to high disclosure costs) would rationally use abnormal accruals to inflate earnings. This implies that, on average, acquirers that inflate earnings should have higher abnormal accruals than acquirers that do not inflate earnings. Therefore, researchers can still rely on abnormal accruals to separate acquirers that manage earnings from acquirers that do not, as abnormal accruals are positively correlated with the extent of earnings management.[16]

Acquirers' Pre-acquisition Abnormal Accruals and Stock Returns Around Acquisition Announcements

This section develops a hypothesis about the association between stock-for-stock acquirers' pre-acquisition abnormal accruals and abnormal stock returns around the acquisition announcement. Since the market is not aware of the acquisition until it is announced, the market underestimates stock-for-stock acquirers' incentives to inflate earnings and hence underestimates the equilibrium level of earnings inflation, resulting in an overvaluation of stock-for-stock acquirers' shares before the acquisition announcement. Once the acquisition is announced, the market recognizes the acquirers' incentives to inflate earnings and adjusts their stock prices for the assumed amount of earnings inflation. This leads to a negative association between stock-for-stock

[16] Recent studies find an increasing trend of firms to use real earnings management as a substitute to accruals management after the passage of the Sarbanes-Oxley Act 2002 (Cohen, Dey, and Lys 2008; Graham, Harvey, and Rajgopal 2005; Jiang, Petroni, and Wang 2008). To the extent that stock-for-stock acquirers alter real activities to manage earnings, using abnormal accruals to measure earnings management works against finding evidence supporting my hypotheses.

acquirers' pre-acquisition abnormal accruals and abnormal stock returns around the acquisition announcement (Louis 2004). Since in equilibrium only acquirers with high disclosure costs inflate earnings while acquirers with low disclosure costs do not, I expect the negative association between pre-acquisition abnormal accruals and abnormal stock returns around the acquisition announcement to only hold for acquirers with high disclosure costs. This leads to my second hypothesis:

> *H2: There is a negative association between pre-acquisition abnormal accruals and abnormal stock returns around the acquisition announcement for stock-for-stock acquirers with high disclosure costs but not for stock-for-stock acquirers with low disclosure costs.*

CHAPTER IV

DATA DESCRIPTION AND RESEARCH DESIGN

Sample Description

My initial sample includes all mergers and acquisitions from the SDC Platinum database that meet the following criteria. (1) The deal is announced during the period from January 1988 to December 2009.[17] (2) Both the target and the acquirer are US firms. (3) The acquirer is a non-financial firm. (4) The acquirer is a public firm at the time of the acquisition. (5) The form of the deal is either merger or acquisition. (6) The deal value is available in the SDC Platinum database. (7) The deal is completed. (8) The consideration structure is pure stock. (9) The acquirer owns less than 50% of the target's shares before the acquisition. (10) The acquirer owns at least 51% of the target's shares after the acquisition. These data requirements are common in prior literature (Louis 2004; Baik et al. 2007; Raman, Shivakumar, and Tamayo 2008).

Applying these criteria results in an initial sample of 3,176 acquisitions. For acquirers that undertake multiple acquisitions, I drop deals that are preceded by another deal (regardless of payment consideration) completed within the previous eight quarters. This procedure is intended to reduce noise in measuring abnormal accruals for quarters that fall between two consecutive acquisitions (Hribar and Collins 2002). Requiring data from Compustat to calculate variables included in model (2) below reduces the sample to 890 stock-for-stock deals. Samples used in individual tests might be smaller due to more stringent data requirements. Table 1 outlines the sample selection process.

[17] The sample period begins in 1988 as historical SIC codes (SICH) are available in Compustat since 1987. Historical SIC codes are required to calculate industry concentration, industry adjusted price-cost margin and abnormal accruals, three key variables in this study.

Table 1: Sample Selection

Description	Obs
All stock-for-stock acquisitions from the SDC Platinum database that meet preliminary sample selection criteria	3,176
Drop deals that are preceded by another deal (regardless of payment consideration) completed within the previous eight quarters	(706)
Drop deals without sufficient data from Compustat to calculate variables included in model (2)	(1,565)
Drop acquirers with extreme abnormal accruals (top and bottom 0.5%)	(15)
Primary Sample	**890**

Variable Measurement

Performance Adjusted Abnormal Accruals

I use performance adjusted abnormal accruals as a proxy for earnings management. Performance adjusted abnormal accruals are estimated using the method in Kothari et al. (2005).[18] I first estimate model (1) below for each industry-year during my sample period using all available observations from Compustat (industries are defined in terms of the two-digit SIC assigned by Compustat, industry-years with less than 20 observations are excluded).

$$CA_{it} = \lambda_0 + \sum_{n=1}^{4} \lambda_n Q_{nit} + \lambda_5(\Delta SALE_{it} - \Delta AR_{it}) + \mu_{it} \qquad (1)$$

[18] A disadvantage of using aggregate abnormal accruals is that I am unable to determine exactly *how* acquirers manage earnings. However, since the objective is to examine *whether* earnings management occurs, using aggregate abnormal accruals might be more efficient than examining individual accounts because managers are likely to manipulate multiple accounts to make their earnings management less obvious. For example, in a recent roundtable hosted by the Financial Accounting Standards Research Initiative (FASRI), Aaron Beam (founding CFO of HealthSouth Corporation) revealed that before the HealthSouth accounting fraud was exposed in 2003, the company was using over 120,000 journal entries every quarter to spread their earnings manipulation all over the balance sheet. The archived copy of the roundtable can be found at: *http://fasri.net/index.php/2010/02/aaron-beam-weston-smith/*

CA_{it} is the current accruals of firm i in quarter t, which equals the change in current assets (excluding the change in cash) minus the change in current liabilities (excluding the change in short-term debt). Q_{nit} is a dummy variable equal to 1 for fiscal quarter n (n=1,…, 4), 0 otherwise. $\Delta SALE_{it}$ is the change in sales of firm i from quarter t-1 to quarter t. ΔAR_{it} is the change in accounts receivable of firm i in quarter t. All variables, including the quarter dummies, are scaled by lagged total assets. Following Louis (2004), all variables in model (1) are truncated at -1 and 1. Then, for each industry-quarter, I construct ROA quintiles based on firms' ROA for the same quarter in the previous year, and calculate the median residual from model (1) for each ROA quintile. I require each quintile to have at least 3 observations. Finally, the *performance adjusted abnormal accruals* is calculated as the difference between the residual from model (1) of each sample firm and the median residual of the ROA quintile that the firm belongs to.

Disclosure Costs

Measuring disclosure costs has always been a difficult task in the accounting literature. In this dissertation, I use five proxies for disclosure costs. Three proxies (acquirers' industry concentration, price-cost margin, and market-to-book ratio) are intended to capture costs associated with disclosing proprietary information to competitors and two proxies (acquirers' earnings volatility and number of business segments) are intended to capture the difficulty faced by acquirers in providing sufficient information to signal the absence of earnings management.

I assume that concerns about proprietary disclosure costs are higher when the firm faces stronger competitive pressures in its product market. Given this assumption, I use

acquirers' industry concentration and price-cost margin as two proxies for disclosure costs. Industry concentration has been widely used in the accounting literature to proxy for disclosure costs (Bamber and Cheon 1998; Harris 1998; Botosan and Stanford 2005). The intuition is that in highly concentrated industries, firms' disclosures are more likely to affect their competitors' actions. Moreover, large firms operating in concentrated industries likely have acquired some strategic advantages (Liebeler 1978), which makes it more dangerous for other firms to disclose proprietary information in such environment.[19] I calculate industry concentration as the ratio of total annual sales by four firms with the highest sales in each industry over total annual sales of all firms in that industry (the four-firm concentration ratio). Industries are defined in terms of the two-digit SIC assigned by Compustat. Industry concentration is measured for the year immediately before the acquisition announcement.

Price-cost margin has been a traditional measure of firms' market power in the Industrial Organization literature (e.g., Lerner 1934; Landes and Posner 1981; Nevo 2001) and accounting literature (Karuna 2007). I assume that firms with high market power face less competitive pressure and hence are likely less concerned about proprietary disclosure costs. Therefore, I use acquirers' price-cost margin as a second

[19] It is important to note that while prior studies predict a negative association between firms' industry concentration and voluntary disclosures, the underlying reasons for that prediction are not consistent. For example, Botosan and Stanford (2005) assume that firms in highly concentrated industries face less competition, which allows them to earn higher profit (the collusion hypothesis). Therefore, firms in concentrated industries have incentives to withhold information to deter entry. In contrast, Bamber and Cheon (1998) rely on Liebeler's (1978) argument that industries become highly concentrated because some firms have acquired superior competitive advantages, and it is more dangerous to disclose proprietary information in such industries (the competitive advantages hypothesis). Both the collusion hypothesis and the competitive advantages hypothesis are offered to explain the positive association between industry concentration and profit rates (e.g., Bain 1951). However, studies subsequent to Bain (1951) have questioned both the existence and persistence of such association (see Liebeler [1978] for a review). More importantly, Liebeler (1978) argues that even if such association exists, the competitive advantages hypothesis is superior to the collusion hypothesis since only the former can explain why entry and expansion do not occur in response to high profit rates.

proxy for disclosure costs, with high price-cost margin implying low disclosure costs. Specifically, I calculate the average price-cost margin for each acquirer over the three years immediately before the acquisition announcement. To control for differences in production technologies across industries, I adjust each acquirer's average price-cost margin by subtracting from it the median average price-cost margin of the acquirer's industry over the same three-year period (industries are defined in terms of the two-digit SIC assigned by Compustat). Following Karuna (2007), price-cost margin is calculated as sales divided by operating costs. Operating costs include cost of goods sold, selling, general and administrative (SG&A) expenses, and depreciation and amortization expenses.

My third proxy for proprietary disclosure costs is acquirers' market-to-book ratio. Firms with high market-to-book ratio likely have valuable growth opportunities, which might dissipate if information about those opportunities is revealed to competitors. Thus, acquirers with high market-to-book ratio are expected to have high proprietary disclosure costs (Bamber and Cheon 1998). I calculate market-to-book ratio as the market value divided by the book value of acquirers' equity at the end of the fourth fiscal quarter prior to the acquisition announcement.

Another source of disclosure costs comes from the difficulty in identifying and providing sufficient information for target managers to verify the absence of earnings management (i.e., disclosure complexity). Even if acquirers are not concerned about proprietary disclosure costs, the inherent complexity of their operation might make it practically impossible for some acquirers to provide sufficient information to convince target managers that the acquirers' earnings are not manipulated. This is likely to be the

case for acquirers operating in multiple business segments or acquirers that have highly volatile earnings. Therefore, I use acquirers' number of business segments and earnings volatility as two additional proxies for disclosure costs. Firms with more business segments or more volatile earnings are assumed to have higher disclosure costs. Acquirers' number of business segments is obtained from the Compustat Segments Files. Acquirers' earnings volatility is calculated as the standard deviation of quarterly net income scaled by lagged total assets over eight quarters up to the fourth quarter before the acquisition announcement.

Hypothesis Testing

Test of Hypothesis 1

Hypothesis 1 predicts a positive association between acquirers' pre-acquisition abnormal accruals and disclosure costs. This hypothesis is tested by estimating the following OLS model:

$$Cum\_AA_i = \theta_1 + \theta_2 Disc\_Cost_i + \theta_3 Size_i + \theta_4 Pool_i + \theta_5 Leverage_i + \theta_6 Litigation_i + \theta_7 Same\_Industry_i + \theta_8 Private\_Target_i + \theta_9 Post\_SOX_i + \varepsilon_i \quad (2)$$

Cum_AA_i is the cumulative performance adjusted abnormal accruals of acquirer i over the three quarters immediately before the acquisition announcement. The accumulation of abnormal accruals over those three quarters is motivated by the evidence in this paper and in prior studies that acquirers appear to inflate earnings over the three quarters immediately before the acquisition announcement (Erickson and Wang 1999; Baik et al. 2007). $Disc\_Cost_i$ is one of the five proxies: acquirer's industry concentration, price-cost margin, market-to-book ratio, number of business segments, and earnings volatility. Hypothesis 1 predicts that $\theta_2 < 0$ when price-cost margin is used as a proxy for

disclosure costs and $\theta_2 > 0$ when the other four measures are used as a proxy for disclosure costs.

I control for several factors that potentially influence acquiring firms' propensity to manage earnings other than the acquisition itself. $Size_i$ is the natural logarithm of the market value of acquirer i's equity at the end of the fourth fiscal quarter prior to the acquisition announcement. Firm size is included to control for acquirers' incentives to manage earnings downward to reduce political costs (Watts and Zimmerman 1986). $Pool_i$ is a dummy variable equal to 1 if acquirer i uses the pooling-of-interest method in accounting for the acquisition, 0 otherwise. Firms that choose to use the pooling-of-interest method are usually more concerned about reporting favorable earnings than firms that use the purchase method (Aboody, Kasznik, and Williams 2000; Ayers, Lefanowicz, and Robinson 2002). Therefore, I expect acquirers that use the pooling-of-interest method to have higher abnormal accruals than acquirers that use the purchase method. $Leverage_i$ equals long-term debt divided by total assets of acquirer i at the end of the fourth fiscal quarter prior to the acquisition announcement. I control for leverage since firms with high leverage are likely concerned about debt covenant violation, which might induce earnings management. $Litigation_i$ is a dummy variable equal to 1 if acquirer i belongs to a high-litigation risk industry, 0 otherwise. High-litigation risk industries are defined based on Francis, Philbrick, and Schipper (1994) and include biotechnology (SIC codes 2833-2836 and 8731-8734), computers (SIC codes 3570-3577 and 7370-7374), electronics (SIC codes 3600-3674), and retailing (SIC codes 5200-5961). $Same\_Industry_i$ is a dummy variable equal to 1 if both the acquirer and its target are in the same industry, 0 otherwise (industries are defined based on the two-digit SIC assigned by SDC

Platinum). $Private\_Target_i$ is a dummy variable equal to 1 if the target is a private firm, 0 otherwise. I include $Same\_Industry_i$ and $Private\_Target_i$ because Baik et al. (2007) find that stock-for-stock acquirers are more likely to manage earnings when the target is a private firm, or when the acquirer and the target are in different industries. $Post\_SOX_i$ is a dummy variable equal to 1 for fiscal quarters ending after 2001, 0 otherwise. I control for $Post\_SOX_i$ since recent studies find an increasing trend of firms to use real earnings management as a substitute to accruals management after the passage of the Sarbanes-Oxley Act 2002 (Cohen et al. 2008; Graham et al. 2005; Jiang et al. 2008).

Test of Hypothesis 2

Hypothesis 2 predicts that the association between pre-acquisition abnormal accruals and abnormal stock returns around the acquisition announcement is negative for stock-for-stock acquirers with high disclosure costs and non-negative for stock-for-stock acquirers with low disclosure costs. I test this hypothesis by estimating the following OLS regression:

$$CAR_i = \varphi_1 + \varphi_2 Cum\_AA_i + \varphi_3 High\_Cost_i * Cum\_AA_i + \varphi_4 High\_Cost_i + \varphi_5 Pool_i + \varphi_6 Private\_Target_i + \varphi_7 Same\_Industry_i + \varphi_8 MV_i + \varphi_9 Rev\_Size_i + \eta_i \quad (3)$$

CAR_i is the cumulative abnormal return to the stock of acquirer i over trading days [-1, +1] ($CAR_{[-1,+1]}$) or trading days [-21, +1] ($CAR_{[-21,+1]}$). Trading days are defined relative to the acquisition announcement date (day 0). Abnormal returns are estimated using a market model with betas estimated using daily returns from the 22nd trading day through the 274th trading day prior to the acquisition announcement.[20] Acquirers with less than 60 trading days available to estimate the market model are excluded. The

[20] The specific model is: $R_{it} = \alpha_i + \beta_i * R_{mt} + \varepsilon_{it}$. R_{it} is the return for firm i for day t. R_{mt} is the market return for day t.

market return is proxied for by the CRSP value weighted index. While $CAR_{[-1, +1]}$ is typically used to measure the market's reaction to news, Louis (2004) notes that information about mergers and acquisitions might be leaked to the market well before the official announcement due to lengthy negotiation processes. Therefore, following Louis (2004), I also use $CAR_{[-21,+1]}$ as a proxy for the market reaction in testing hypothesis 2. Cum_AA_i is the cumulative performance adjusted abnormal accruals of acquirer i over the three quarters immediately before the acquisition announcement. $High\_Cost_i$ equals either $High\_IndCon_i$, Low_Margin_i, $High\_MB_i$, $High\_Volatility_i$, or $High\_Segment_i$. $High\_IndCon_i$ is a dummy variable equal to 1 if acquirer i's industry concentration is above the median industry concentration of all sample acquirers, 0 otherwise. Low_Margin_i is a dummy variable equal to 1 if acquirer i's price-cost margin is smaller than or equal to the median price-cost margin of all sample acquirers, 0 otherwise. $High\_MB_i$ is a dummy variable equal to 1 if acquirer i's market-to-book ratio is above the median market-to-book ratio of all sample acquirers, 0 otherwise. $High\_Volatility_i$ is a dummy variable equal to 1 if acquirer i's earnings volatility is above the median earnings volatility of all sample acquirers, 0 otherwise. $High\_Segment_i$ is a dummy variable equal to 1 if acquirer i has at least two business segments, 0 otherwise. Hypothesis 2 predicts that $\varphi_2 \geq 0$, $\varphi_3 < 0$, and $\varphi_2+\varphi_3 < 0$.

Several control variables are included in model (3) based on findings in prior studies. $Pool_i$ is a dummy variable equal to 1 if acquirer i uses the pooling-of-interest method in accounting for the acquisition, 0 otherwise. Martínez-Jerez (2008) finds that the market reacts more negatively to acquisitions in which the acquirer uses the pooling-of-interest method relative to acquisitions in which the acquirer uses the purchase

method. $Private\_Target_i$ is a dummy variable equal to 1 if the target is a private firm, 0 otherwise. Prior research documents that the market reacts more favorably to acquisitions of private targets relative to acquisitions of public targets (Moeller, Schlingemann, and Stulz 2004; Betton, Eckbo, and Thorburn 2008). $Same\_Industry_i$ is a dummy variable equal to 1 if both the acquirer and its target are in the same industry, 0 otherwise (industries are defined in terms of the two-digit SIC assigned by SDC Platinum). This variable is included since prior research finds a negative association between the extent of diversification and firm value (Lang and Stulz 1994; Berger and Ofek 1995; Comment and Jarrell 1995; John and Ofek 1995). In addition, Scanlon, Trifts, and Pettway (1989) find that acquirers' announcement returns are lower when the acquirer and its target are in unrelated industries relative to when the acquirer and its target are in related industries. MV_i is the natural logarithm of the market value of acquirer i's equity at the end of the fiscal quarter immediately before the acquisition announcement. Empirically, large acquirers earn lower announcement returns than small acquirers (Moeller et al. 2004; Betton et al. 2008). Rev_Size_i is the target relative size, measured as the natural logarithm of the ratio of the deal value reported by SDC Platinum and the market value of acquirer i's equity at the end of the fiscal quarter immediately before the acquisition announcement. Prior studies find inconsistent results regarding the association between targets' relative size and acquirers' announcement returns. For example, the association is negative in Scanlon et al. (1989) and positive in Moeller et al. (2004).[21]

[21] I do not control for deal characteristics such as tender offer versus merger or friendly versus hostile because the majority of stock-for-stock acquisitions are friendly deals and in the form of a merger. In my specific sample, only two deals are hostile and three deals are tender offer.

Descriptive Statistics

Table 2 presents descriptive statistics for selected acquirer and deal characteristics of the primary sample used in this paper. Based on the median market value of equity and total assets, acquirers in my sample are smaller than acquirers in related studies (Erickson and Wang 1999; Louis 2004; Baik et al. 2007). The average market-to-book ratio of my sample acquirers is higher than the average Tobin's Q of sample acquirers in Baik et al. (2007). Compared to targets in Baik et al. (2007), targets in my sample are smaller (as reflected by *Deal Value*), although targets in my sample tend to be larger relative to acquirers (as reflected by *Relative Size*). About 59% of the deals are between firms in the same industry, compared to 71% in Baik et al. (2007). Table 2 also shows some statistics for all stock-for-stock deals from the SDC Platinum database with available data for the selected statistics. Compared to this sample, my sample has similar characteristics, except that acquirers in my sample have higher total assets and lower market-to-book ratio. This alleviates the concern about the generalizability of the results to some extent.

Consistent with stock-for-stock acquirers inflating earnings in quarters leading to the acquisition announcement, both the mean and median cumulative abnormal accruals (*Cum_AA*) are positive and statistically significant (p-value<0.001). Turning to other statistics, target shareholders earn an average premium of around 38%. Note that *Premium* is the cumulative abnormal return to the target's stock from the 42nd trading day before through the 126th trading day after the acquisition announcement (or through delisting, whichever comes first), so the premium incorporates the market discount for earnings management when the acquisition is announced. Consistent with prior research

(Moeller et al. 2004; Betton et al. 2008; Louis 2004; and Martínez-Jerez 2008), the market appears to react positively to acquisitions of private targets (mean and median $CAR_{[-1,+1]}$ are positive and statistically significant) and react negatively to acquisitions of public targets (mean and median $CAR_{[-1,+1]}$ are negative and statistically significant).

Table 3 presents Pearson correlation coefficients among key variables in this study. As expected, acquirers' pre-acquisition abnormal accruals (*Cum_AA*) is negatively correlated with acquirers' price-cost margin (*PC_Margin*) and size (*Size*), and positively correlated with acquirers' use of pooling-of-interest accounting (*Pool*), industry concentration (*IndCon*), and earnings volatility (*NI_Volatility*). While *Cum_AA* is negatively associated with litigation risk (*Litigation*) and positively associated with market-to-book ratio (*MB*) and leverage (*Leverage*) as predicted, the correlation coefficients are not statistically significant at the 10-percent level. $CAR_{[-1,+1]}$ is negatively correlated with *Cum_AA*, but the correlation is not statistically significant at the 10-percent level. This is consistent with Louis' (2004) argument that because of the leakage of information prior to the official acquisition announcement, one might not be able to find a significantly negative association between acquirers' pre-acquisition abnormal accruals and $CAR_{[-1,+1]}$. Finally, there is no statistically significant association between acquirers' pre-acquisition abnormal accruals and acquisition premium.

Table 2: Descriptive Statistics of Selected Acquirer and Deal Characteristics

	Sample Deals			All SDC Deals		
Variable	Obs	Mean	Median	Obs	Mean	Median
MVE ($mil)	890	8,472.44	351.47	2,231	6,524.93	432.94
TA ($mil)	890	1,791.64	168.20	2,260	1,485.33	152.86
MB	887	4.15	3.12	1,956	5.39	3.65
Cum_AA	890	1.94***	0.73***	-	-	-
IndCon	884	0.32	0.33	-	-	-
PC_Margin	760	0.03	0.04	-	-	-
NI_Volatility	875	0.05	0.02	-	-	-
Segment	890	2.75	1.00	-	-	-
Debt/Asset	890	0.13	0.04	2,226	0.19	0.03
Pool	890	0.41	0.00	2,269	0.45	0.00
Litigation	890	0.52	1.00	-	-	-
Same_Industry	890	0.59	1.00	2,269	0.59	1.00
Private_Target	890	0.57	1.00	2,269	0.63	1.00
Deal Value ($mil)	890	120.26	36.74	2,269	116.85	37.72
Relative Size	890	0.62	0.13	1,962	0.69	0.12
Premium (%)	246	0.38	0.37	-	-	-
$CAR_{[-1,+1]}$	803	0.01	0.00	-	-	-
- Private Target (%)	*458*	*2.60***	*0.58***	-	-	-
- Public Target (%)	*345*	*-1.03***	*-1.42***	-	-	-

* significant at 10%; ** significant at 5%; *** significant at 1%. Variables are measured at the end of the quarter immediately before the acquisition announcement, unless otherwise stated. *MVE* is the acquirer's market value of equity. *TA* is the acquirer's total assets. *MB* is the acquirer's market value over book value of equity at the end of the fourth quarter before the acquisition announcement. *Cum_AA* is the acquirer's cumulative abnormal accruals over the three quarters immediately before the acquisition announcement (expressed as percentage of lagged total assets). *IndCon* is the acquirer's industry concentration measured for the year immediately before the acquisition announcement. *PC_Margin* is the average price-cost margin of the acquirer over the three years before the acquisition announcement, adjusted for the median price-cost margin of the acquirer's industry over the same period. *NI_Volatility* is the standard deviation of the acquirer's net income scaled by lagged total assets, calculated over eight quarters up to the fourth quarter before the acquisition announcement. *Segment* is the acquirer's number of business segments. *Debt/Asset* is the acquirer's long-term debt over total assets. *Pool* is a dummy variable equal to 1 if the acquirer uses the pooling-of-interest accounting method, 0 otherwise. *Litigation* is a dummy variable equal to 1 for acquirers that belong to high-litigation risk industries, 0 otherwise. High-litigation risk industries include biotechnology (SIC codes 2833-2836 and 8731-8734), computers (SIC codes 3570-3577 and 7370-7374), electronics (SIC codes 3600-3674), and retailing (SIC codes 5200-5961). *Same_Industry* is a dummy variable equal to 1 if both the acquirer and its target are in the same industry, 0 otherwise. *Private_Target* is a dummy variable equal to 1 if the target is a private firm, 0 otherwise. *Deal Value* is the deal value as reported by SDC Platinum. *Relative Size* is the ratio of the deal value over the market value of the acquirer's equity. *Premium* is the cumulative abnormal return to the target's stock from the 42nd trading day before through the 126th trading day after the acquisition announcement or through delisting, whichever comes first. $CAR_{[-1,+1]}$ is the acquirer's three-day cumulative abnormal return centered on the acquisition announcement date. Abnormal returns are estimated using a market model.

Table 3: Pearson Correlation Coefficients

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1)	Cum_AA	1.00														
(2)	IndCon	**0.07**	1.00													
(3)	PC_Margin	**-0.12**	-0.02	1.00												
(4)	MB	0.01	-0.01	**0.06**	1.00											
(5)	NI_Volatility	**0.10**	-0.05	**-0.40**	0.03	1.00										
(6)	Segment	-0.04	-0.03	-0.04	0.00	0.01	1.00									
(7)	Size	**-0.15**	**-0.14**	**0.49**	0.05	**-0.25**	**0.16**	1.00								
(8)	Pool	**0.11**	**-0.07**	**0.24**	-0.03	**-0.15**	**-0.24**	**0.11**	1.00							
(9)	Leverage	0.00	0.01	**-0.10**	-0.04	-0.03	**0.13**	**0.06**	**-0.15**	1.00						
(10)	Litigation	-0.04	**-0.20**	0.03	0.00	**0.15**	0.00	**0.10**	0.04	**-0.28**	1.00					
(11)	Same_Industry	-0.02	**-0.13**	-0.04	-0.05	0.04	**-0.10**	-0.02	**0.08**	0.05	0.01	1.00				
(12)	Private_Target	**0.06**	-0.01	**0.06**	0.00	**0.08**	**-0.08**	**-0.11**	**0.11**	**-0.13**	**0.08**	-0.05	1.00			
(13)	Rev_Size	**0.08**	**0.10**	**-0.33**	-0.04	**0.09**	-0.05	**-0.66**	0.01	0.04	**-0.12**	**0.08**	**-0.20**	1.00		
(14)	$CAR_{[-1,+1]}$	-0.03	0.05	**-0.07**	-0.01	0.02	-0.04	**-0.14**	-0.03	-0.02	-0.05	-0.01	**0.18**	**0.11**	1.00	
(15)	Premium	-0.08	-0.01	-0.10	0.02	0.04	-0.06	0.06	**-0.15**	-0.10	0.06	0.06	.	**-0.19**	**0.13**	1.00

Bold text indicates statistical significance at the 10-percent level or lower. *Size* is the natural logarithm of the market value of the acquirer's equity at the end of the fourth quarter prior to the acquisition announcement. *Leverage* is the acquirer's long-term debt divided by total assets at the end of the fourth quarter prior to the acquisition announcement. *Rev_Size* is the target relative size, measured as the natural logarithm of the ratio of the deal value and the market value of the acquirer's equity at the end of the fiscal quarter immediately prior to the acquisition announcement. All other variables are defined as in Table 2.

CHAPTER V

RESULTS

Preliminary Evidence of Earnings Management by Stock-for-Stock Acquirers

Figure 1 plots mean and median quarterly abnormal accruals from eight quarters before through two quarters after the acquisition announcement for 1,388 stock-for-stock acquirers with available abnormal accruals data. The graph shows that there is a "jump" in abnormal accruals over the three quarters immediately before the acquisition announcement. In untabulated tests, I find that both mean and median abnormal accruals are statistically significant at conventional levels for each of the three quarters immediately before the acquisition announcement (p-value is smaller than 5% for quarter -3 and smaller than 1% for quarter -2 and -1). Thus, consistent with prior studies, I find that, on average, stock-for-stock acquirers inflate earnings as early as three quarters prior to the acquisition announcement (Erickson and Wang 1999; Baik et al. 2007).

Figures 2 through 6 plots median abnormal accruals of acquirers with high- and low-disclosure costs as proxied for by industry concentration, price-cost margin, market-to-book ratio, earnings volatility, and number of business segments, respectively. It is clear from figures 2 and 3 that there is a larger "jump" in abnormal accruals over the three quarters immediately before the acquisition announcement for acquirers with high disclosure costs relative to acquirers with low disclosure costs (recall that high industry concentration implies high disclosure costs while high price-cost margin implies low disclosure costs). Nonparametric tests suggest that differences in median abnormal accruals between acquirers with high- and low-disclosure costs are statistically significant at the 5-percent level or lower for quarters -3 and -2. In figure 4, there is some evidence

that acquirers with high market-to-book ratio have higher abnormal accruals than acquirers with low market-to-book ratio over the three quarters immediately before the acquisition announcement. However, the difference in abnormal accruals is only statistically significant at the 5-percent level for quarter -3. Overall, this evidence suggests that there is a positive association between acquirers' proprietary disclosure costs and abnormal accruals over the three quarters immediately before the acquisition announcement, consistent with my first hypothesis.

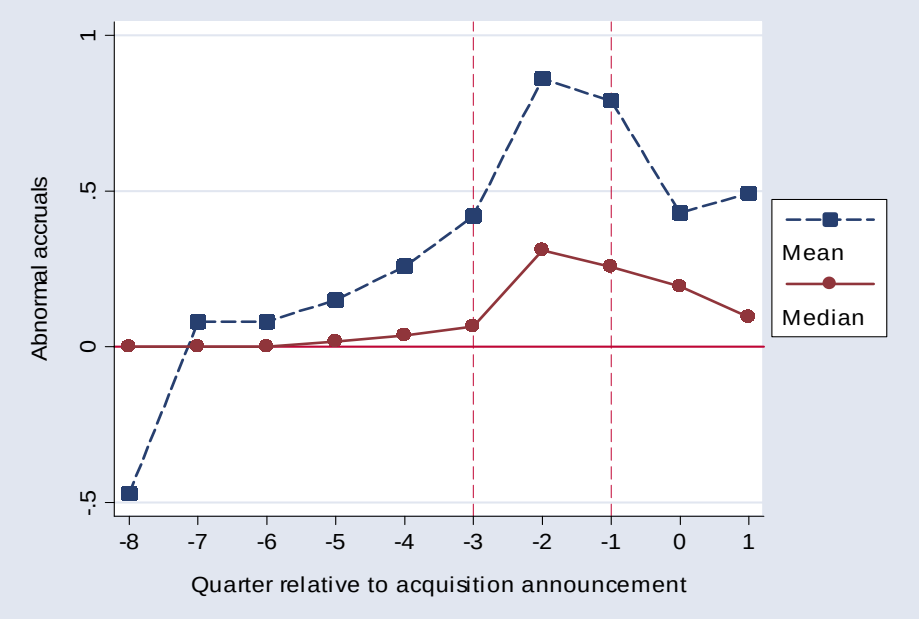

Figure 1: Abnormal accruals of stock-for-stock acquirers. Quarter -1 is the latest quarter with the earnings announcement date preceding the acquisition announcement date. Quarter –k is the k^{th} quarter preceding the acquisition announcement date. Quarter 0 (1) is the first (second) quarter with the earnings announcement date after the acquisition announcement date. Abnormal accruals are estimated using the method in Kothari et al. (2005). The sample includes 1,388 stock-for-stock deals with data available.

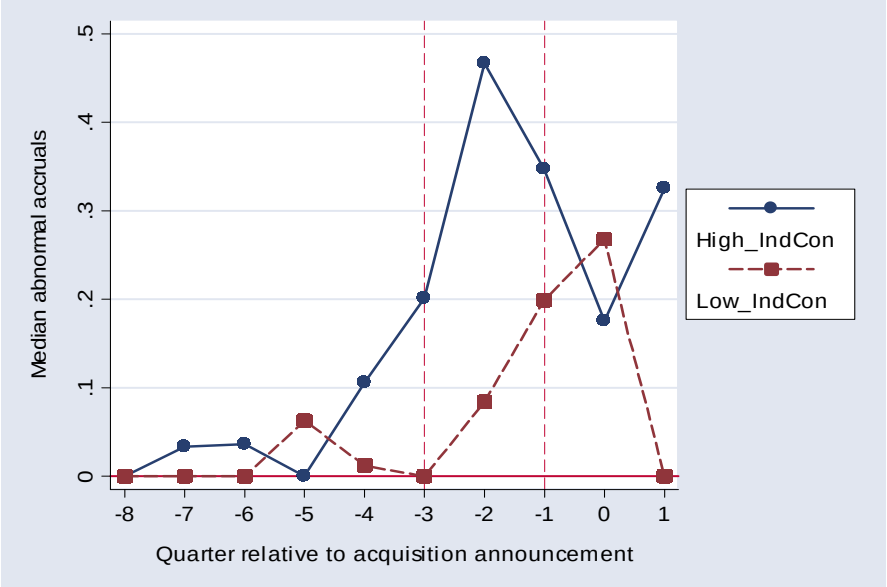

Figure 2: Abnormal accruals of stock-for-stock acquirers with high industry concentration (High_IndCon) and low industry concentration (Low_IndCon). High_IndCon and Low_Indcon are defined relative to the median industry concentration of sample acquirers. Quarter orders are defined as in Figure 1. The sample includes 1,388 stock-for-stock deals with data available.

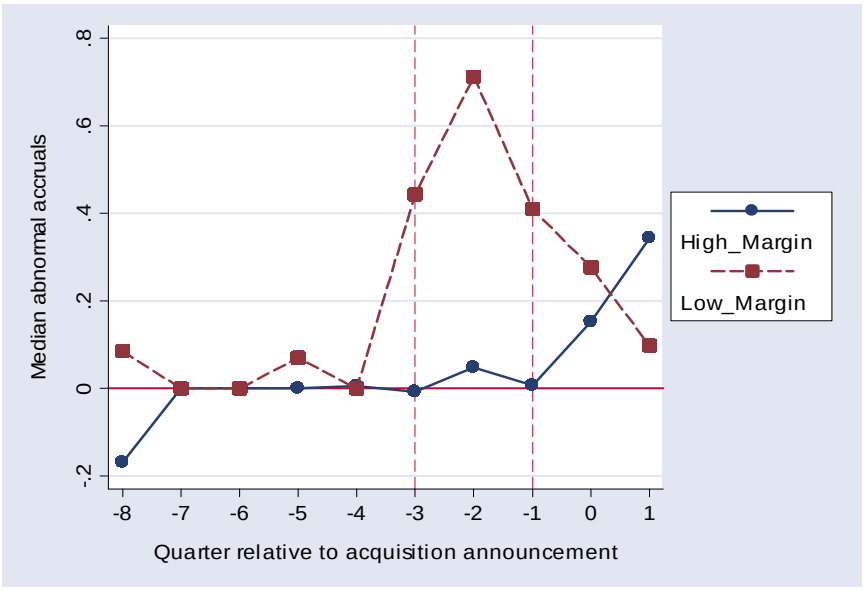

Figure 3: Abnormal accruals of stock-for-stock acquirers with high price-cost margin (High_Margin) and low price-cost margin (Low_Margin). High_Margin and Low_Margin are defined relative to the median price-cost margin of sample acquirers. Quarter orders are defined as in Figure 1. The sample includes 1,109 stock-for-stock deals with data available.

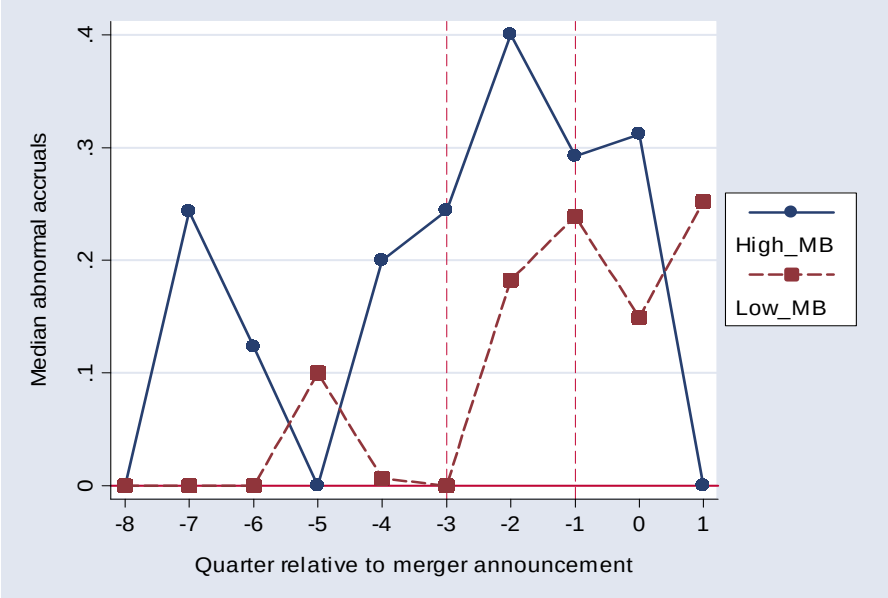

Figure 4: Abnormal accruals of stock-for-stock acquirers with high market-to-book (High_MB) and low market-to-book (Low_MB). High_MB and Low_MB are defined relative to the median market-to-book ratio of sample acquirers. Quarter orders are defined as in Figure 1. The sample includes 1,385 stock-for-stock deals with data available.

In figure 5, acquirers with high earnings volatility (which have high disclosure costs) have higher abnormal accruals than acquirers with low earnings volatility over the three quarters immediately before the acquisition announcement. However, the difference in abnormal accruals is only statistically significant at the 10-percent level for quarter -3. Finally, figure 6 shows that there is no significant difference in abnormal accruals between acquirers with multiple business segments (Diversified) and acquirers with a single business segment (Undiversified). Thus, there is no evidence that firms that have multiple business segments are more likely to manage earnings before the acquisition than firms that have a single business segment.

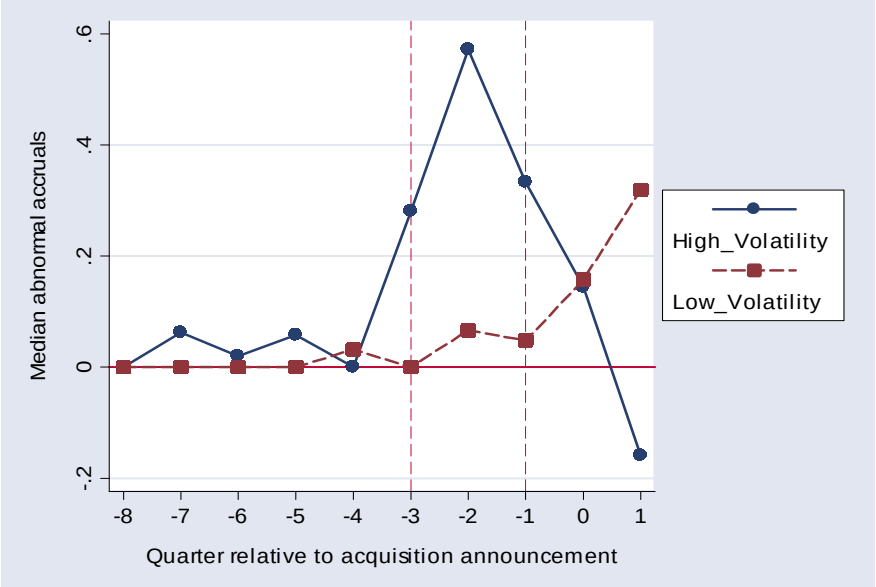

Figure 5: Abnormal accruals of stock-for-stock acquirers with high earnings volatility (High_Volatility) and low earnings volatility (Low_Volatility). High_Volatility and Low_Volatility are defined relative to the median earnings volatility of sample acquirers. Quarter orders are defined as in Figure 1. The sample includes 1,180 stock-for-stock deals with data available.

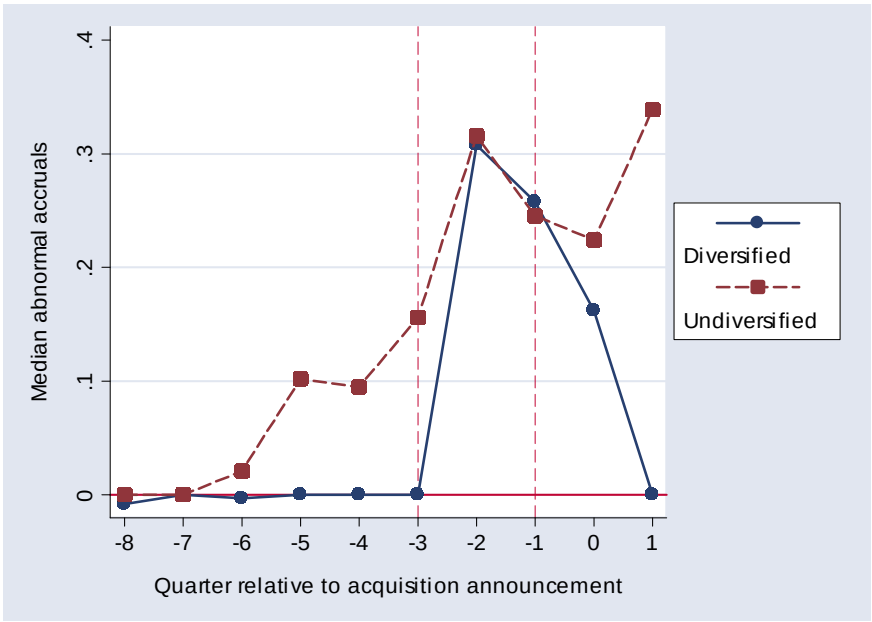

Figure 6: Abnormal accruals of stock-for-stock acquirers with multiple business segments (Diversified) and a single business segment (Undiversified). Quarter orders are defined as in Figure 1. The sample includes 1,384 stock-for-stock deals with data available.

Acquirers' Disclosure Costs and Pre-acquisition Abnormal Accruals

Table 4 presents regression results for model (2) when $Disc\_Cost_i$ is either industry concentration, price-cost margin, or market-to-book ratio (three proxies for proprietary disclosure costs). Columns (1), (3) and (5) show results when continuous measures of disclosure costs ($IndCon_i$, PC_Margin_i, and MB_i) are used, while columns (2), (4) and (6) show results when binary measures of disclosure costs ($High\_IndCon_i$, $High\_Margin_i$, and $High\_MB_i$) are used. Consistent with hypothesis 1, the coefficient on $Disc\_Cost_i$ is negative and statistically significant at the 5-percent level or lower when price-cost margin is used as a proxy for disclosure costs, and the coefficient on $Disc\_Cost_i$ is positive and statistically significant at the 10-percent level or lower when industry concentration and market-to-book ratio are used as proxies of disclosure costs. The result does not depend on whether continuous or binary measures of disclosure costs are used. The difference in cumulative abnormal accruals between acquirers with high disclosure costs and acquirers with low disclosure costs is 1.01% of lagged total assets when $High\_IndCon_i$ is used, 2.15% of lagged total assets when $High\_Margin_i$ is used, and 2.79% of lagged total assets when $High\_MB_i$ is used as a proxy for disclosure costs. Overall, the results in Table 4 are consistent with hypothesis 1, which predicts a positive association between stock-for-stock acquirers' proprietary disclosure costs and pre-acquisition abnormal accruals.

Results for control variables are generally as predicted. Larger firms tend to have lower abnormal accruals, consistent with the political cost hypothesis (Watts and Zimmerman 1986). Firms that use the pooling-of-interest method appear to inflate earnings more than firms that use the purchase method, presumably because the former

have stronger incentives to report favorable financial performance (Aboody et al. 2000; Ayers et al. 2002). Consistent with the concern about debt covenant violation, firms with higher leverage tend to have higher abnormal accruals, although the coefficient is not statistically significant at conventional levels. Inconsistent with prior studies (Graham et al. 2005; Cohen et al. 2008; Jiang et al. 2008), I do not find evidence that acquirers' pre-acquisition abnormal accruals are lower after the passage of the Sarbanes-Oxley Act 2002. Other control variables are statistically insignificant at conventional levels.

Table 5 presents regression results for model (2) when $Disc\_Cost_i$ is either acquirers' earnings volatility (*NI_Volatility*) or number of business segments (*Segment*), two proxies for the difficulty faced by acquirers in providing sufficient information to signal the absence of earnings management (i.e., disclosure complexity). Although the coefficient on $Disc\_Cost_i$ is positive when earnings volatility is used, the coefficient is not statistically significant at conventional levels. When the number of business segments is used, the coefficient is also not statistically distinguishable from zero. Thus, I do not find evidence that acquirers with higher disclosure complexity are more likely to manage earnings before the acquisition announcement.

Table 4: Acquirers' Abnormal Accruals and Proprietary Disclosure Costs

$$Cum\_AA_i = \theta_1 + \theta_2 Disc\_Cost_i + \theta_3 Size_i + \theta_4 Pool_i + \theta_5 Leverage_i + \theta_6 Litigation_i + \theta_7 Same\_Industry_i + \theta_8 Private\_Target_i + \theta_9 Post\_SOX_i + \varepsilon_i$$

	Industry Concentration		Price-Cost Margin		Market-to-Book Ratio	
	Continuous	Binary	Continuous	Binary	Continuous	Binary
Disc_Cost	4.325*	1.009*	-4.283**	-2.150***	0.209**	2.792***
	(1.72)	(1.67)	(2.18)	(3.10)	(2.42)	(4.04)
Size	-0.599***	-0.598***	-0.388**	-0.372**	-0.769***	-0.827***
	(4.19)	(4.15)	(2.41)	(2.41)	(5.00)	(5.56)
Pool	2.757***	2.673***	2.921***	2.900***	2.611***	2.430***
	(4.25)	(4.14)	(4.11)	(4.14)	(4.11)	(3.86)
Leverage	1.608	1.508	0.586	0.547	1.651	2.252
	(0.85)	(0.80)	(0.31)	(0.29)	(0.81)	(1.11)
Litigation	-0.207	-0.251	-0.572	-0.596	-0.606	-0.749
	(0.31)	(0.38)	(0.84)	(0.87)	(0.92)	(1.15)
Same_Industry	-0.68	-0.69	-0.556	-0.563	-0.835	-0.914
	(1.07)	(1.08)	(0.81)	(0.82)	(1.37)	(1.51)
Private_Target	0.62	0.574	0.962	0.811	0.148	0.071
	(1.04)	(0.97)	(1.47)	(1.25)	(0.25)	(0.12)
Post_SOX	1.155	1.182	1.172	1.214	1.36	1.496*
	(1.27)	(1.30)	(1.14)	(1.20)	(1.59)	(1.77)
Constant	2.503	3.492***	2.915**	3.900***	4.506***	4.534***
	(1.55)	(2.61)	(2.28)	(3.15)	(3.78)	(3.82)
Observations	884	884	760	760	866	866
R-squared	0.05	0.05	0.05	0.05	0.05	0.07

Robust t statistics in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. $Disc\_Cost_i$ is proxied for by $IndCon_i$, PC_Margin_i, and MB_i (continuous measures), or $High\_IndCon_i$, $High\_Margin_i$, and $High\_MB_i$ (binary measures). See Appendix B for the definition of these proxies and other variables in the model. Cum_AA_i, $IndCon_i$, PC_Margin_i are truncated at the 0.5th and 99.5th percentiles. MB_i is truncated at 0 and the 99.5th percentile.

Table 5: Acquirers' Abnormal Accruals and Disclosure Complexity

$$Cum\_AA_i = \theta_1 + \theta_2 Disc\_Cost_i + \theta_3 Size_i + \theta_4 Pool_i + \theta_5 Leverage_i + \theta_6 Litigation_i + \theta_7 Same\_Industry_i + \theta_8 Private\_Target_i + \theta_9 Post\_SOX_i + \varepsilon_i$$

	NI_Volatility		Segment	
	Continuous	Binary	Continuous	Binary
Disc_Cost	8.966	0.292	-0.007	-0.426
	(1.58)	(0.49)	(0.07)	(0.61)
Size	-0.536***	-0.599***	-0.626***	-0.611***
	(3.80)	(4.39)	(4.41)	(4.26)
Pool	3.110***	2.941***	2.779***	2.695***
	(4.56)	(4.40)	(4.19)	(4.06)
Leverage	1.454	1.538	1.3	1.383
	(0.79)	(0.83)	(0.66)	(0.71)
Litigation	-0.774	-0.575	-0.449	-0.466
	(1.12)	(0.84)	(0.67)	(0.69)
Same_Industry	-0.571	-0.51	-0.641	-0.662
	(0.91)	(0.80)	(0.99)	(1.03)
Private_Target	0.561	0.65	0.542	0.536
	(0.91)	(1.07)	(0.89)	(0.88)
Post_SOX	1.589*	1.632*	1.272	1.462
	(1.81)	(1.86)	(1.32)	(1.48)
Constant	3.240***	3.774***	4.284***	4.401***
	(2.61)	(3.09)	(3.48)	(3.58)
Observations	875	875	890	890
R-squared	0.05	0.05	0.05	0.05

Robust t statistics in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. Variable definitions: $Disc\_Cost_i$ is proxied for by $NI\_Volatility_i$ and $Segment_i$ (continuous measures), or $High\_Volitility_i$ and $High\_Segment_i$ (binary measures). See Appendix B for the definition of these proxies and other variables in the model. Cum_AA_i and $NI\_Volatility_i$ are truncated at the 0.5^{th} and 99.5^{th} percentiles.

Acquirers' Pre-acquisition Abnormal Accruals and Stock Returns Around Acquisition Announcements

Table 6 presents regression results for model (3) when $Disc\_Cost_i$ is either industry concentration ($High\_IndCon_i$), price-cost margin (Low_Margin_i), or market-to-book ratio ($High\_MB_i$). Consistent with hypothesis 2, the sum of the coefficients on

Cum_AA_i and $High\_Cost_i$*Cum_AA_i (i.e., $\varphi_2+\varphi_3$) is negative and statistically significant at the 10-percent level or lower for two measures of cumulative abnormal return ($CAR_{[-1,+1]}$ and $CAR_{[-21,+1]}$) and three measures of proprietary disclosure costs ($High\_IndCon_i$, Low_Margin_i, and $High\_MB_i$). This result suggests that upon the acquisition announcement, the market discounts pre-acquisition abnormal accruals of acquirers with high proprietary disclosure costs. Although the coefficient on the interaction term between $High\_Cost_i$ and Cum_AA_i (φ_3) is negative as predicted by hypothesis 2, the coefficient is in general not statistically significant at conventional levels. Finally, the coefficient on Cum_AA_i (φ_2) is statistically indistinguishable from zero at conventional levels for both measures of abnormal returns. Thus, the market does not appear to discount pre-acquisition abnormal accruals of stock-for-stock acquirers with low proprietary disclosure costs, also consistent with hypothesis 2. Overall, the results in Table 6 are consistent with hypothesis 2, which predicts that the association between pre-acquisition abnormal accruals and abnormal stock returns around the acquisition announcement is negative for stock-for-stock acquirers with high disclosure costs but not for stock-for-stock acquirers with low disclosure costs.

With regard to the control variables, the coefficient on $Pool_i$ is negative and in general statistically significant at conventional levels, consistent with the finding in Martínez-Jerez (2008) that the market reacts less favorably to acquisitions in which the acquirer uses the pooling-of-interest accounting method. Consistent with prior studies (Moeller et al. 2004; Betton et al. 2008), acquirers earn higher abnormal announcement returns when the target is a private firm (the coefficient on $Private\_Target_i$ is positive) or

when the target is larger relative to the acquirer (the coefficient on Rev_Size_i is positive). Other control variables are not statistically significant at conventional levels.

Table 7 presents regression results for model (3) when $Disc\_Cost_i$ is either earnings volatility ($High\_Volatility_i$) or number of business segments ($High\_Segment_i$). Consistent with Table 5, but inconsistent with hypothesis 2, the sum of the coefficients on Cum_AA_i and $High\_Cost_i*Cum\_AA_i$ (i.e., $\varphi_2+\varphi_3$) is in general not statistically significant at conventional levels. The coefficient on the interaction term (φ_3) is also not statistically significant at conventional levels. Thus, the market does not appear to react differently to pre-acquisition abnormal accruals of acquirers with different levels of disclosure complexity.

Together, the results in Table 4 and Table 6 are consistent with acquirers with higher proprietary costs have higher pre-acquisition abnormal accruals. When the acquisition is announced, the market discounts pre-acquisition abnormal accruals of acquirers with high proprietary disclosure costs but does not discount abnormal accruals of acquirers with low proprietary disclosure costs. I interpret these results as suggesting that acquirers with high disclosure costs are more likely to manage earnings before the acquisition than acquirers with low disclosure costs.

Table 6: Acquirers' Abnormal Accruals and Stock Returns Around Acquisition Announcements Conditional on Proprietary Disclosure Costs

$$CAR_i = \varphi_1 + \varphi_2 Cum\_AA_i + \varphi_3 High\_Cost_i * Cum\_AA_i + \varphi_4 High\_Cost_i + \varphi_5 Pool_i + \varphi_6 Private\_Target_i + \varphi_7 Same\_Industry_i + \varphi_8 MV_i + \varphi_9 Rev\_Size_i + \eta_i$$

	High_IndCon		Low_Margin		High_MB	
	$CAR_{[-1,+1]}$	$CAR_{[-21,+1]}$	$CAR_{[-1,+1]}$	$CAR_{[-21,+1]}$	$CAR_{[-1,+1]}$	$CAR_{[-21,+1]}$
Cum_AA	-0.036	-0.14	0.012	-0.115	0.034	-0.191
	(0.57)	(1.27)	(0.22)	(0.94)	(0.48)	(1.40)
High_Cost*Cum_AA	-0.089	-0.308*	-0.115	-0.256	-0.121	-0.078
	(1.04)	(1.94)	(1.41)	(1.54)	(1.46)	(0.47)
High_Cost	0.013*	0.004	0.005	0.016	-0.005	0.006
	(1.70)	(0.31)	(0.52)	(0.98)	(0.71)	(0.35)
Pool	-0.011	-0.021	-0.011	-0.033**	-0.012*	-0.026*
	(1.55)	(1.52)	(1.51)	(2.17)	(1.66)	(1.84)
Private_Target	0.047***	0.071***	0.051***	0.076***	0.045***	0.068***
	(5.89)	(4.73)	(6.03)	(4.62)	(5.47)	(4.40)
Same_Industry	-0.002	-0.005	-0.002	0.001	-0.003	0.001
	(0.31)	(0.33)	(0.32)	(0.09)	(0.47)	(0.09)
MV	-0.002	0	-0.001	0.002	-0.001	0
	(0.68)	(0.04)	(0.47)	(0.52)	(0.41)	(0.05)
Rev_Size	0.009***	0.027***	0.011***	0.029***	0.009**	0.027***
	(2.73)	(4.90)	(3.22)	(4.92)	(2.58)	(4.68)
Constant	0.015	0.062**	0.022	0.050*	0.022	0.057**
	(0.95)	(2.17)	(1.25)	(1.66)	(1.57)	(2.19)
$\varphi_2 + \varphi_3$	***-0.125*****	***-0.448******	***-0.103****	***-0.371******	***-0.087****	***-0.269******
	(2.05)	***(3.73)***	***(1.65)***	***(3.15)***	***(1.81)***	***(2.60)***
Observations	797	797	698	698	784	784
R-squared	0.08	0.09	0.09	0.11	0.07	0.08

Robust t statistics in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. CAR_i is either $CAR_{[-1,+1]}$ or $CAR_{[-21,+1]}$. $High\_Cost_i$ equals either $High\_IndCon_i$, Low_Margin_i, or $High\_MB_i$. See Appendix B for the definition of these proxies and other variables in this model. Cum_AA_i and CAR_i are truncated at the 0.5^{th} and 99.5^{th} percentiles.

Table 7: Acquirers' Abnormal Accruals and Stock Returns Around Acquisition Announcements Conditional on Disclosure Complexity

$$CAR_i = \varphi_1 + \varphi_2 Cum\_AA_i + \varphi_3 High\_Cost_i * Cum\_AA_i + \varphi_4 High\_Cost_i + \varphi_5 Pool_i + \varphi_6 Private\_Target_i + \varphi_7 Same\_Industry_i + \varphi_8 MV_i + \varphi_9 Rev\_Size_i + \eta_i$$

	High_Volatility		High_Segment	
	$CAR_{[-1,+1]}$	$CAR_{[-21,+1]}$	$CAR_{[-1,+1]}$	$CAR_{[-21,+1]}$
Cum_AA	-0.058	-0.272**	-0.053	-0.274***
	(1.07)	(2.33)	(1.06)	(2.69)
High_Cost*Cum_AA	-0.01	0.025	-0.024	0.052
	(0.14)	(0.16)	(0.25)	(0.31)
High_Cost	0	-0.001	-0.006	0.013
	(0.03)	(0.08)	(0.77)	(0.82)
Pool	-0.014*	-0.025*	-0.015**	-0.018
	(1.95)	(1.78)	(2.08)	(1.16)
Private_Target	0.047***	0.071***	0.047***	0.071***
	(5.73)	(4.71)	(5.66)	(4.71)
Same_Industry	-0.005	-0.002	-0.002	0.001
	(0.65)	(0.12)	(0.33)	(0.05)
MV	-0.002	0	-0.002	-0.001
	(0.82)	(0.07)	(0.94)	(0.26)
Rev_Size	0.010***	0.027***	0.009***	0.026***
	(3.12)	(4.90)	(2.89)	(4.68)
Constant	0.031**	0.066**	0.030**	0.055**
	(1.98)	(2.46)	(2.04)	(2.09)
$\varphi_2 + \varphi_3$	***-0.068***	***-0.247****	***-0.077***	***-0.222***
	(1.20)	***(2.30)***	***(0.95)***	***(1.61)***
Observations	794	794	803	803
R-squared	0.08	0.09	0.08	0.09

Robust t statistics in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. $High\_Cost_i$ equals either $High\_Volatility_i$ or $High\_Segment_i$. See Appendix B for the definition of these proxies and other variables in the model.

CHAPTER VI

ADDITIONAL TESTS

Acquirers' Earnings Management and Acquisition Premium

The underlying premise in this dissertation is that acquirers' earnings inflation is not intended to extract wealth from target shareholders but instead is a rational response to targets' expectations. If this premise is true, then acquirers' earnings inflation should not be negatively associated with the acquisition premium received by target shareholders (i.e., acquirers that manage earnings do not pay lower premium than acquirers that do not manage earnings, all else equal). In contrast, if acquirers use earnings inflation to extract wealth from target shareholders and target managers fail to adjust for the earnings inflation, then we should observe a negative association between the extent of acquirers' earnings inflation and the acquisition premium received by target shareholders. To provide evidence that acquirers' earnings inflation does not serve to extract wealth from target shareholders, I examine the association between acquirers' pre-acquisition abnormal accruals and acquisition premium using the following OLS regression.

$$\begin{aligned} Premium_i = {} & \delta_1 + \delta_2 Cum\_AA_i + \delta_3 T\_Liquidity_i + \delta_4 T\_DE_i + \delta_5 T\_MB_i + \delta_6 T\_Size_i \\ & + \delta_7 T\_PE_i + \delta_8 T\_Sales\_Growth_i + \delta_9 T\_ROE_i + \delta_{10} T\_CFO_i \\ & + \delta_{11} T\_Prior\_BHAR_i + \delta_{12} Pool_i + \eta_i \end{aligned} \quad (4)$$

Following Schwert (1996), I calculate $Premium_i$ as the cumulative abnormal return to the target's stock from the 42nd trading day before through the 126th trading day after the acquisition announcement (or through delisting, whichever comes first).[22]

[22] A disadvantage of measuring abnormal returns over a long horizon (126 trading days after the acquisition announcement) is that stock returns of the target might be affected by events unrelated to the acquisition. Therefore, I also measure premium as the cumulative abnormal return to the target's stock from the 42nd

$$Premium_i = \sum_{t=-42}^{\min\{126,\ delisting\}} AR_{it} \qquad (5)$$

AR_{it} is the abnormal return to the target's stock for day t, estimated using a market model. The market model is estimated for individual firms over the period from the 43rd trading day through the 295th trading day prior to the acquisition announcement. Firms with less than 60 trading days available to estimate the market model are excluded. The market return is proxied for by the CRSP value weighted index. Cum_AA_i is the cumulative performance adjusted abnormal accruals of acquirer i over the three quarters immediately before the acquisition announcement.

Following prior studies (e.g., Schwert 2000; Bargeron, Schlingemann, Stulz, and Zutter 2008; Raman et al. 2008), I control for several target characteristics that may affect the acquisition premium. All control variables are measured at the end of the fiscal quarter immediately before the acquisition announcement, unless otherwise stated. $T\_Liquidity_i$ is the ratio of the target's net liquid assets over total assets [(Current assets – Current liabilities)/Total assets]. T_DE_i is the target's debt-to-equity ratio. T_MB_i is the target's market value of equity over book value of equity. T_Size_i is the natural logarithm of the target's market value of equity. T_PE_i is the target's price-to-earnings ratio. $T\_Sales\_Growth_i$ is the average quarterly sales growth of the target calculated over four quarters ending at least 120 days prior to the acquisition announcement. T_ROE_i is the average quarterly return on equity of the target calculated over four quarters ending at least 120 days prior to the acquisition announcement. T_CFO_i is the average quarterly operating cash flows scaled by lagged assets of the target calculated over four quarters ending at least 120 days prior to the acquisition announcement. $T\_Prior\_BHAR_i$ is the

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trading day before through the 4th trading day after the acquisition announcement (or through delisting, whichever comes first). The result using this alternative measure of premium is also reported in Table 8.

buy-and-hold abnormal return (estimated using a market model) to the target's stock over the 12 months ending on the 43rd trading day prior to the acquisition announcement. $Pool_i$ is a dummy variable equal to 1 if acquirer i uses the pooling-of-interest method in accounting for the acquisition, 0 otherwise.

Table 8 presents regression results for model (4) using the full sample.[23] The coefficient on Cum_AA_i is positive when $CAR_{[-42,+4]}$ is used and negative when $CAR_{[-42,+126]}$ is used. More importantly, the coefficient is statistically insignificant at conventional levels for both measures of acquisition premium. Thus, I do not find that acquirers that manage earnings effectively pay lower acquisition premium than acquirers that do not manage earnings. Table 9 present regression results for model (4) separately for acquirers with high- and low-disclosure costs (disclosure costs are proxied for by industry concentration, price-cost margin, and market-to-book ratio). Similar to the results in Table 8, the coefficient on Cum_AA_i for acquirers with high- and low-disclosure costs are both statistically indistinguishable from zero. The difference in the coefficient on Cum_AA_i between acquirers with high- and low-disclosure costs is not statistically significant at conventional levels. This result is consistent with earnings management by stock-for-stock acquirers not serving to extract wealth from target shareholders. For control variables, targets' size, pre-acquisition sales growth and pre-acquisition abnormal stock returns are negatively associated with acquisition premium, consistent with Schwert (2000) and Bargeron et al. (2008). Other control variables are not statistically significant at conventional levels.

[23] The sample in this test includes 246 deals for which I could obtain data from Compustat and CRSP to calculate the variables included in model (4).

Table 8: Acquirers' Abnormal Accruals and Acquisition Premium (Overall Sample)

$$Premium_i = \delta_1 + \delta_2 Cum\_AA_i + \delta_3 T\_Liquidity_i + \delta_4 T\_DE_i + \delta_5 T\_MB_i + \delta_6 T\_Size_i + \delta_7 T\_PE_i + \delta_8 T\_Sales\_Growth_i + \delta_9 T\_ROE_i + \delta_{10} T\_CFO_i + \delta_{11} T\_Prior\_BHAR_i + \delta_{12} Pool_i + \eta$$

	(1)	(2)
	$T\_CAR_{[-42,+126]}$	$T\_CAR_{[-42,+4]}$
Cum_AA	-0.083	0.16
	(0.23)	(0.57)
T_Liquidity	-0.077	-0.07
	(0.52)	(0.79)
T_DE	0.013	0.002
	(0.56)	(0.19)
T_MB	-0.006	-0.002
	(0.49)	(0.34)
T_Size	-0.049**	-0.036**
	(2.06)	(2.10)
T_PE	0.001	0
	(0.94)	(0.59)
T_Sales_Growth	-0.017	-0.053***
	(0.80)	(3.78)
T_ROE	0.027	0.049**
	(0.77)	(2.36)
T_CFO	-0.049	0.226
	(0.08)	(0.63)
T_Prior_BHAR	-0.498***	-0.259***
	(7.52)	(7.17)
Pool	-0.117*	-0.027
	(1.79)	(0.57)
Constant	0.982***	0.716***
	(3.61)	(3.63)
Observations	246	246
R-squared	0.34	0.22

Robust t statistics in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. $Premium_i$ is either $T\_CAR_{i[-42,+126]}$ or $T\_CAR_{i[-42,+4]}$. See Appendix B for the definition of these proxies and other variables in the model. Cum_AA_i and $Premium_i$ are truncated at the 0.5^{th} and 99.5^{th} percentiles. T_DE_i, T_MB_i, T_PE_i are truncated at -1,000 and 1,000.

Table 9: Acquirers' Abnormal Accruals and Acquisition Premium (Separate Results for Acquirers with High- and Low-Disclosure Costs)

$$Premium_i = \delta_1 + \delta_2 Cum\_AA_i + \delta_3 T\_Liquidity_i + \delta_4 T\_DE_i + \delta_5 T\_MB_i + \delta_6 T\_Size_i + \delta_7 T\_PE_i + \delta_8 T\_Sales\_Growth_i + \delta_9 T\_ROE_i + \delta_{10} T\_CFO_i + \delta_{11} T\_Prior\_BHAR_i + \delta_{12} Pool_i + \eta$$

	Industry Concentration		Price-Cost Margin		Market-to-Book	
	Low	High	Low	High	Low	High
Cum_AA	0.385	-0.174	0.277	-0.243	0.009	-0.214
	(0.60)	(0.36)	(0.64)	(0.47)	(0.01)	(0.61)
T_Liquidity	-0.045	-0.128	-0.106	-0.157	-0.334	0.101
	(0.24)	(0.56)	(0.36)	(0.99)	(1.29)	(0.50)
T_DE	0.059	-0.027	0.048	-0.027	-0.029	0.068*
	(1.28)	(0.96)	(1.61)	(1.05)	(1.15)	(1.83)
T_MB	-0.043***	0.015	-0.042*	0.016	0.019	-0.032*
	(3.03)	(1.15)	(1.73)	(1.28)	(1.10)	(1.78)
T_Size	-0.048	-0.043	-0.049	-0.078***	-0.060*	-0.033
	(1.61)	(1.26)	(1.13)	(2.85)	(1.78)	(1.01)
T_PE	0.001	0	0	0	0	0.001
	(1.01)	(0.39)	(0.31)	(0.24)	(0.32)	(1.45)
T_Sales_Growth	-0.003	-0.659*	-0.05	-0.107	-0.527	0.001
	(0.11)	(1.69)	(1.16)	(0.34)	(1.46)	(0.04)
T_ROE	-0.269	0.016	-0.091	0.206*	0.008	-0.076
	(0.58)	(0.56)	(0.95)	(1.86)	(0.14)	(0.87)
T_CFO	-0.243	-0.276	-1.654	-0.092	-1.068	0.194
	(0.29)	(0.33)	(1.50)	(0.14)	(0.86)	(0.31)
T_Prior_BHAR	-0.357***	-0.550***	-0.461***	-0.540***	-0.517***	-0.406***
	(3.81)	(7.99)	(3.91)	(8.80)	(4.81)	(4.68)
Pool	0.051	-0.131	-0.019	-0.173**	-0.05	-0.115
	(0.48)	(1.61)	(0.13)	(2.51)	(0.48)	(1.26)
Constant	1.049***	0.877**	0.987**	1.355***	1.124***	0.803**
	(3.13)	(2.35)	(2.00)	(4.29)	(3.05)	(2.14)
Observations	118	125	109	106	117	126
R-squared	0.32	0.46	0.36	0.52	0.37	0.37

Robust t statistics in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. In this table, premium is $T\_CAR_{[-42,+126]}$.

Disclosure Costs and Earnings Management by Cash Acquirers

To provide further evidence on the premise that stock-for-stock acquirers manage earnings because targets expect them to do so (the signal-jamming problem), I examine whether the association between disclosure costs and pre-acquisition abnormal accruals holds for cash acquirers. Unlike stock-for-stock acquirers, cash acquirers do not have obvious acquisition-induced motives to inflate earnings since cash acquirers pay their targets with cash. Therefore, I do not expect the association between disclosure costs and pre-acquisition abnormal accruals to hold for cash acquirers.

I use the same sample selection criteria as in the main tests (except that the payment structure is now pure cash) to collect a sample of cash acquirers. Figure 7 plots mean and median performance adjusted abnormal accruals around the acquisition announcement for this sample of cash acquirers. Figures 8 through 10 plot median performance adjusted abnormal accruals for cash acquirers with high- and low-disclosure costs as proxied for by industry concentration, price-cost margin, and market-to-book ratio, respectively. As can be seen from these four figures, there is no evidence of earnings management by cash acquirers regardless of the extent of disclosure costs. In more formal tests, I estimate models (2) and (3) using this sample of cash acquirers. Results (untabulated) suggest that there is no association between cash acquirers' pre-acquisition abnormal accruals and disclosure costs. Moreover, upon the acquisition announcement, the market does not discount pre-acquisition abnormal accruals of cash acquirers, regardless of the extent of disclosure costs. The absence of an association between disclosure costs and pre-acquisition abnormal accruals for cash acquirers provides further support for my hypotheses.

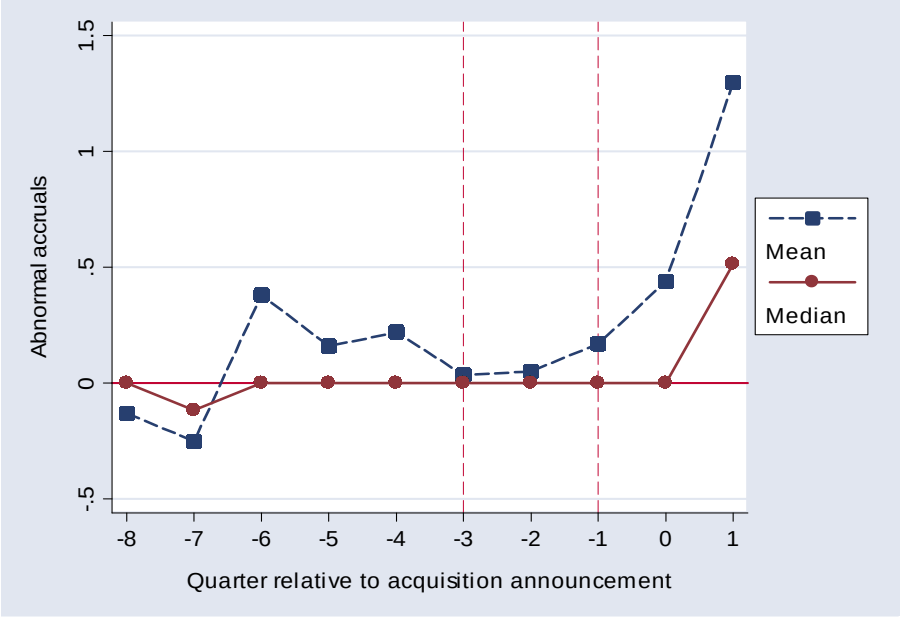


Figure 7: Abnormal accruals of cash acquirers. Quarter orders are defined as in Figure 1. The sample includes 1,100 cash deals.

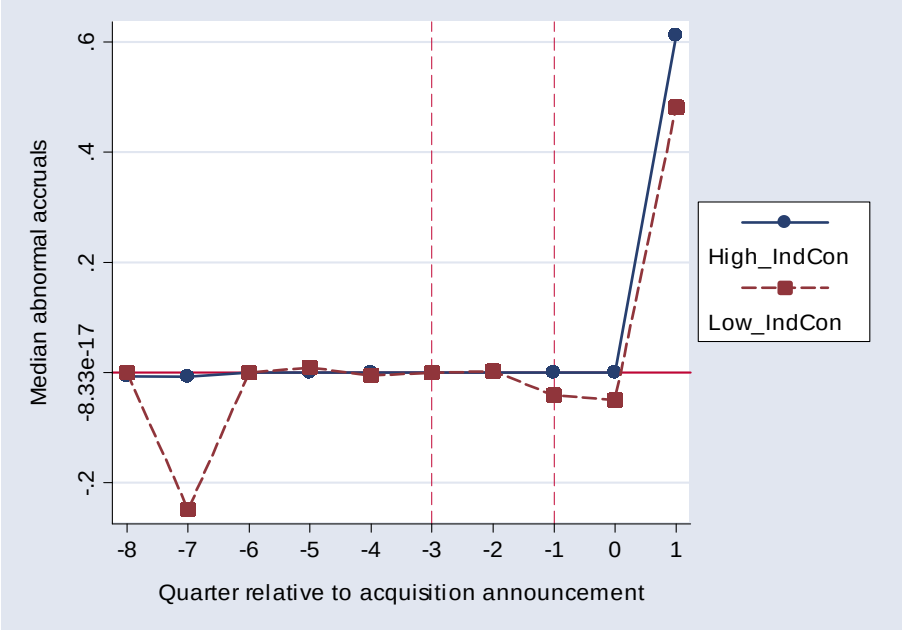


Figure 8: Abnormal accruals of cash acquirers with high industry concentration (High_IndCon) and low industry concentration (Low_IndCon). High_IndCon and Low_IndCon are defined relative to the median industry concentration of sample acquirers. Quarter orders are defined as in Figure 1. The sample includes 1,098 cash deals.

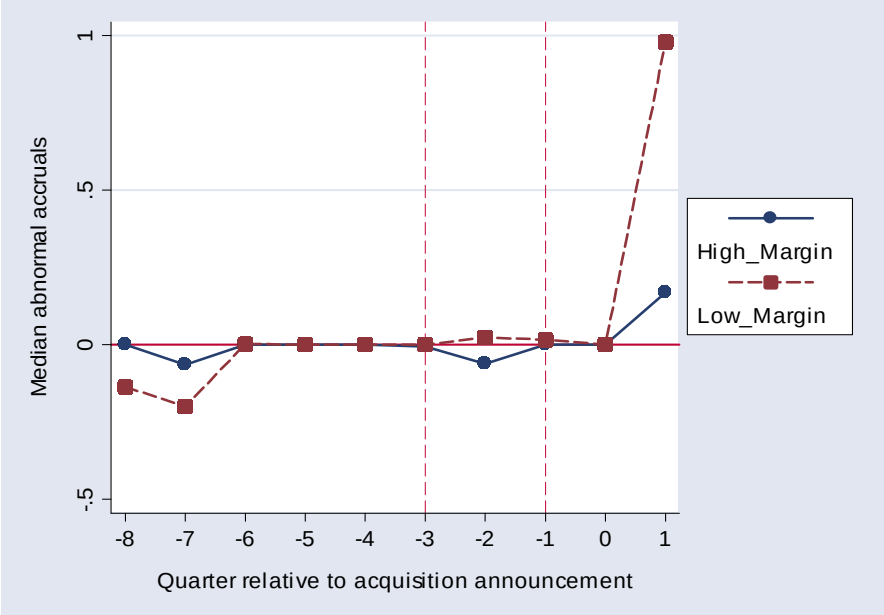


Figure 9: Abnormal accruals of cash acquirers with high price-cost margin (High_Margin) and low price-cost margin (Low_Margin). High_Margin and Low_Margin are defined relative to the median price-cost margin of sample acquirers. Quarter orders are defined as in Figure 1. The sample includes 969 cash deals.

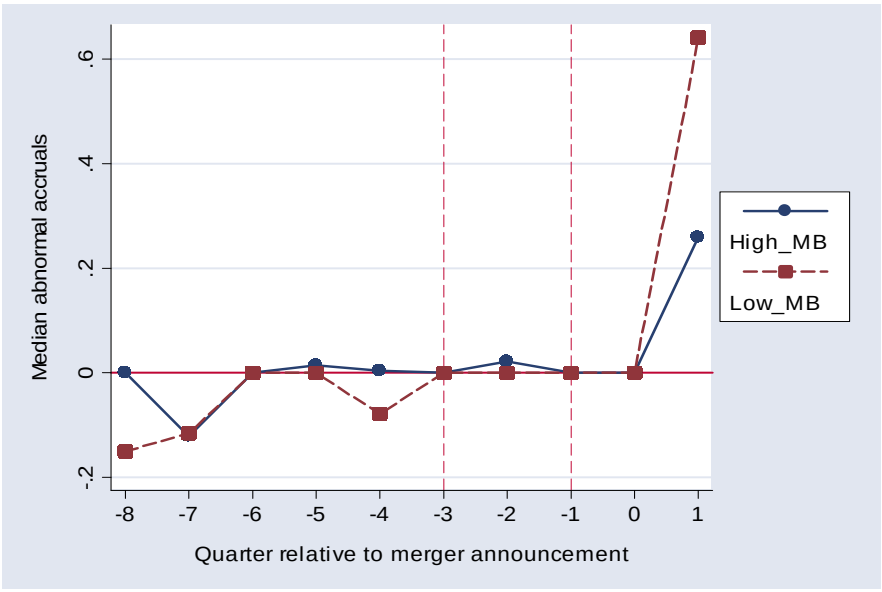


Figure 10: Abnormal accruals of cash acquirers with high market-to-book ratio (High_MB) and low market-to-book ratio (Low_MB). High_MB and Low_MB are defined relative to the median market-to-book ratio of sample acquirers. Quarter orders are defined as in Figure 1. The sample includes 1,100 cash deals.

An Alternative Measure of Abnormal Accruals

Pungaliya and Vijh (2009) show that stock-for-stock acquirers have higher sales growth than cash acquirers. The authors suggest an approach to estimate abnormal accruals that controls for both ROA and sales growth. To test if my main results are sensitive to measures of abnormal accruals, I follow the approach suggested by Pungaliya and Vijh (2009) to estimate *ROA and sales growth adjusted abnormal accruals*. First, I estimate residual accruals for individual firms using model (1) introduced earlier. Then, for each fiscal quarter I sort firms into ROA quintiles based on ROA for the same quarter in the previous year. I simultaneously sort firms into sales growth terciles. Sales growth is the percentage change in sales from the same quarter in the previous year to the current quarter. For each sample firm, I identify a matched portfolio that includes firms in the same two-digit industry, ROA quintile, and sales growth tercile. I require each matched portfolio to have at least 3 observations. Finally, the *ROA and sales growth adjusted abnormal accruals* of each sample firm is the difference between the firm's residual accruals estimated from model (1) and the median residual accruals of the matched portfolio. I re-estimate models (2) and (3) using this alternative measure of abnormal accruals as a proxy for earnings management. The results (untabulated) are similar to the main results reported when price-cost margin and market-to-book ratio are used to proxy for disclosure costs and are somewhat weaker when industry concentration is used to proxy for disclosure costs.

Deal Size and Stock-for-Stock Acquirers' Earnings Management

Finally, I examine whether the association between acquirers' earnings management and disclosure costs varies with the size of the deal. The incentive of

acquirers to manage earnings is likely to be stronger when the deal is larger. I calculate deal size as the deal value obtained from SDC Platinum scaled by the market value of the acquirer at the end of the fourth quarter prior to the acquisition announcement. I then split the sample in to two subsamples: One subsample includes deals with size above the median and the other subsample includes deals with size equal to or below the median. I rerun model (2) and (3) on these two subsamples and find that the association between acquirers' disclosure costs and earnings management is stronger for the subsample of larger deals (results are untabulated). However, the difference in the strength of the association between disclosure costs and earnings management between acquirers with high- and low-deal size is not statistically significant at conventional levels.

CHAPTER VII

CONCLUSION

Despite extensive evidence of earnings management by acquirers before stock-for-stock acquisitions in the literature, the underlying motive that leads acquirer managers to engage in such activity is not well understood. Given target managers' strong incentives to detect and adjust for earnings management and their ability to request additional information from the acquirer during the due diligence process, it is unlikely that acquirers would be able to fool target managers and extract wealth from target shareholders through earnings management. Stein (1989) shows that the inability of managers to signal the absence of earnings management leads them to manage earnings even when they are unable to mislead outside stakeholders. Building on Stein's model, in this dissertation I examine whether costs associated with disclosing private information hinder acquirers' ability to credibly signal the absence of earnings management to targets, thereby leading acquirers with high disclosure costs to manage earnings before stock-for-stock acquisitions.

I find that stock-for-stock acquirers with high proprietary disclosure costs, as proxied for by acquirers' industry concentration, price-cost margin and market-to-book ratio, have higher pre-acquisition abnormal accruals than stock-for-stock acquirers with low proprietary disclosure costs. Moreover, upon the acquisition announcement, the market discounts pre-acquisition abnormal accruals of stock-for-stock acquirers with high proprietary disclosure costs but not pre-acquisition abnormal accruals of stock-for-stock acquirers with low proprietary disclosure costs, consistent with acquirers with high disclosure costs but not acquirers with low disclosure costs using discretionary accruals

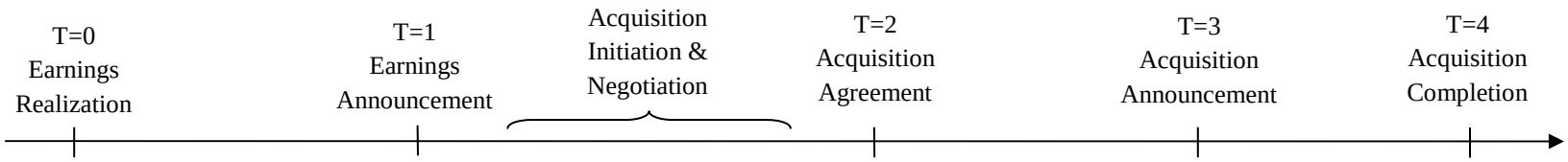
to manage earnings prior to the acquisition. Finally, I do not find a negative association between the extent of acquirers' earnings management and the acquisition premium received by target shareholders, suggesting that target managers properly anticipate and adjust for acquirers' earnings management in setting the exchange ratio to protect target shareholders. Overall, the results in this dissertation could be interpreted as suggesting that earnings management by acquirers before stock-for-stock acquisitions does not serve to extract wealth from target shareholders but rather is a rational response to targets' expectations when high disclosure costs prevent the acquirers from credibly signaling the absence of earnings management. More generally, my findings suggest that high disclosure costs could lead firms to manage earnings even in settings where they are unable to mislead financial statement users.

One important caveat of this study stems from the fact that both disclosure costs and earnings management are not directly observable. Although abnormal accruals have been widely used in the literature to proxy for earnings management, there is little consensus on which model provides the best estimate of abnormal accruals. In addition, the proxies for disclosure costs used in this paper (industry concentration, price-cost margin, and market-to-book ratio) are likely measured with error. For example, because Compustat does not provide sales data for private firms, the four-firm concentration ratio calculated using Compustat data might not accurately capture the true degree of concentrations in each industry (Ali, Klasa, Yeung 2009). Nonetheless, the fact that I find consistent results using different measures of proprietary disclosure costs and abnormal accruals suggests that my measures capture, at least in part, the underlying constructs that they purport to capture.

APPENDIX A

THE EARNINGS MANAGEMENT GAME BEFORE A STOCK-FOR-STOCK ACQUISITION

Timeline of the Game



Three players:

- Acquirer knows true earnings
- Target does not know true earnings
- Market does not know true earnings

Three players:

- Acquirer knows true earnings, reported earnings, and the acquisition ahead
- Target knows reported earnings.
- Market knows reported earnings.

Hypothesis 1: Acquirer's earnings inflation decision (association between disclosure costs and abnormal accruals)

Three players:

- Acquirer knows true earnings, reported earnings, and the acquisition.
- Target knows reported earnings and the acquisition (so target knows the acquirer's incentive to inflate earnings). Target makes adjustments for earnings management if necessary
- Market knows reported earnings.

Three players:

- Acquirer knows true earnings, reported earnings, and the acquisition.
- Target knows reported earnings, the acquisition, and the market reaction.
- Market knows reported earnings and the acquisition. The market also infers and adjusts the acquirer's stock price for the impact of earnings inflation.

Hypothesis 2: Market's reaction to acquirers' earnings inflation (association between announcement abnormal returns and abnormal accruals)

Equilibrium Analysis

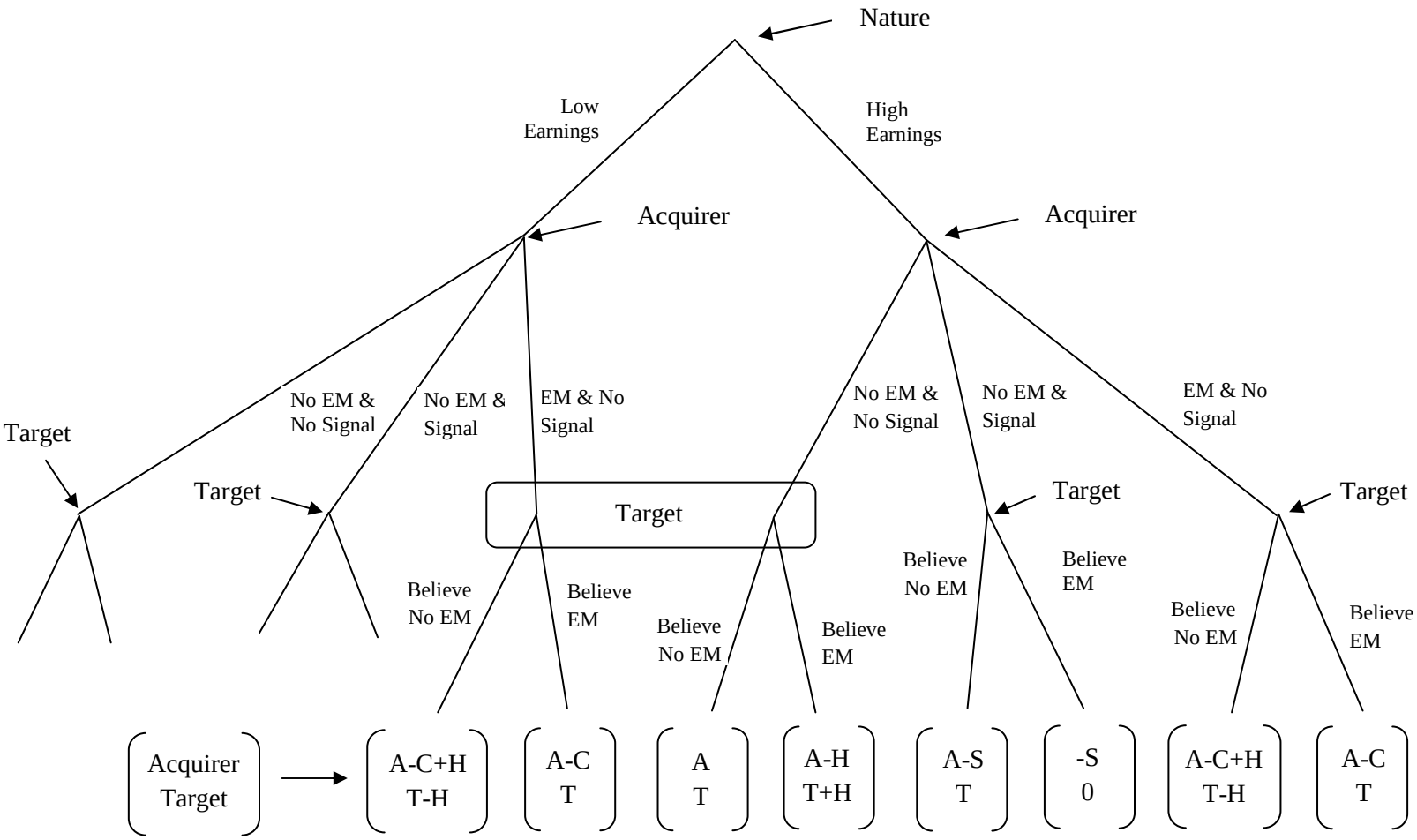
In this game, both the acquirer and the target are rational and know the other player is rational. At T=0, nature moves first and determines the acquirer's earnings (high or low). The acquirer decides whether to manage earnings at time T=1. Simultaneously with the decision whether to manage earnings, the acquirer also chooses whether to disclose information to signal the absence of earnings management. After the earnings announcement at T=1, the acquirer initiates and negotiates the acquisition with the target.[24] At time T=2, after observing reported earnings and disclosures by the acquirer, the target decides whether to discount the acquirer's stock price for the effect of earnings management (note that at time T=2 the target already knows about the acquisition and hence knows the acquirer's incentive to inflate earnings).

Assumptions:

- *T* is the target's share of synergy gains (acquisition premium); *A* is the acquirer's share of synergy gains; *C* is the cost of earnings management (e.g., expected litigation cost); *H* is the wealth transfer from the target to the acquirer if the acquirer manages earnings but the target incorrectly believes that the acquirer does not manage earnings; S is the cost incurred by the acquirer to signal the absence of earnings management (i.e., costs associated with disclosing private information to the target). *H* is assumed to be correctly inferred by both the acquirer and the target (in fact, this must hold in equilibrium).
- $C < H$ and $S<H$. That is, both the cost of earnings management and the cost of signaling the absence of earnings management are assumed to be smaller than the potential wealth transfer from the target to the acquirer if the target is fooled by the acquirer's earnings management. These assumptions are not indispensable and are made to insure that the acquirer's decision to manage earnings depends only on the relative magnitude of earnings management costs and disclosure costs.

[24] While the assumption that the acquirer is the initiator of the acquisition is not true for every deal, it is a reasonable assumption for most acquisitions.

With these assumptions, the extensive form of this game is shown below (for ease of presentation, only strategies of the acquirer with high realized earnings and associated target's strategies and payoffs are presented):



The acquirer with high realized earnings has three strategies: (1) Manage earnings and does not signal the absence of earnings management (*EM & No Signal*); (2) Does not manage earnings and signal the absence of earnings management (*No EM & Signal*); (3) Does not manage earnings and does not signal the absence of earnings management (*No EM & No Signal*).[25]

The target has four strategies:

- Strategy 1: Believe the acquirer manages earnings, whether the acquirer signals the absence of earnings management or not.
- Strategy 2: Believe the acquirer manages earnings if the acquirer does not signal the absence of earnings management, believe the acquirer does not manage earnings if the acquirer signals the absence of earnings management.
- Strategy 3: Believe the acquirer does not manage earnings if the acquirer does not signal the absence of earnings management, believe the acquirer manages earnings if the acquirer signals the absence of earnings management.
- Strategy 4: Believe the acquirer does not manage earnings, whether the acquirer signals the absence of earnings management or not.

It is easy to see that there are two potential Nash equilibria: *{EM & No Signal; Strategy 2}* and *{No EM & Signal; Strategy 2}*. Which one will become the Nash equilibrium of the game depends on the magnitude of C (cost of earnings management) relative to S (cost of signaling the absence of earnings management – i.e., disclosure costs).

- If C > S (cost of earnings management is greater than cost of signaling), then the resultant Nash equilibrium is {No EM & Signal; Strategy 2}. In this equilibrium the acquirer does not manage earnings and discloses sufficient information for the target to verify the absence of earnings management. Since the target can verify that the acquirer does not manage earnings, the target does not discount the acquirer's stock price in setting the exchange ratio.

[25] *Manage earnings & signal the absence of earnings management* is a possible but not sensible strategy since earnings management will be exposed by the signal.

- If C < S (cost of earnings management is smaller than cost of signaling), then the resultant Nash equilibrium is {EM & No Signal; Strategy 2}. In this equilibrium, the acquirer manages earnings and refuses to disclose information for the target to verify the absence of earnings management. The target, in turn, assumes that the acquirer manages earnings and discounts the acquirer's stock price in setting the exchange ratio.

APPENDIX B

VARIABLE DEFINITIONS

Variable	Definition
Cum_AA_i	Cumulative performance adjusted abnormal accruals of acquirer i over the three fiscal quarters immediately before the acquisition announcement (expressed as percentage of lagged total assets).
$IndCon_i$	The degree of concentration of acquirer i's industry in the year immediately before the acquisition announcement.
$High\_IndCon_i$	A dummy variable equal to 1 if $IndCon_i$ is above the median industry concentration of all sample acquirers, 0 otherwise.
PC_Margin_i	Acquirer i's industry adjusted price-cost margin calculated over three years up to the year before the acquisition announcement.
$High\_Margin_i$	A dummy variable equal to 1 if PC_Margin_i is above the median price-cost margin of all sample acquirers, 0 otherwise.
Low_Margin_i	A dummy variable equal to 1 if $High\_Margin_i$ is zero, 0 otherwise.
MB_i	Acquirer i's market value over book value of equity at the end of the fourth quarter before the acquisition announcement.
$High\_MB_i$	A dummy variable equal to 1 if MB_i is above the median market-to-book ratio of all sample acquirers, 0 otherwise.
$NI\_Volatility_i$	The standard deviation of quarterly net income scaled by lagged total assets of acquirer i calculated over eight quarters up to the fourth quarter before the acquisition announcement.
$High\_Volatility_i$	A dummy variable equal to 1 if $NI\_Volatility_i$ is above the median income volatility of all sample acquirers, 0 otherwise.
$Segment_i$	Acquirer i's number of business segments in the year immediately before the acquisition announcement.
$High\_Segment_i$	A dummy variable equal to 1 if acquirer i has at least two business segments, 0 otherwise.
$Size_i$	The natural logarithm of the market value of acquirer i's equity at the end of the fourth quarter before the acquisition announcement.

Variable	Definition
$Pool_i$	A dummy variable equal to 1 if acquirer i uses the pooling-of-interest method in accounting for the acquisition, 0 otherwise.
$Leverage_i$	Long-term debt divided by total assets of acquirer i at the end of the fourth quarter before the acquisition announcement.
$Litigation_i$	A dummy variable equal to 1 if acquirer i operates in a high-litigation risk industry, 0 otherwise. High-litigation risk industries include biotechnology (SIC codes 2833-2836 and 8731-8734), computers (SIC codes 3570-3577 and 7370-7374), electronics (SIC codes 3600-3674), and retailing (SIC codes 5200-5961).
$Same\_Industry_i$	A dummy variable equal to 1 if both the acquirer and its target are in the same industry, 0 otherwise.
$Private\_Target_i$	A dummy variable equal to 1 if the target is a private firm, 0 otherwise.
$Post\_SOX_i$	A dummy variable equal to 1 for fiscal quarters ending after 2001, 0 otherwise.
$CAR_{[-1,+1]}$	Cumulative abnormal return to the stock of acquirer i over trading days [-1, +1]. Trading days are defined relative to the acquisition announcement (day 0). Abnormal returns are estimated using a market model.
$CAR_{[-21,+1]}$	Cumulative abnormal return to the stock of acquirer i over trading days [-21, +1].
MV_i	The natural logarithm of the market value of acquirer i's equity at the end of the fiscal quarter immediately before the acquisition announcement.
Rev_Size_i	The natural logarithm of the ratio of the deal value and the market value of acquirer i's equity at the end of the fiscal quarter immediately before the acquisition announcement.
$T\_CAR_{[-42,+126]}$	Cumulative abnormal return to the target's stock from the 42^{nd} trading day before through the 126^{th} trading day after the acquisition announcement (or through delisting, whichever comes first). Abnormal returns are estimated using a market model.

Variable	Definition
$T\_CAR_{[-42,+4]}$	Cumulative abnormal return to the target's stock from the 42nd trading day before through the 4th trading day after the acquisition announcement (or through delisting, whichever comes first).
$T\_Liquidity_i$	The target's (current assets – current liabilities)/total assets at the end of the quarter immediately before the acquisition announcement.
T_DE_i	The target's debt-to-equity ratio at the end of the quarter immediately before the acquisition announcement.
T_MB_i	The target's market value over book value of equity at the end of the quarter immediately before the acquisition announcement.
T_Size_i	The natural logarithm of the market value of the target's equity at the end of the quarter immediately before the acquisition announcement.
T_PE_i	The target's price-to-earnings ratio for the quarter immediately before the acquisition announcement.
$T\_Sales\_Growth_i$	The average quarterly sales growth of the target calculated over four quarters ending at least 120 days prior to the acquisition announcement date.
T_ROE_i	The average quarterly return on equity of the target calculated over four quarters ending at least 120 days prior to the acquisition announcement date.
T_CFO_i	The average quarterly operating cash flows scaled by lagged assets of the target calculated over four quarters ending at least 120 days prior to the acquisition announcement date.
$T\_Prior\_BHAR_i$	The target's buy-and-hold abnormal returns (estimated using a market model) over the 12 months ending on the 43th trading day prior to the acquisition announcement.

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