

2007

Voluntary disclosures in mergers and acquisitions

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VOLUNTARY DISCLOSURES IN MERGERS AND ACQUISITIONS

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
In partial fulfillment of the
Requirements for the degree of
Doctor of Philosophy

in

The Department of Accounting

By
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August 2007

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ABSTRACT

Whenever there is a merger between two publicly held companies in the form of a stock transaction, the companies must provide a proxy-prospectus to their shareholders with enough information to vote on the proposed merger. The proxy-prospectus contains mandatory pro forma financial statements as if the firms had merged as of the end of the previous year. Occasionally, the proxy-prospectus contains voluntary, forward-looking information, such as projected earnings per share (EPS) or price-to-earnings (PE) ratios of the combined firm.

There are two reasons that management may provide this voluntary forward-looking information: 1) management could be providing an optimistic view of the new firm to persuade the shareholders to vote in favor of the merger or 2) the information could be used to provide a clearer picture to help management reduce the information asymmetry between management and shareholders.

This study investigates the factors that increase the likelihood of a merger being completed. Second, this study examines the impact that important reporting incentives and firm characteristics have on whether or not firms choose to voluntarily disclose earnings estimates. Lastly, this study examines earnings forecast bias and the factors related to the accuracy and bias of the voluntarily disclosed earnings estimates.

Results indicate that shareholders of bidder firms that are weaker financially are more likely to approve a merger suggesting that shareholders of weaker firms might be trying to get stronger by merging with another firm. Second, bidder firms with stronger financial characteristics and target firms with weaker financial characteristics are more apt to voluntarily disclose earnings estimates. Additionally, for those firms that provided EPS forecasts, the forecasts were positively biased. These findings indicate that

management of bidder firms that are stronger financially may use these voluntary EPS forecasts to enhance the future outlook of the firm.

Lastly, firms that provided voluntary earnings estimates were examined. Results indicate that firms with stronger corporate governance provided more accurate and less biased EPS forecasts. This suggests that corporate governance, which is in place to protect shareholder rights, is doing its job.

1. INTRODUCTION

The objective of this study is to examine the characteristics of those firms that voluntarily disclose forward-looking earnings estimates in the proxy-prospectus when completing a merger. This study examines whether or not voluntarily disclosing earnings estimates increases the likelihood of a merger being completed. For those firms that voluntarily disclose earnings estimates, this study also examines the bias and accuracy of the estimates as well as the financial and corporate governance characteristics of the firms that produce more accurate forecasts.

At the time of the proxy-prospectus, the boards of directors and management for both firms have decided to go forward with the merger and have agreed on the post-merger management compensation. In the Titan Corp. - Lockheed Martin Corp. merger, the post-merger management compensation included severance payments of three times the sum of the base salary and highest bonus, fully vesting options and retirement plans, \$100,000 in outplacement services, and \$800,000 for an office and secretary during the next five years. These amounts totaled \$10 million for the top three executives. In the Shell Oil - Quaker State merger, executives and directors received a cash payment of all vested and unvested options and two times the sum of their annual salary and target bonus. This post-merger compensation provides an incentive for management to provide shareholders with enough information to increase the likelihood that the merger will be completed. The voluntarily provided, forward-looking information could be interpreted in one of two ways: 1) the information could be used to provide an optimistic picture of the new firm to persuade the shareholders to vote in favor of the merger or 2) the information could be used to provide a clearer picture to help management reduce the information asymmetry between management and shareholders.

When two companies merge, there are four important dates: 1) the announcement date, 2) the proxy-prospectus filing date, 3) the proxy vote date, and 4) the merger date. The announcement date is the date that management announces to the public that there is a proposed merger, the proxy-prospectus filing date is the date that the firms provide information to the shareholders, the proxy vote date is the date that shareholders of both the bidder and target firms vote on the proposed merger, and the merger date is the effective date of the merger. When both companies are publicly traded and there is a stock transaction in connection with the merger, the firms must provide shareholders with a proxy-prospectus detailing the merger and allowing the stockholders to vote on the proposed merger. The filing date of the proxy-prospectus comes after the announcement date and before the merger date. Figure 1 provides a timeline of events associated with a typical merger or acquisition.

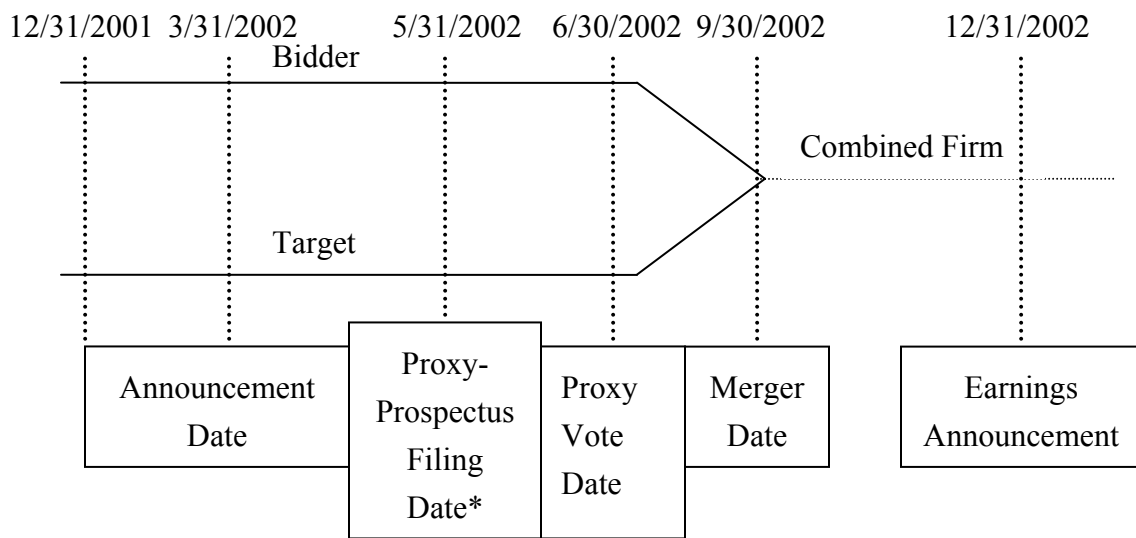


Figure 1: Timeline of events associated with a typical merger or acquisition (using hypothetical dates)

*Firms provide a mandatory pro forma financial statement as if the firms had merged on 12/31/2001 and may voluntarily provide forecasted EPS or PE ratios of the completed firm as of 12/31/2002

Included in the proxy-prospectus is mandatory information such as merger consideration, voting rights, and pro forma financial statements as if the two firms had merged at the end of the previous year. Additionally, the proxy-prospectus may include some forward-looking information, such as forecasted earnings per share (EPS) or the forecasted price-to-earnings ratio (PE Ratio) of the combined firm. These earnings estimates are voluntary and are not provided in all proxy prospectus filings. Since these earnings estimates are voluntary, it provides a setting in which to investigate several aspects of firms' reporting behavior. First, this study investigates whether voluntarily disclosing these earnings estimates increases the probability of completing a merger. Second, this study examines the impact that important reporting incentives and firm characteristics (including financial and corporate governance characteristics) have on whether or not firms choose to voluntarily disclose earnings estimates. Lastly, this study examines factors related to the accuracy and bias of the voluntarily disclosed earnings estimates.

While Brennan [1999] examined voluntary disclosure prior to and during the announcement, the current study extends the voluntary disclosure literature by examining the firm characteristics and voluntary disclosure at the time of the proxy-prospectus. The time of the proxy-prospectus is important because it is filed at a time when there may be tension between the incentives of management and the shareholders. Also, incentive conflicts may exist between the boards of directors and management prior to the merger agreement. Management of the target firm must agree on post-merger compensation since their firm will no longer be in existence while the management of the bidder firm will be held accountable for the quality of the merger. At the time of the proxy-prospectus, management of both firms know the consequences of the merger and have

agreed to move forward with the merger, therefore it is assumed that the conflicts between the boards of directors and management have been resolved once the post-merger compensation has been negotiated. This study focuses on the information voluntarily disclosed to the shareholders at the time of the proxy-prospectus.

By examining the financial and corporate governance characteristics of both the bidder and target firms, this study identifies the characteristics of the firms that choose to voluntarily disclose earnings estimates. Stronger financial and corporate governance characteristics may suggest that management voluntarily discloses earnings estimates to reduce the asymmetric information between management and shareholders, while weaker financial and corporate governance characteristics suggest that management voluntarily discloses earnings estimates to persuade their shareholders to vote in favor of the merger. In other words, firms that are stronger financially or have stronger corporate governance may provide as much information as possible since there is no need to hide the information from the shareholders, while firms that are weaker financially or have weaker corporate governance may need to provide information to persuade shareholders to vote in favor of the merger.

Additionally, the voluntarily disclosed earnings estimates are examined to determine if they are optimistically biased and to determine if the earnings estimates enhance the likelihood of a merger being completed. Optimistically biased earnings estimates may be indicative of management using voluntary disclosure to persuade shareholders to vote in favor of the merger. Lastly, the financial and corporate governance characteristics of the firms that voluntarily disclose earnings estimates are analyzed to examine the factors that may increase forecast accuracy.

The remainder of this paper is organized as follows; the next chapter describes the related literature. Chapter 3.0 develops the hypotheses, chapter 4.0 presents details of the research methodology employed, chapter 5.0 reports empirical analysis and results, and chapter 6.0 summarizes and concludes the paper.

2. LITERATURE REVIEW

Mergers and acquisitions have been extensively researched in the finance literature. Most of this literature focuses on stock price returns of the target and bidder firms before, during, and after the merger or acquisition. Asquith *et al.* [1983]; Bradley [1980]; Bradley *et al.* [1983]; Dodd and Ruback [1977]; Eckbo [1983]; Jarrell and Bradley [1980]; Kummer and Hoffmeister [1978]; Malatesta [1983], and Ruback [1983] examined large window effects (1 month) around the announcement date and found that target firms have high returns (approximately 20%) while bidding firms have much lower returns (between 2% and 6%) around the announcement date. Other studies have examined small window effects (1-5 days) of mergers and found that target firms received returns around 8% while bidder firms had insignificant returns (Asquith *et al.* [1983]; Dodd [1980]; and Eckbo [1983]).

Jarrell *et al.* [1988] examined the source of the gains that are associated with mergers and acquisitions and found no evidence of systematic losses by the bidding firms that would offset the large gains that the target firms are receiving. These findings suggest that mergers and acquisitions create value to the economy.

Other merger and acquisition studies have examined the types of firms that choose to merge. There is some evidence of industry clustering of mergers due to industry shocks that require firms to merge to be more productive (Andrade *et al.* [2001]; Gort [1969], Healy *et al.* [1992]; Jensen [1986]; and Jensen [1993]). Healy *et al.* [1992] extend the previous studies by examining post-merger operating performance of firms compared to the industry median and found that merged firms performed better than their non-merged industry counterparts providing additional evidence that mergers and acquisitions are beneficial to the economy.

Given that mergers and acquisitions appear to provide value to the economy and that target firms appear to benefit more from a merger, it is beneficial to determine how managers convince the shareholders to vote in favor of the merger since an agency conflict may exist between management and shareholders. For example, at the time of the proxy-prospectus, management of the two firms have negotiated and completed their post-merger compensation and may have different incentives than the shareholders. Jensen and Meckling [1976] pointed out that agency problems exist with any company in which the owner is not also the operator.¹ Corporate governance, including contracting, disclosure, and monitoring may help control agency problems by reducing the asymmetric information and incentive conflicts between management and shareholders.

Most voluntary disclosure literature deals with the frequency and time in which a company chooses to voluntarily disclose information. Lang and Lundholm [2000] found that there was a significant increase in disclosures regarding performance and more management interpretation of the firm's performance beginning six months prior to the offering. There is also an increase in disclosure as the end of the year approaches, which reduces the external factors that may increase the forecast error (Waymire [1985] and McNichols [1989]).

Myers and Majluff [1984] indicated that companies making public equity or debt offerings have incentives to voluntarily disclose information to reduce information asymmetry. Increased information asymmetry between management and shareholders increases the risk associated with the transaction, and therefore decreases the stock price of the firm. Without the disclosure of earnings estimates, shareholders are left with

¹ An agency problem may exist in a merger and acquisition setting once the boards of directors and management have agreed on their post-merger compensation. At the time of the proxy prospectus, management may be acting in their best interest rather than the best interest of the shareholders of the firm.

insufficient information to make informed decisions as to whether or not the merger is economically beneficial.

Healy and Palepu [2001] discuss six forces that affect managers' disclosure decisions. These forces include capital market transactions, corporate control contests, stock compensation, litigations, proprietary costs, and management talent signaling. Capital market transactions will increase the quantity of disclosures in the merger and acquisition process, while corporate control may increase the accuracy of the disclosures.

Cox [1985]; Imhoff [1978]; Ruland [1979]; and Waymire [1985] examine the differences between those firms that issue earnings estimates and those firms that do not. They found that firms that issue earnings estimates are larger, have smoother, less volatile earnings, and have more accurate analyst forecasts. Other characteristics that may increase the likelihood of firms issuing voluntary earnings forecasts include firms that had previously provided earnings forecasts (Frankel *et al.* [1995] and Ruland *et al.* [1990]) and firms within the same industry (Andrade *et al.* [2001]; Botosan and Harris [2000]; Gort [1969]; Jensen [1986]; and Jensen [1993]).

Additionally, Clarkson *et al.* [1992] examined some of the characteristics of those firms that disclosed earnings forecasts in Canadian IPO prospectuses and found that audit quality, underwriter prestige, and terms of offering are all reasons that a firm may issue earnings estimates. These findings indicate that corporate governance factors may increase the likelihood of an earnings estimate. Corporate governance factors that may decrease the frequency of management forecasts include the threat of competitor entry or a decrease in the percentage of the voting stock owned by management (Clarkson *et al.* [1992] and Ruland *et al.* [1990]).

Another possible reason for management to voluntarily disclose information is to influence the cost of equity. Botosan [1997] examined the cost of equity capital and voluntary disclosure and found that for smaller firms with less analyst following, there was a lower cost of equity capital for those firms that voluntarily disclosed background information, historical results, key non-financial statistics, projected information or management discussion and analysis in the annual report.

Additional literature addresses the issue of accuracy and bias of management forecasts. Ajinkya and Gift [1984]; Pownall and Waymire [1989]; and Waymire [1984] examined the stock price effect and the information content of management forecasts. They found that management forecasts provided the market with management's expected beliefs of the firm's future earnings. Each of these studies found that management forecasts provided information to the market and that the stock price moved in the direction of the news. That is, good news resulted in positive stock price movements, and bad news resulted in negative stock price movements. Ajinkya and Gift [1984] also indicated that management forecasts were slightly biased.

Waymire [1986] and Hassell and Jennings [1986] examined the accuracy of management's forecasts as compared to analysts' forecasts and found that management's forecast are more accurate than prior analysts' forecast. Hassell *et al.* [1988] found that analysts revised their forecast once management provided the information, and Imhoff [1978] found that analysts' forecasts are more accurate for companies that provided management forecasts. Together these studies provide evidence that management's forecasts are being used by analysts and provide information to the market. Thus, managers have a reasonable basis for believing that providing earnings forecasts would be an effective mechanism for convincing shareholders to approve a merger.

One mechanism for management to provide a better earnings forecast is to utilize earnings management. Christie and Zimmerman [1994]; DeAngelo [1988]; Grossman and Hart [1980]; Groff and Wright [1989]; and Grossman and Hart [1981] found that target firm managers make more income increasing accounting choices than their non-target counterparts. Erickson and Wang [1999] found evidence that bidding firms overstate their earnings reports in the quarter preceding a stock swap announcement and indicate that the market expects this overstatement and discounts the stock price accordingly.

Brennan [1999] examined the voluntary disclosure of profit forecasts by target firms in the UK. The bids were broken into three categories: friendly bids, hostile bids, or competing bids. Brennan [1999] then combined hostile and competing bids into one category and called this category contested bids. His study determined that there were different motivations between the two types of bids. In friendly bids, the bidder may require the disclosure from the target firm and the earnings estimates are generally used to justify managements' recommendation to the shareholders, while in contested bids, management of the target firm discourages completion of the merger by disclosing information that would indicate the shares of the target firm are more valuable than the bid price or by indicating that existing management would be better at running the target firm than the bidder.

While Brennan [1999] examined information prior to the announcement, the current study extends the literature by examining the financial and corporate governance characteristics and voluntary disclosure at the time of the proxy-prospectus. The proxy-prospectus is filed after the merger has been announced and after the boards of directors and management of the two firms have already agreed upon the merger.

3. HYPOTHESES DEVELOPMENT

The proxy-prospectus of the merging firms include mandatory information such as merger consideration, voting rights, and pro forma financial statements as if the two firms had merged at the end of the previous year. Additionally, the proxy-prospectus may include some forward-looking information such as forecasted EPS or forecasted PE Ratio of the combined firm. These financial estimates are voluntary and are not provided in all proxy-prospectus filings. The current study examines the firms that provide this voluntary information to determine whether the information contributes to the success of completing a merger, what types of firms provide the voluntary information, is the voluntary information biased, and what types of firms provide more accurate information.

3.1 Voluntary Disclosure and Merger Success

At the time of the proxy-prospectus, the boards of directors and management of the two firms have already agreed on the terms for the completion of the merger or acquisition and now have an incentive to provide the shareholders information needed for their approval of the announced merger. The first step in this study is to investigate whether or not the voluntary disclosure of earnings estimates increases the likelihood of a merger being completed. Additionally, the financial characteristics of the bidder and target firms are investigated to determine their effect on merger success.

Brennan [1999] broke bids into three categories: friendly bids, hostile bids, and competing bids and combined hostile and competing bids into one category and found that mergers were less likely to be completed when they were hostile or competing bids than when they were friendly bids. Additionally, Andrade *et al.* [2001] found that larger firms that are in the same industry are more likely to complete a merger.

Other factors that may increase the likelihood of the merger being completed are whether the bidder firm can influence the decisions of the target firm or if there is a high price premium paid to the target. One way for the bidder firm to influence the decision of the target firm is for the bidder firm to be significantly larger than the target firm making it difficult for the target firm to vote against the merger. One example of the bidder firm being larger than the target firm is the IBM - Rational Software merger where IBM had over 50 times the total assets of Rational Software.

If management has an incentive to make sure that the merger is approved, then management may use the voluntary disclosure of earnings estimates as a mechanism to persuade stockholders to vote in favor of the merger. Based on the above, the first hypothesis is stated in the alternative format:

H1a: Voluntary disclosure of earnings estimates increases the likelihood that a merger will be completed.

Additionally, the financial characteristics of the bidder and target firms may affect whether or not a merger is completed. Firms with stronger financial characteristics may increase shareholder confidence, which may increase the likelihood of a merger being completed. Alternatively, shareholders of stronger firms may be less likely to approve a merger if they perceive the other firm as weaker. Another explanation could be that shareholders of firms with weaker financial characteristics are looking for ways to strengthen the firm. One possible way to strengthen the firm is by merging with another firm. Merging with another firm increases market share and decreases costs by creating synergy between the two firms (Ghosh 2004). Utilizing this rationalization, firms with weaker financial characteristics may be more likely to complete the merger.

Based on the alternative reasoning provided above, the following non-directional set of hypotheses is provided:

H1b: There is an association between the financial strength of the bidder firm and the likelihood of the merger being completed.

H1c: There is an association between the financial strength of the target firm and the likelihood of the merger being completed.

Figure 2 reflects the timeline relationship of hypothesis one with the events associated with a typical merger or acquisition. The next section discusses the characteristics of firms that voluntarily disclose financial information.

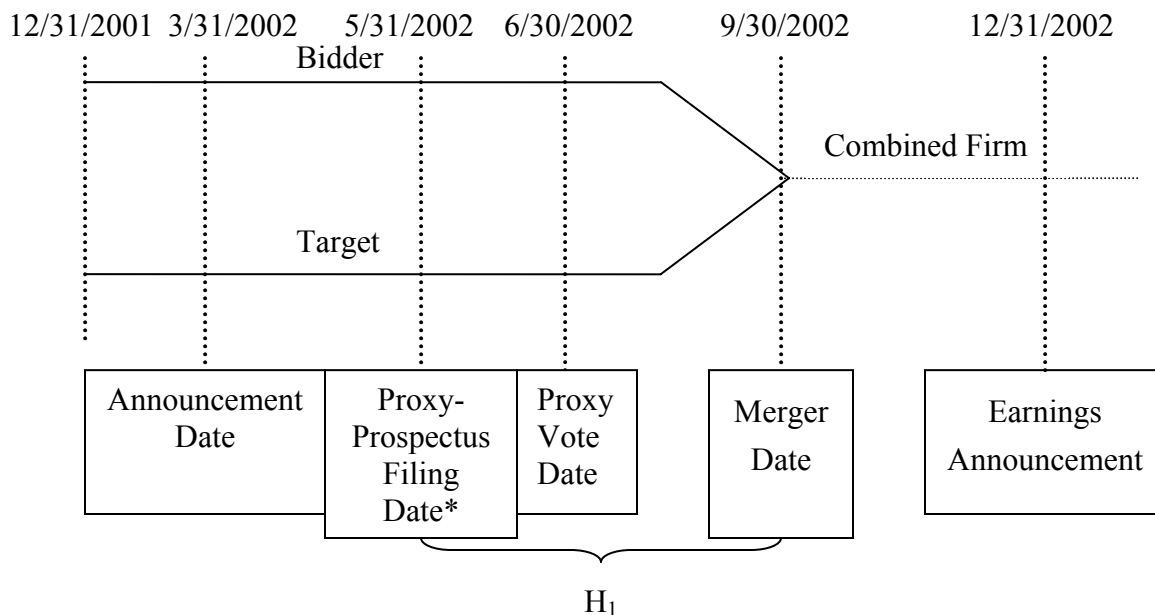


Figure 2: Timeline relationship of hypothesis one with the events associated with a typical merger or acquisition (using hypothetical dates)

*Firms provide a mandatory pro forma financial statement as if the firms had merged on 12/31/2001 and may voluntarily provide forecasted EPS or PE ratios of the combined firm as of 12/31/2002

3.2 Characteristics of Firms that Voluntarily Disclose Earnings Estimates

As previously discussed, management has an incentive to complete the merger, and firms have a choice of whether or not to voluntarily disclose forward-looking information to their shareholders in the proxy-prospectus. The current study compares the financial and corporate governance characteristics of firms that choose to voluntarily disclose information to the characteristics of firms that choose not to voluntarily disclose information in the proxy-prospectus.

There are several firm characteristics that may increase voluntary disclosure. Lang and Lundholm [2000] and Myers and Majluff [1984] reported an increase in disclosure during the time of an equity offering. The increased disclosure provided hype which led to a lower cost of capital. Additionally, Healy and Palepu [2001] included capital market transactions and corporate control contests as two reasons for managers to voluntarily disclose information. The current study examines mergers and acquisitions (one example of a capital market transaction), to determine what firm characteristics may cause managers to disclose voluntary information.

Cox [1985]; Imhoff [1978]; Ruland [1979]; and Waymire [1985] indicated that firms that issue forecasts are larger and have smoother, less volatile earnings than firms that did not issue forecasts. Clarkson *et al.* [1992] found that audit quality, underwriter prestige, and terms of the offering were all reasons that firms may issue forecasts. Additionally, Andrade *et al.* [2001], Gort [1969], Jensen [1986], Jensen [1993], and Botosan and Harris [2000] found that firms in the same industry were more likely to provide earnings forecasts.

Ruland *et al.* [1990] and Frankel *et al.* [1995]) found that firms that had previously provided earnings forecasts are more likely to issue earnings forecasts in the

future. Of course, firms that have never issued an earnings forecast may issue an earnings forecast in the joint proxy-prospectus, and conversely, firms that have issued an earnings forecast in every year may not provide a forecast in the joint proxy-prospectus. Without examining the future success of the merger, determining if providing an earnings forecast is a positive or negative signal is very difficult. In this study, the prior earnings forecasts are simply used as a control, since previous studies have found that firms that have issued earnings forecasts in the past are more likely to issue earnings forecasts in the future.

The current study examines the financial and corporate governance characteristics of both the bidder and target firms that choose to voluntarily disclose the earnings estimates as opposed to those firms that choose not to disclose any earnings estimates to their shareholders in the proxy-prospectus during a typical merger or acquisition. Possibly, firms with stronger financial and corporate governance characteristics are willing to provide more disclosure to reduce the asymmetric information between management and shareholders or those firms with weaker characteristics may disclose more to persuade its shareholders to vote in favor of the merger. The current study identifies “weak” characteristics to include either poor financial performance or weak corporate governance. Poor financial performance is also the primary predictor of litigation, which Healy and Palepu [2001] identify as an important determinant of managers’ disclosure decisions.

Dating back to Ball and Brown [1968] and Beaver [1968], scholars have found that accounting has provided valued information to the market. Diamond and Verrecchia [1991] and Kim and Verrecchia [1994] argue that voluntary disclosure accomplishes this same feat. By providing additional information to the shareholders, the decreased

information asymmetry provides investors with more confidence in the value of the firm. If additional information increases shareholder confidence in the value of the firm, stronger firms may voluntarily disclose information to their shareholders to decrease the information asymmetry between management and shareholders.

Another reason management may voluntarily disclose forward-looking information in a merger and acquisition setting is to “sell” the merger to the shareholders. If management is using information to “sell” the merger, weaker firms may provide optimistic forecasts to persuade shareholders to vote in favor of the merger. While there is a cost to providing optimistic forecasts, Erickson and Wang [1999] find evidence that acquiring firms overstate earnings in the quarter prior to a stock swap, and that the market anticipates the overstated earnings and discounts the firm’s stock price to compensate for the inflated earnings.

Jensen and Meckling [1976] pointed out that agency problems exist when the incentives of the owners and management are not aligned. One example of an agency problem that may exist in a merger and acquisition setting is a golden parachute for the CEO of the target firm. Management is concerned about their post-merger income and job prospects while shareholders are interested in the value of their shares. While one can argue that contracting could cause golden parachutes to be value increasing, in the case of a merger or acquisition, a golden parachute provides management with an incentive to provide information that may persuade shareholders to vote in favor of the merger.

If management is trying to “sell” the merger to its shareholders, then firms with weaker financial performance as measured by Altman’s Z-Score and weaker corporate governance characteristics as measured by the G-Index will be more likely to voluntarily

disclose earnings estimates. If firms with stronger financial and corporate governance characteristics voluntarily disclose earnings estimates, the finding suggests that stronger firms provide more information to reduce information asymmetry between management and shareholders. Given the alternative reasoning provided above, the following set of non-directional hypotheses is provided:

H2a: There is an association between the financial strength of the bidder firm and the decision of the merging firms to jointly choose to voluntarily disclose earnings estimates.

H2b: There is an association between the financial strength of the target firm and the decision of the merging firms to jointly choose to voluntarily disclose earnings estimates.

H2c: There is an association between the strength of the corporate governance of the bidder firm and the decision of the merging firms to jointly choose to voluntarily disclose earnings estimates.

H2d: There is an association between the strength of the corporate governance of the target firm and the decision of the merging firms to jointly choose to voluntarily disclose earnings estimates.

H2e: There is an association between target firms that have CEO golden parachutes and the decision of the merging firms to jointly choose to voluntarily disclose earnings estimates.

Figure 3 reflects the timeline relationship of hypotheses two with the events associated with at typical merger or acquisition. The next section discusses earnings estimate bias.

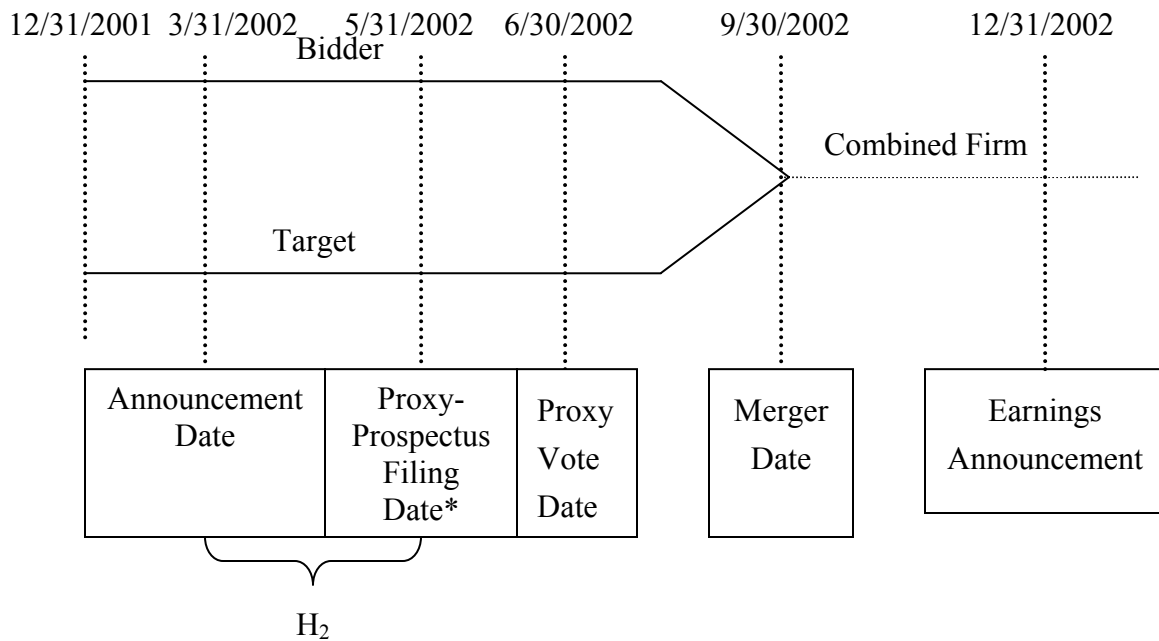


Figure 3: Timeline relationship of hypothesis two with the events associated with a typical merger or acquisition (using hypothetical dates)

*Firms provide a mandatory pro forma financial statement as if the firms had merged on 12/31/2001 and may voluntarily provide forecasted EPS or PE ratios of the combined firm as of 12/31/2002

3.3 Earnings Estimate Bias

At the time of the proxy-prospectus, management of both the bidder and target firms have already agreed upon the terms of the merger. Management now has an incentive to provide information that will help persuade shareholders to vote in favor of the merger. In the proxy-prospectus, firms typically voluntarily disclose forward-looking earnings information in one of two ways: an EPS forecast or a projected PE Ratio of the new firm. The EPS provides earnings per share of the company for the previous accounting period and the PE Ratio is used to measure investors' expectation of higher earnings growth. Since EPS and PE Ratio are two very different measures of financial strength, the mergers are separated into two samples and examined separately.

Firms may provide optimistic forecasts to paint a more favorable picture of the completed merger or firms may provide more information to reduce information asymmetry. An optimistically biased earnings estimate provides evidence that management uses voluntary disclosure to persuade shareholders to vote in favor of the merger while an unbiased earnings estimate provides evidence that management provides information to reduce information asymmetry.

While EPS and PE Ratios are very different estimates, both are used by investors to determine the strength of the firm. Since it is considered better for these two measures to be high, similar results are anticipated for both samples. Based on the above, the following set of hypotheses is tested:

H3a: For voluntarily disclosing firms, the EPS forecast of the new firm is positively biased.

H3b: For voluntarily disclosing firms, the PE Ratio forecast of the new firm is positively biased.

This study now examines the financial and corporate governance characteristics of the firms that voluntarily disclose earnings forecasts. While prior literature focuses on characteristics that increase forecast accuracy, the expectation that some of these same characteristics will decrease forecast bias. The size of the firm, whether or not the firm has issued previous earnings forecasts, auditor quality, and underwriter prestige are characteristics that increase the accuracy of the forecasts (Clarkson *et al.* [1992] and Clarkson [2000]). Additionally, forecasts that are issued closer to the end of the year provide more accurate forecasts (Waymire [1985] and McNichols [1989]).

Firms that are stronger financially and have stronger corporate governance characteristics should have less incentive to provide forecasts that are biased. Based on

the above discussion, the following set of hypotheses is tested:

H3c: Lower EPS forecast bias of the combined firm is associated with merging firms that have stronger financial characteristics.

H3d: Lower EPS forecast bias of the combined firm is associated with merging firms that have stronger corporate governance characteristics.

H3e: Lower PE Ratio forecast bias of the combined firm is associated with merging firms that have stronger financial characteristics.

H3f: Lower PE Ratio forecast bias of the combined firm is associated with merging firms that have stronger corporate governance characteristics.

Figure 4 reflects the timeline relationship of hypothesis three with the events associated with a typical merger or acquisition. The next section discusses the characteristics of firms with greater forecast accuracy.

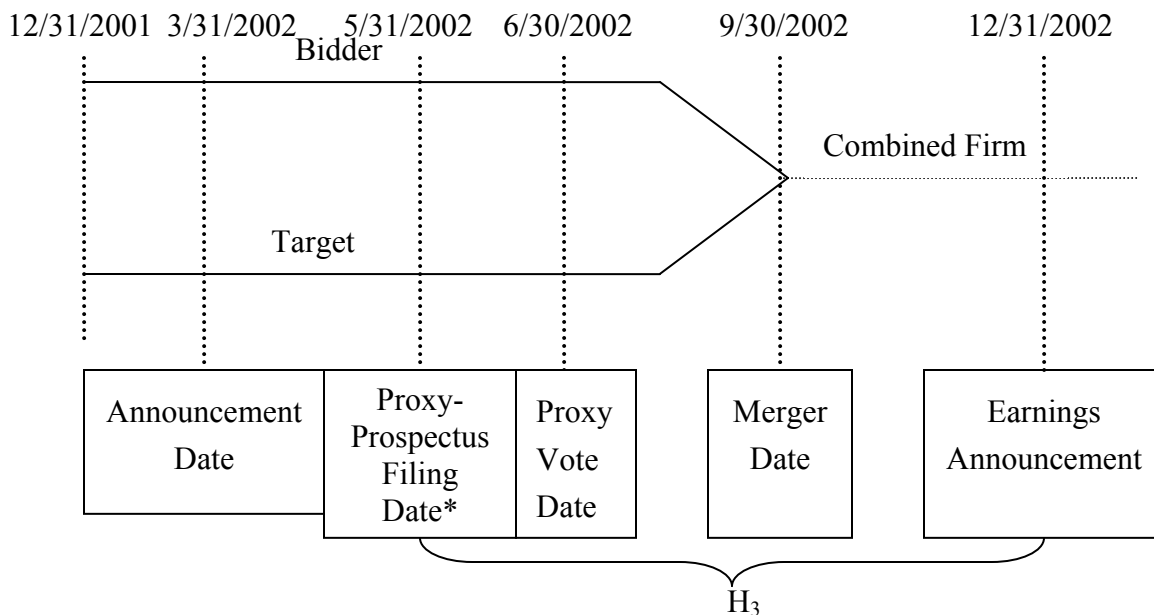


Figure 4: Timeline relationship of hypothesis three with the events associated with a typical merger or acquisition (using hypothetical dates)

*Firms provide a mandatory pro forma financial statement as if the firms had merged on 12/31/2001 and may voluntarily provide forecasted EPS or PE ratios of the combined firm as of 12/31/2002

3.4 Characteristics of Firms with Greater Forecast Accuracy

Once the firms that have voluntarily disclosed earnings estimates to their shareholders have been identified, the characteristics that are associated with greater forecast accuracy will be examined. Some of the same characteristics that increase the likelihood of providing forecasts will also increase the accuracy of the forecasts. For instance, the size of the firm, whether or not the firm has issued previous earnings forecasts, auditor quality, and underwriter prestige are all characteristics that may increase the accuracy of the forecasts (Clarkson *et al.* [1992] and Clarkson [2000]). Auditors are involved in the entire merger and acquisition process and provide a monitoring service that should increase the validity of all information provided in the proxy-prospectus. Additionally, Waymire [1985] and McNichols [1989] indicated that management forecasts are more accurate as they are issued closer to year end creating the need to control for the amount of time between the forecast date and the actual earnings date.

Stronger firms should provide better information to their shareholders. If this rationale is true, firms with stronger financial and corporate governance characteristics will provide more accurate forecasts. Based upon the above, the following set of hypotheses is tested (stated in the alternative form):

H4a: EPS forecast accuracy of the combined firm is associated with merging firms that have stronger financial characteristics.

H4b: EPS forecast accuracy of the combined firm is associated with merging firms that have stronger corporate governance characteristics.

H4c: PE Ratio forecast accuracy of the combined firm is associated with merging firms that have stronger financial characteristics.

H4d: PE Ratio forecast accuracy of the combined firm is associated with merging firms that have stronger corporate governance characteristics.

Figure 5 reflects the timeline relationship of hypothesis four with the events associated with a typical merger or acquisition. The next section provides an overview of the hypotheses and how they relate to one another.

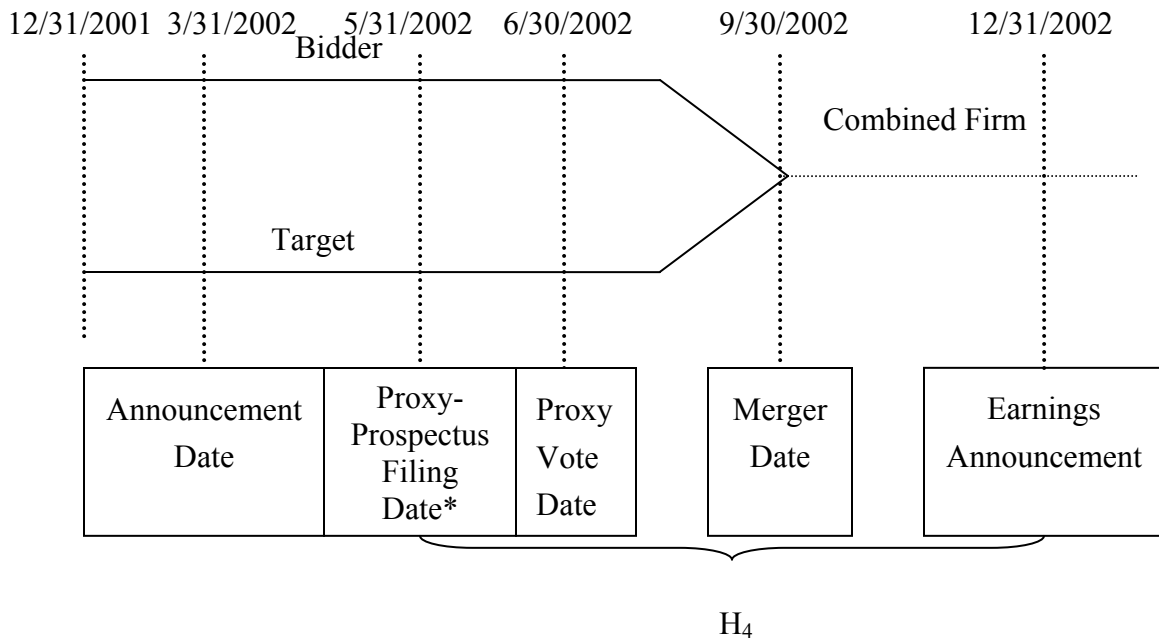


Figure 5: Timeline relationship of hypothesis four with the events associated with a typical merger or acquisition (using hypothetical dates)

*Firms provide a mandatory pro forma financial statement as if the firms had merged on 12/31/2001 and may voluntarily provide forecasted EPS or PE ratios of the combined firm as of 12/31/2002

3.5 Overview of Hypotheses

At the time of the proxy-prospectus, the boards of directors and management for both firms have decided to go forward with the merger and have agreed on the post-merger management compensation. In some instances, management provides voluntary earnings estimates in the proxy-prospectus. Two reasons that management may provide

this voluntary information are 1) to provide an optimistic view of the new firm or 2) to provide information to reduce the information asymmetry between management and stockholders.

The first set of hypotheses examines firms that have decided to voluntarily disclose or not disclose earnings estimates. Since management has an incentive to complete the merger, disclosing earnings estimates should be used to increase the likelihood of the merger being completed. Additionally, financial characteristics of the bidder and target firms are examined to determine if firms that have stronger or weaker financial characteristics are more likely to complete the merger.

The second set of hypotheses moves one step further by examining the characteristics of those firms that choose to voluntarily disclose as opposed to those firms that choose not to voluntarily disclose earnings estimates. Do firms with weaker financial and corporate governance characteristics need to voluntarily disclose information to show that the merger benefits the shareholders or are firms with stronger financial and corporate governance characteristics just providing as much information as possible to reduce information asymmetry between management and shareholders?

The third set of hypotheses determines if the earnings forecasts are biased. If firms with weaker financial and corporate governance characteristics are trying to persuade shareholders to vote in favor of the merger, they may need to provide an earnings forecast that paints a bright future for the combined firm. One way to paint a more favorable picture is to provide an optimistically biased earnings forecast. Additionally, the financial and corporate governance characteristics of the bidder and target firm are examined to determine what factors may decrease forecast bias.

The fourth set of hypotheses examines those financial and corporate governance characteristics of the firms that voluntarily provide earnings forecasts to determine what types of firms provide more accurate earnings forecasts.

Table 1 provides a summary of the research hypotheses and chapter 4 describes the sample and defines the variables used to test the above hypotheses. The next section of the paper explains the research methodology employed.

Table 1 - Summary of Hypotheses

H1a: <i>Voluntary disclosure of earnings estimates increases the likelihood that a merger will be completed.</i>
H1b: <i>There is an association between the financial strength of the bidder firm and the likelihood of the merger being completed.</i>
H1c: <i>There is an association between the financial strength of the target firm and the likelihood of the merger being completed.</i>
H2a: <i>There is an association between the financial strength of the bidder firm and the decision of the merging firms to jointly choose to voluntarily disclose earnings estimates.</i>
H2b: <i>There is an association between the financial strength of the target firm and the decision of the merging firms to jointly choose to voluntarily disclose earnings estimates.</i>
H2c: <i>There is an association between the strength of the corporate governance of the bidder firm and the decision of the merging firms to jointly choose to voluntarily disclose earnings estimates.</i>
H2d: <i>There is an association between the strength of the corporate governance of the target firm and the decision of the merging firms to jointly choose to voluntarily disclose earnings estimates.</i>
H2e: <i>There is an association between target firms that have CEO golden parachutes and the decision of the merging firms to jointly choose to voluntarily disclose earnings estimates.</i>
H3a: <i>For voluntarily disclosing firms, the EPS forecast of the new firm is positively biased.</i>
H3b: <i>For voluntarily disclosing firms, the PE Ratio forecast of the new firm is positively biased.</i>
H3c: <i>Lower EPS forecast bias of the combined firm is associated with merging firms that have stronger financial characteristics.</i>
H3d: <i>Lower EPS forecast bias of the combined firm is associated with merging firms that have stronger corporate governance characteristics.</i>
H3e: <i>Lower PE Ratio forecast bias of the combined firm is associated with merging firms that have stronger financial characteristics.</i>
H3f: <i>Lower PE Ratio forecast bias of the combined firm is associated with merging firms that have stronger corporate governance characteristics.</i>
H4a: <i>EPS forecast accuracy of combined firm is associated with merging firms that have stronger financial characteristics.</i>
H4b: <i>EPS forecast accuracy of combined firm is associated with merging firms that have stronger corporate governance characteristics.</i>
H4c: <i>PE Ratio forecast accuracy of combined firm is associated with merging firms that have stronger financial characteristics..</i>
H4d: <i>PE Ratio forecast accuracy of combined firm is associated with merging firms that have stronger corporate governance.</i>

4. RESEARCH METHODOLOGY

This section of the paper describes the sample selection procedures used to arrive at the final samples for the hypotheses, the variable definitions, and the research design employed to test each set of hypotheses.

4.1 Sample and Variable Definitions

4.1.1 Sample Selection

The sample chosen for this study was collected from Thompson Financial's, Securities Data Corp. (SDC) database and includes mergers with a transaction value of \$1,000,000 or more that were announced during the years 2002 and 2003. Tudor and Mohtadi [1997] compared the SDC database with five print databases and found that every transaction of \$1,000,000 or more that was listed in the five print databases was listed in the SDC database.² This study chooses \$1,000,000 as a minimum transaction value to provide a more manageable data set by eliminating the smaller firms that may not have data readily available and by reducing the number of mergers that may be considered immaterial. These restrictions provide a beginning sample of 3,077 total mergers as opposed to 16,295 total mergers without these restrictions. The years 2002 and 2003 were used so that the study could use the two most recent years that actual earnings could be collected for up to three years after the merger announcement. Three years after the merger announcement is necessary since some of the earnings forecasts are provided three years in advance. This sample reduction provides a beginning sample of 2,901 announced mergers that were completed and 176 mergers that were withdrawn.

² The print databases used were Mergers and Acquisitions, the Corporate Growth Report, the Merger Yearbook, the Merger and Acquisition Sourcebook, and SDC's Worldwide M&D Database

Using the 3,077 (2,901 completed and 176 withdrawn) announced mergers in Thompson Financial's SDC database for the years 2002 and 2003, SEC's Edgar database was searched to find 139 completed mergers and 8 withdrawn mergers that had filed a joint proxy-prospectus (form S-4).

The proxy-prospectus includes mandatory information such as merger consideration; golden parachute payment details; and pro forma financial statements of the merged entity as if the merger had occurred in the year prior to merger announcement. Additionally, 57 of the mergers provided other voluntary information including projected EPS estimates or a projected PE Ratio of the combined firm.

4.1.2 Hypotheses One Sample

The first set of hypotheses examines factors that may increase the likelihood of a merger being completed. Of the 147 (139 completed and 8 withdrawn) mergers in the sample, the premium paid for 22 mergers was not calculated due to either the bidder or target firms not being traded on a major stock exchange. This sample reduction brings the sample for the first set of hypotheses to 125 mergers, including 117 completed mergers and 8 withdrawn mergers.

Table 2 – Hypotheses One Sample Selection Procedures

Reduced Sample	147 Mergers
Less: Data missing to compute the premium paid	(22) Mergers
Less: Data missing to compute Bidder Z-Score (BFIN)	(17) Mergers
Less: Data missing to compute Target Z-Score (TFIN)	<u>(16) Mergers</u>
Equals Hypotheses One Final Sample	<u>92 Mergers</u>

Of the 125 mergers, the financial strength variables (BFIN and TFIN)³ could not be calculated for 39 mergers, thus reducing the final sample for the first set of hypotheses to 92 mergers. Table 2 provides information on the sample selection for the first set of hypotheses. The following section examines the sample selection procedures used to test the second set of hypotheses.

4.1.3 Hypotheses Two Sample

The second set of hypotheses examines the characteristics of firms that choose to voluntarily disclose earnings estimates. The financial strength variables (BFIN and TFIN) could not be calculated for 39 mergers while the corporate governance variables BGINDEX and TGINDEX could not be calculated for an additional 72 mergers. The final sample for the second set of hypotheses includes 28 mergers in which all variables could be calculated. Table 3 provides information on the final sample for the second set of hypotheses. The next section examines the sample selection procedures used to test the third and fourth sets of hypotheses.

Table 3 – Hypotheses Two Sample Selection Procedures

Reduced Sample	147 Mergers
Less: Mergers withdrawn	(8) Withdrawn Mergers
Equals Total Completed Mergers	139 Completed Mergers
Less: Data missing to compute Bidder Z-Score (BFIN)	(19) Mergers
Less: Data missing to compute Target Z-Score (TFIN)	(20) Mergers
Less: Data missing for BGINDEX	(16) Mergers
Less: Data missing for TGINDEX	(56) Mergers
Equals Hypotheses Two Final Sample	28 Mergers

³ The variable BFIN is measured as Altman's Z-score for the bidder firm and the variable TFIN is measured as Altman's Z-score of the target firm. These variables are further explained in section 4.2.2.1.

4.1.4 Hypotheses Three and Four Samples

To examine the bias and accuracy of the earnings forecasts, the sample is limited to companies choosing to provide EPS estimates or PE Ratio estimates for the merged entity. Of the sample of 139 completed mergers, there were a total of 69 forecasts from 57 mergers. Eleven mergers provided forecasts for more than one year, and one merger provided both a forecasted EPS and a forecasted PE Ratio. For the eleven firms that provided forecasts for more than one year, the forecast closest to the announcement date is used. For the one firm that provided an EPS and a PE Ratio forecast, both forecasts are examined bringing the total EPS forecasts to 30 and the total PE Ratio forecasts to 28. These 58 forecasts are used to determine if the EPS and PE Ratio forecasts are biased. Panel A of table 4 presents information on the final sample selection procedures for hypotheses **H3a** and **H3b**.

Once the tests establish whether or not the forecasts are biased, the study then focuses on the firm characteristics that may decrease earnings forecast bias. The 30 mergers that produced EPS forecasts are examined to determine the firm characteristics that may decrease EPS forecast bias. This sample begins with 30 mergers, of which, the financial strength of the bidder could not be calculated for 4 mergers and the financial strength of the target firm could not be calculated for an additional 6 mergers. Of the twenty mergers that are remaining, the G-index of the bidder firm was unavailable for 1 firm. The final sample used to test hypotheses **H3c**, **H3d**, **H4a**, and **H4b** includes 19 mergers. There were 11 additional mergers in which the G-index of the target firm was unavailable. Including the variable TGINDEX would have reduced the sample to 8 mergers for a model that includes 12 variables and therefore, the variable TGINDEX is omitted from this examination. Panel B of table 4 presents information on the final

sample to tests hypotheses **H3c**, **H3d**, **H4a**, and **H4b**.

Of the 28 mergers that produced PE Ratio forecasts, there were 7 mergers in which BFIN could not be calculated and an additional 4 mergers in which TFIN could not be calculated. The sample reduction produces a final sample of 17 mergers used to test hypotheses **H3e**, **H3f**, **H4c**, and **H4d**. There were an additional 9 mergers in which the G-index of the target firm was unavailable, therefore, the variable TGINDEX is omitted from this examination. Panel C of table 4 presents information on the final sample to test hypotheses **H3e**, **H3f**, **H4c**, and **H4d**.

The next section of the paper defines the variables used to test each set of hypotheses.

Table 5 - Hypotheses Three and Four Samples Sample Selection Procedures

<i>Panel A – Forecast Bias Sample</i>	
Reduced Sample: Completed Mergers	139 Mergers
Less: Mergers that did not disclose earnings estimates	(82) Mergers
Equals Total number of mergers that disclosed earnings estimates	57 Mergers*
Total number of mergers that provided EPS forecasts	30 Mergers
Total number of mergers that provided PE Ratio forecasts	28 Mergers
<i>Panel B – Characteristics of firms that provide less biased or more accurate EPS Forecasts</i>	
Total number of mergers that provided EPS Forecasts	30 Mergers
Less: Data missing to compute BFIN	(4) Mergers
Less: Data missing to compute TFIN	(6) Mergers
Less: Data missing for BGINDEX	(1) Merger
Equals Hypotheses H3c, H3d, H4a, and H4b final sample	19 Mergers
<i>Panel C – Characteristics of firms that provide less biased or more accurate PE Ratio Forecasts</i>	
Total number of mergers that provided EPS Forecasts	28 Mergers
Less: Data missing to compute BFIN	(7) Mergers
Less: Data missing to compute TFIN	(4) Mergers
Equals Hypotheses H3e, H3f, H4c, and H4d final sample	17 Mergers

* 1 merger provided both an EPS forecast and a PE Ratio forecast creating a total of 58 forecasts from 57 mergers.

4.2 Variable Definitions

4.2.1 Dependent Variables

4.2.1.1 Merger Completion

To test the first set of hypotheses, the dependent variable (COMPLETE) is measured as the likelihood of a merger being completed. This variable is gathered from Thompson Financial's SDC Database and is a dichotomous variable where the variable is equal to 1 if the merger is completed and 0 if the merger is withdrawn.

4.2.1.2 Disclosure

To test the second set of hypotheses, the dependent variable (DISC) is measured as the likelihood of a merger voluntarily disclosing an earnings estimate. This variable is collected from the joint proxy-prospectus (form S-4) and is a dichotomous variable where the variable is equal to 1 if the forecasted EPS or the forecasted PE Ratio is voluntarily disclosed in the joint proxy-prospectus and 0 otherwise. Additionally, this variable is a dependent variable used to test hypothesis **H1a**.

4.2.1.3 Forecast Error

Forecast error is calculated using the forecasted EPS or PE Ratio collected from the joint proxy-prospectus and the actual EPS or PE Ratio gathered from Standard and Poor's COMPUSTAT annual files. The variable FE is then calculated as Forecast Error $(FE) = (\text{Forecasted} - \text{Actual}) / |\text{Actual}|$. The forecast error is the dependent variable in the third set of hypotheses and the absolute value of the forecast error is the dependent variable in the fourth set of hypotheses.

4.2.2 Independent Variables

4.2.2.1 Financial Strength Measurement

There have been several bankruptcy prediction models introduced into the literature. Altman [1968], Ohlson [1980], and Zmijewski [1984] are a few of the more popular bankruptcy prediction models used in accounting research. While these models are traditionally used to predict the probability of bankruptcy, this study uses the model to measure stronger or weaker financial characteristics. Since this study is not using the model to predict bankruptcy and is simply using it as a measure of financial strength, there should be no preference as to which model is used.

To examine the financial characteristics of firms that provide voluntary earnings estimates, this study uses the Altman's Z-Score (Altman [1968]) as a proxy for strong financial characteristics. Altman's Z-score is a bankruptcy prediction model that uses several measures of financial distress to calculate the probability of bankruptcy and is calculated using balance sheet and stock return data gathered from Standard and Poor's COMPUSTAT annual files. The Z-Score is a weighted average of several accounting ratios and is calculated using the formula:

$$\text{Z-Score} = (3.3 * \text{EBIT/Total Assets}) + (0.99 * \text{Net Sales/Total Assets}) + (0.6 * \text{Market Value of Equity/Total Liabilities}) + (1.2 * \text{Working Capital/Total Assets}) + (1.4 * \text{Retained Earnings/Total Assets})$$

Where,

EBIT = Earnings Before Interest and Taxes

Market Value of Equity = Stock Price * # Common Shares Outstanding

Working Capital = Current Assets – Current Liabilities (1)

A higher Z-Score indicates a firm is better off financially.

This study does not intend to declare these firms as good or bad, but uses Altman's model as an indicator of financial strength to determine if a firm is stronger or

weaker financially. The variable BFIN is Altman's Z-score for the bidder firm while the variable TFIN is Altman's Z-score of the target firm. BFIN and TFIN are continuous variables and are the variables of interest in all four sets of hypotheses.

4.2.2.2 Corporate Governance Measurement

The independent variables BGINDEX and TGINDEX are continuous variables collected from Thompson Financial's, Investor Responsibility Research Center's (IRRC) corporate governance database for the bidder and target firms respectively. These are variables of interest for the second, third, and fourth sets of hypotheses and proxy for the strength of corporate governance.

Gompers *et al.* [2003] calculate the G-Index using 22 firm level provisions and 6 state provisions listed in the IRRC database. Eight of these provisions overlap creating a maximum G-Index of 24. Gompers *et al.* [2003] break the provisions into 5 groups: delay tactics, director protection, voting rights, other defenses, and state laws. One point is added to the firm's G-Index for each provision that restricts shareholder rights. A lower G-Index indicates a democracy controlled firm, and therefore, stronger corporate governance.

The foundation for strong corporate governance is the ability of the board of directors to act independently of management. Other measures of corporate governance include board of director size, percentage of outside directors, control of the board by the CEO or CFO, audit committee characteristics, and the existence of large block shareholders. Each of these measures serves to protect shareholders' rights by forcing the board of directors to act independently of management. This study uses the G-Index to proxy for strong corporate governance since it was designed to proxy for shareholders' rights.

4.2.2.3 Golden Parachute

To test hypotheses **H2e**, the independent variable (PCHUTE) is a dichotomous variable where the variable is equal to 1 if the target firm's CEO has a golden parachute in his contract. This variable is gathered by searching the joint proxy-prospectus (form S-4) to determine whether or not the CEO has golden parachute.

The next section of the paper discusses the control variables included in the models.

4.2.3 Control Variables

4.2.3.1 Size

This study uses the natural logarithm of total assets to proxy for firm size. The variable BSIZE proxies for bidder size while the variable TSIZE proxies for the size of the target. The total assets of the firm are gathered for the year prior to the merger announcement from Standard and Poor's COMPUSTAT annual files. These variables are control variables in all four sets of hypotheses.

4.2.3.2 Influence

The variable INFLUENCE is calculated as the total assets of the bidder firm/the total assets of the target firm. As discussed above, the total assets of both firms are gathered for the year prior to the merger from Standard and Poor's COMPUSTAT annual files. This variable is a control variable in the first set of hypotheses and is a proxy for the amount of control the bidder firm has over the target firm.

An alternative measurement of influence is the ratio of BSIZE/TSIZE. Each measurement will be examined to test sensitivity to the specification.

4.2.3.3 Premium

The variable PREMIUM is defined as Offer Price / Target Stock Price_(Announcement Date-1) – 1. This measure is collected from Thompson Financial’s SDC database and is a control variable for the first set of hypotheses.

4.2.3.4 Friendly

As in Brennan [1999], this variable is a dichotomous variable that equals 1 if the merger was deemed friendly and 0 otherwise. Thompson Financial’s SDC database reports a deal as friendly if the target firm’s board of directors recommends the merger. The variable FRIENDLY is a control variable for the first set of hypotheses.

4.2.3.5 Industry

As in Andrade *et al.* [2001], the variable INDUSTRY is defined as a dichotomous variable that equals 1 if both the bidder and target firms have the same 2-digit industry (SIC) code and 0 otherwise. The SIC code is gathered from Thompson Financial’s SDC Database and is used as a control variable for the first two sets of hypotheses.

4.2.3.6 Audit

The variables BAUDIT and TAUDIT are dichotomous variables that equal one if the bidder or target firm uses a Big 4/5 auditor respectively. The names of the auditors were collected from the joint proxy-prospectus (form S-4) from the SEC’s EDGAR Database. These variables are control variables in all four sets of hypotheses.

4.2.3.7 Underwriter Reputation

The underwriter reputation is measured using a reputation ranking based on Carter and Manaster [1990] and Carter *et al.* [1998]. Carter and Manaster [1990] and Carter *et al.* [1998] calculate the reputation ranking by examining initial public offering announcements and assigning an integer rank, 0 to 9, for each underwriter in the

announcement according to its position. Using the names of the underwriters collected from the proxy-prospectus, a reputation ranking is assigned based on the rankings published in the Carter-Manaster Reputation Rankings for IPO Underwriters: 1980-2004.⁴ The variables BUWRITER and TUWRITER are control variables include in the second, third, and fourth sets of hypotheses.

4.2.3.8 Previous Earnings Forecasts

The variable EF is a dichotomous variable that equals 1 if either the bidder or target firm issued an earnings forecast in the year prior to the announcement. A search of each firm on Lexis-Nexis was used to determine if the firm issued an earnings forecast in the previous year. This is a control variable included in the second, third, and fourth sets of hypotheses.

4.2.3.9 Horizon

As in Waymire [1985], the variable HORIZON is the percentage of the year remaining between the forecasted earnings estimate and the actual earnings. The variable is continuous and is calculated as the number of days from the forecasted earnings to the actual earnings/365. This is a control variable in which forecast accuracy and bias should be less as the variable HORIZON decreases. This is a control variable included in the third and fourth sets of hypotheses.

Table 6 provides a summary of the variables and the next section describes the research design used to test each set of hypotheses.

⁴ Corwin and Schultz [2005] used the Carter-Manaster Reputation Rankings for IPO Underwriters when examining underwriter prestige.

Table 6 – List of Variables

<u>Variable</u>	<u>Description</u>	<u>Database</u>	<u>Hypotheses Used In</u>	<u>Expected Sign</u>
COMPLETE	Dichotomous variable equals 1 if the merger is completed, 0 otherwise	SDC	H1 Dependent Variable	
DISC	Dichotomous variable equals 1 if the firms provide forward-looking information (earnings or PE Ratios) of the combined firm, 0 otherwise	Form S-4	H1 Independent Variable H2 Dependent Variable	+
FE _{EPS}	Earnings Per Share Forecast Error. Calculated as: $ FE = (\text{Forecasted EPS} - \text{Actual EPS})/(\text{Actual EPS}) $	Form S-4 COMPUSTAT	H3 & H4 Dependent Variable	
FE _{PE}	PE Ratio Forecast Error – Calculated as: $ FE_{pe} = (\text{Forecasted PE Ratio} - \text{Actual PE Ratio})/(\text{Actual PE Ratio}) $	Form S-4 COMPUSTAT	H3 & H4 Dependent Variable	
BFIN	Bidder firm's Z-score as calculated using Altman's [1968] formula	COMPUSTAT	H1 H2 H3 H4	? ? + +
TFIN	Target firm's Z-score as calculated using Altman's [1968] formula	COMPUSTAT	H1 H2 H3 H4	? ? + +
BGINDEX	G-Index from bidder firm from Gompers <i>et al.</i> [2003]	IRRC	H2 H3 H4	? - -
TGINDEX	G-Index of target firm from Gompers <i>et al.</i> [2003]	IRRC	H2 H3 H4	? - -

Table 6 (continued)

<u>Variable</u>	<u>Description</u>	<u>Database</u>	<u>Hypotheses Used In</u>	<u>Expected Sign</u>
PCHUTE	Dichotomous variable equals 1 if the target firm's CEO has a golden parachute in their contract, 0 otherwise	Form S-4	H2	?
BSIZE	Natural Logarithm of the Bidder firm's total assets	COMPUSTAT	All	+
TSIZE	Natural Logarithm of the Target firm's total assets	COMPUSTAT	All	+
INFLUENCE	Bidder firm's total assets / Target firm's total assets	COMPUSTAT	H1	+
PREMIUM	(Offer Price / Target Stock Price (Announcement Date -1)) - 1	SDC	H1	+
FRIENDLY	Dichotomous variable equals 1 if the merger is friendly, 0 otherwise	SDC	H1	+
INDUSTRY	Dichotomous variable equals 1 if the bidder and target firms have the same SIC Code, 0 otherwise	SDC	H1	+
BAUDIT	Dichotomous variable equals 1 if the bidder firm uses a Big 4/5 auditor, 0 otherwise	Form S-4	H2 H3 H4	+
TAUDIT	Dichotomous variable equals 1 if the target firm uses a Big 4/5 auditor, 0 otherwise	Form S-4	H2 H3 H4	+
BUWRITER	Rank of the Bidder Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters	Form S-4	H2 H3 H4	+
TUWRITER	Rank of the Target Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters	Form S-4	H2 H3 H4	+

Table 6 (continued)

<u>Variable</u>	<u>Description</u>	<u>Database</u>	<u>Hypotheses Used In</u>	<u>Expected Sign</u>
EF	Dichotomous variable equals 1 if either the bidder or target firm issued earnings forecast in the previous period, 0 otherwise	Lexis-Nexis	H2 H3 H4	+ + +
HORIZON	# of days between earnings forecast and actual earnings / 365	Form S-4	H3 H4	- -

4.3 Research Design

4.3.1 Voluntary Disclosure and Merger Success

To test the prediction that voluntary disclosure is associated with the likelihood of a merger being completed and to examine the characteristics of the firms that are more likely to approve the merger, the following logistic regression model is used to test the first set of hypotheses:

$$\text{Prob (COMPLETE} = 1) = \beta_0 + \beta_1 \text{ DISC} + \beta_2 \text{ BFIN} + \beta_3 \text{ TFIN} + \beta_4 \text{ BSIZE} + \beta_5 \text{ TSIZE} + \beta_6 \text{ INDUSTRY} + \beta_7 \text{ FRIENDLY} + \beta_8 \text{ INFLUENCE} + \beta_9 \text{ PREMIUM} + \varepsilon \quad (2)$$

where,

COMPLETE	Dichotomous variable equals 1 if the merger is completed, 0 otherwise
DISC	Dichotomous variable equals 1 if the firms provide forward-looking information (earnings or PE Ratios) of the combined firm, 0 otherwise
BFIN	Bidder firm's Z-score as calculated using Altman's [1968] formula
TFIN	Target firm's Z-score as calculated using Altman's [1968] formula
BSIZE	Natural Logarithm of the Bidder firm's total assets
TSIZE	Natural Logarithm of the Target firm's total assets
INDUSTRY	Dichotomous variable equals 1 if the bidder and target firms have the same SIC Code, 0 otherwise
FRIENDLY	Dichotomous variable equals 1 if the merger is friendly, 0 otherwise
INFLUENCE	Bidder firm's total assets / Target firm's total assets
PREMIUM	(Offer Price / Target Stock Price _(Announcement Date -1)) - 1

The variables of interest are DISC, BFIN, and TFIN. A positive relationship between the disclosure variable (DISC) and completion of the merger indicates that the voluntary earnings estimates may be used to increase the likelihood of the merger being completed. The variables BFIN and TFIN are proxies for the financial strength of the bidder and target firms. A positive relationship between the financial strength of the firms and the completion of the merger indicates that firms that have stronger financial characteristics are more likely to complete the merger while a negative relationship indicates that firms that have weaker financial characteristics are more likely to complete the merger.

Andrade *et al.* [2001] found that larger firms that are in the same industry are more likely to complete a merger, while Brennan [1999] found that friendly mergers were more likely to be completed. These studies created the necessity to control for firm size, industry, and bid type. This study uses the natural logarithm of the firm's total assets to control for size, whether or not the bidder and target firm's 2-digit SIC code is the same to control for industry, and whether or not the merger is friendly to control for bid type.

Additionally, other factors that may increase the likelihood of a merger being completed are the amount of control a bidder firm has over a target firm and the price premium paid by the bidder firm to purchase the target firm. This study controls for these additional factors using the variables INFLUENCE and PREMIUM. The next section examines the research design used to test the second set of hypotheses.

4.3.2 Characteristics of Firms that Voluntarily Disclose Earnings Estimates

To examine the characteristics of firms that voluntarily disclose earnings estimates, the cross-sectional variations in the probability of disclosing or not disclosing on various firm characteristics are tested. To test whether firms with stronger or weaker

financial or corporate governance characteristics voluntarily disclose earnings estimates, the following logistic regression is estimated to test the second set of hypotheses:

$$\begin{aligned}
 \text{Prob (DISC = 1)} = & \beta_0 \\
 \text{Test Variables:} & + \beta_1 \text{ BFIN} + \beta_2 \text{ TFIN} + \beta_3 \text{ BGINEX} + \beta_4 \text{ TGINDEX} \\
 & + \beta_5 \text{ PCHUTE} \\
 \text{Control Variables:} & + \beta_6 \text{ BSIZE} + \beta_7 \text{ TSIZE} + \beta_8 \text{ BAUDIT} + \beta_9 \text{ TAUDIT} \\
 & + \beta_{10} \text{ BUWRITER} + \beta_{11} \text{ TUWRITER} + \beta_{12} \text{ EF} \\
 & + \beta_{13} \text{ INDUSTRY} \qquad \qquad \qquad (3)
 \end{aligned}$$

Where:

<u>Variable</u>	<u>Description</u>
DISC	Dichotomous variable equals 1 if the firms provide forward-looking information (earnings or PE Ratios) of the combined firm, 0 otherwise
BFIN	Bidder firm's Z-score as calculated using Altman's [1968] formula
TFIN	Target firm's Z-score as calculated using Altman's [1968] formula
BGINDEX	G-Index from bidder firm from Gompers <i>et al.</i> [2003]
TGINDEX	G-Index of target firm from Gompers <i>et al.</i> [2003]
PCHUTE	Dichotomous variable equals 1 if the target firm's CEO has a golden parachute in their contract, 0 otherwise
BSIZE	Natural Logarithm of the Bidder firm's total assets
TSIZE	Natural Logarithm of the Target firm's total assets
BAUDIT	Dichotomous variable equals 1 if the bidder firm uses a Big 4/5 auditor, 0 otherwise
TAUDIT	Dichotomous variable equals 1 if the target firm uses a Big 4/5 auditor, 0 otherwise
BUWRITER	Rank of the Bidder Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters
TUWRITER	Rank of the Target Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters
EF	Dichotomous variable equals 1 if either the bidder or target firm issued earnings forecast in the previous period, 0 otherwise
INDUSTRY	Dichotomous variable equals 1 if the bidder and target firms have the same SIC Code, 0 otherwise

The variables of interest are the financial strength variables BFIN and TFIN, the corporate governance variables BGINDEX and TGINDEX, and whether or not the target firm had a golden parachute in their contract (PCHUTE).

A positive relationship between the financial strength variables and whether or not management chooses to voluntarily disclose earnings estimates provides support for the idea that management is providing as much information as possible to the shareholders to reduce the information asymmetry between management and shareholders. A negative relationship between the financial strength variables and voluntarily disclosing earnings estimates suggests that firms that are financially weaker are using this voluntary disclosure to help “sell” the merger to the shareholders.

A higher G-Index implies that a firm is structured more similar to that of a dictatorship and therefore has weaker corporate governance. Therefore, a positive relationship between the corporate governance variables and whether or not management chooses to voluntarily disclose earnings estimates supports the idea that management is using the voluntary disclosure to help “sell” the merger to the shareholders while a negative relationship between the corporate governance variables and whether or not management chooses to voluntarily disclose earnings estimates suggests that stronger firms provide more information to help decrease information asymmetry between management and shareholders.

A golden parachute provides management with an incentive to provide information that may persuade shareholders to vote in favor of the merger. If this rationale is correct, the variable PCHUTE will be positively related to whether or not management voluntarily discloses earnings estimates.

Cox [1985], Imhoff [1978] Ruland [1979], and Waymire [1985] found that larger firms are more likely to provide earnings forecasts. This study controls for this using the variables BSIZE and TSIZE which are defined as the natural logarithm of the bidder and target firms' total assets respectively.

Clarkson *et al.* [1992] found that firms with higher audit quality and higher underwriter prestige were more likely to issue earnings forecasts. Audit quality is controlled for using a dichotomous variable equaling 1 if the firm uses a Big 4 or Big 5 auditor while underwriter prestige uses the Carter-Manaster Reputation Rankings for IPO Underwriters to control for underwriter reputation.

Ruland *et al.* [1990] and Frankel *et al.* [1995] found that firms that had previously provided earnings forecasts were more likely to issue earnings forecasts. The variable EF controls for this by assigning a dichotomous variable of 1 if either the bidder or target firm provided an earnings forecast in the previous year.

Lastly, Andrade *et al.* [2001], Gort [1969], Jensen [1986], Jensen [1993], and Botosan and Harris [2000] provided evidence that firms in the same industry were more likely to issue earnings forecasts. Mergers between firms in the same industry are controlled for using the variable INDUSTRY which is a dichotomous variable equaling 1 if the bidder and target firms share the same 2-digit SIC code. The following section examines the research design used to test the third set of hypotheses.

4.3.3 Earnings Estimate Bias

As discussed in the development of Hypothesis 3, if management is trying to persuade shareholders to vote in favor of the merger, then these forecasts may be optimistically biased to sway shareholder votes.

Since this study examines both EPS and PE Ratio estimates of the merged entity, the firms are separated into two separate samples. While these are two very different estimates, both EPS and PE Ratios are used by investors to determine the strength of the firm. EPS provides the earnings per share of the company for the previous period and the PE Ratio is used measure investors' expectation of higher earnings growth. Since investors consider higher EPS and PE Ratios to be better, both samples should provide similar results.

Using these projections, the accuracy of the forecast of the new firm is examined at the first earnings announcement of the year following the projection. The forecast error for the earnings forecast will be calculated using the following:

$$\text{Forecast Error (FE}_{\text{EPS}}) = (\text{Forecasted EPS} - \text{Actual EPS}) / |\text{Actual EPS}| \quad (4)$$

and the forecast error of the forecasted price-to-earnings ratio will be calculated using:

$$\text{Forecast Error (FE}_{\text{PE}}) = (\text{Forecasted PE Ratio} - \text{Actual PE Ratio}) / |\text{Actual PE Ratio}| \quad (5)$$

A t-test is used to determine if the forecast error for each sample is greater than 0. If the forecast error is greater than 0, the forecasted earnings are optimistically biased and management may be voluntarily disclosing information to persuade shareholders to vote in favor of the merger.

Once bias has been examined, the study now focuses on what firm characteristics are present when less biased forecasts are presented. The following ordinary least square (OLS) regression is employed to test hypotheses **H3c**, **H3d**, **H3e**, and **H3f**:

$$\begin{aligned}
FE = & \beta_0 \\
\text{Test Variables:} & + \beta_1 \text{ BFIN} + \beta_2 \text{ TFIN} + \beta_3 \text{ BGINDEX} \\
\text{Control Variables:} & + \beta_4 \text{ BSIZE} + \beta_5 \text{ TSIZE} + \beta_6 \text{ BAUDIT} + \beta_7 \text{ TAUDIT} \\
& + \beta_8 \text{ BUWRITER} + \beta_9 \text{ TUWRITER} + \beta_{10} \text{ EF} \\
& + \beta_{11} \text{ HORIZON}
\end{aligned} \tag{6}$$

Where:

<u>Variable</u>	<u>Description</u>
FE	Forecast Error of the forward-looking information. Calculated as $FE = (\text{Forecast} - \text{Actual}) / (\text{Actual})$
BFIN	Bidder firm's Z-score as calculated using Altman's [1968] formula
TFIN	Target firm's Z-score as calculated using Altman's [1968] formula
BGINDEX	G-Index from bidder firm from Gompers <i>et al.</i> [2003]
BSIZE	Dichotomous variable equals 1 if the target firm uses a Big 4/5 auditor
TSIZE	Rank of Bidder Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters
BAUDIT	Dichotomous variable equals 1 if the bidder firm uses a Big 4/5 auditor, 0 otherwise
TAUDIT	Dichotomous variable equals 1 if the target firm uses a Big 4/5 auditor, 0 otherwise
BUWRITER	Rank of the Bidder Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters
TUWRITER	Rank of the Target Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters
EF	Dichotomous variable equals 1 if either the bidder or target firm issued earnings forecast in the previous period, 0 otherwise
HORIZON	# of days between earnings forecast and actual earnings / 365

Some of the same firm characteristics that lead to higher forecast accuracy will also lead to a smaller forecast bias. The variables of interest are TFIN, BFIN, and BGINDEX. BFIN and TFIN is the Altman Z-score (Altman [1968]) for the bidder and target firms respectively and BGINDEX is the G-Index gathered from Thompson Financial's IRRC which calculates the G-Index as in Gompers *et al.* [2003] for the bidder

firm. Firms that have stronger financial characteristics would have higher Altman Z-scores, while firms that have stronger corporate governance characteristics would have lower G-Index's.

Stronger firms should not have as much of an incentive to provide biased forecasts as weaker firms. Therefore, stronger firms would provide the forecasts that are less biased. If firms that have stronger financial characteristics provide less biased forecasts, the variables BFIN and TFIN will be negatively associated with forecast error. If firms that have stronger corporate governance characteristics provide less biased forecasts, the variables BGINDEX will be negatively associated with forecast error.

Clarkson *et al.* [1992] and Clarkson [2000] found that the size of the firm, whether or not the firm has issued previous earnings forecasts, auditor quality, and underwriter prestige are all characteristics that may increase the accuracy of earnings forecasts. This study controls for size using the natural logarithm of total assets, auditor quality with a dichotomous variable equaling 1 if the firm uses a big 4 or big 5 auditor, and underwriter prestige by using the Carter-Manaster Reputation Rankings for IPO Underwriters to control for underwriter reputation. Whether or not a firm has issued previous earnings forecasts is controlled for by using a dichotomous variable equaling 1 if either the bidder or target firm issued an earnings forecast in the previous year.

Another characteristic that may increase forecast accuracy is the amount of time between the forecast date and actual earnings date (Waymire [1985] and McNichols [1989]). The amount of time between forecasted and actual dates is controlled for using the variable HORIZON, which is the number of days until year end divided by 365.

The following section examines the final data and research methodology for the fourth set of hypotheses.

4.3.4 Characteristics of Firms with Greater Forecast Accuracy

To examine the characteristics of firms that provide more accurate forecasts, the absolute values of the forecast errors are calculated as in the previous section when measuring forecast bias. The absolute values of the forecasts are used since this set of hypotheses are measuring forecast accuracy rather than forecast bias. The absolute values of the forecast errors for both EPS and PE Ratio are:

$$|\text{Forecast Error (FE}_{\text{EPS}})| = |(\text{Forecasted EPS} - \text{Actual EPS}) / |\text{Actual EPS}|| \quad (7)$$

and

$$|\text{Forecast Error (FE}_{\text{PE}})| = |(\text{Forecasted PE Ratio} - \text{Actual PE Ratio}) / |\text{Actual PE Ratio}|| \quad (8)$$

To examine the characteristics of firms that provide more accurate forecasts, the following ordinary least square (OLS) regression is employed to test the fourth set of hypotheses:

$$\begin{aligned} |\text{FE}| = & \beta_0 \\ \text{Test Variables:} & + \beta_1 \text{ BFIN} + \beta_2 \text{ TFIN} + \beta_3 \text{ BGINDEX} \\ \text{Control Variables:} & + \beta_4 \text{ BSIZE} + \beta_5 \text{ TSIZE} + \beta_6 \text{ BAUDIT} + \beta_7 \text{ TAUDIT} \\ & + \beta_8 \text{ BUWRITER} + \beta_9 \text{ TUWRITER} + \beta_{10} \text{ EF} \\ & + \beta_{11} \text{ HORIZON} \end{aligned} \quad (9)$$

Where:

<u>Variable</u>	<u>Description</u>
\text{FE}	Absolute value of the Forecast Error of the forward-looking information. Calculated as $ \text{FE} = (\text{Forecast} - \text{Actual}) / (\text{Actual}) $
BFIN	Bidder firm's Z-score as calculated using Altman's [1968] formula
TFIN	Target firm's Z-score as calculated using Altman's [1968] formula
BGINDEX	G-Index from bidder firm from Gompers <i>et al.</i> [2003]
BSIZE	Dichotomous variable equals 1 if the target firm uses a Big 4/5 auditor
TSIZE	Rank of Bidder Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters

BAUDIT	Dichotomous variable equals 1 if the bidder firm uses a Big 4/5 auditor, 0 otherwise
TAUDIT	Dichotomous variable equals 1 if the target firm uses a Big 4/5 auditor, 0 otherwise
BUWRITER	Rank of the Bidder Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters
TUWRITER	Rank of the Target Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters
EF	Dichotomous variable equals 1 if either the bidder or target firm issued earnings forecast in the previous period, 0 otherwise
HORIZON	# of days between earnings forecast and actual earnings / 365

The variables of interest are BFIN, TFIN, and BGINDEX. The BFIN and TFIN variables measure the financial strength of the bidder and target firms while the variable BGINDEX measures the strength of the corporate governance of the bidder firm.

Logic indicates that stronger firms would provide the most accurate forecasts. If firms that have stronger financial characteristics provide more accurate forecasts, the variable FIN will be negatively associated with the absolute value of the forecast error. If firms that have stronger corporate governance characteristics provide more accurate forecasts, the variable GINDEX will be positively associated with the absolute value of the forecast error.

As in the tests of the third set of hypotheses, the test of the fourth set of hypotheses controls for firm size, auditor quality, underwriter prestige, whether or not a firm has issued previous earnings forecasts, and the amount of time between the forecast date and the end of the year.

Chapter 5 provides the descriptive statistics and empirical results for each set of hypotheses.

5. ANALYSIS AND RESULTS

5.1 Descriptive Statistics

Table 7 presents descriptive statistics of the variables in the final samples used in testing the different sets of hypotheses. Only the mean and median of the variables used in each of the hypotheses are reported and a discussion of each set of hypotheses follows. The next section examines the final samples used to test the first set of hypotheses.

Table 7 – Descriptive Statistics

Variable*	H1 N=92		H2 N=28		H3 and H4 EPS Sample N=19		H3 and H4 PE Ratio Sample N=17	
	Mean	Med.	Mean	Med.	Mean	Med.	Mean	Med.
COMPLETE	0.95	1.00						
DISC	0.36	0.00	0.53	1.00				
BSIZE	14.81	14.83	15.82	15.95	15.85	15.69	15.34	14.87
TSIZE	13.22	13.24	14.34	14.21	14.05	14.02	13.57	13.27
INFLUENCE	22.21	3.80						
PREMIUM	22.31	20.47						
FRIENDLY	0.97	1.00						
INDUSTRY	0.73	1.00	0.50	1.00				
BAUDIT			0.93	1.00	0.93	1.00	0.89	1.00
TAUDIT			0.93	1.00	0.93	1.00	0.82	1.00
BUWRITER			8.41	9.10	7.64	9.00	6.74	9.00
TUWRITER			8.40	9.10	7.81	9.00	8.19	8.10
EF			0.54	1.00	0.40	0.00	0.50	0.50
HORIZON					1.20	1.13	0.94	0.87
BFIN	4.34	1.78	6.06	2.91	4.16	0.44	3.41	0.47
TFIN	3.61	1.41	3.04	1.71	1.97	0.30	3.21	2.00
BGINDEX			9.14	8.50			10.13	10.00
TGINDEX			8.46	8.00				
PCHUTE			0.36	0.00				
FE					1.11	0.33	0.38	0.07
FE					1.21	0.48	0.73	0.34

* All variables are as defined in chapter 4 and summarized in table 2

5.1.1 Hypotheses One

The sample used to test the first set of hypotheses includes all mergers that filed a proxy-prospectus with the SEC and had enough information to calculate the size and financial strength of both the bidder and target firms. These criteria yielded a final sample size of 92 mergers for H1. Ninety of the mergers were considered friendly and 68 of the mergers were between firms in the same industry. The descriptive statistics in table 7 show that the size of the bidder firm is larger than the size of the target firm and the bidder firm is better off financially. Additionally, the median value for the financial strength of the bidder firm (BFIN) is 1.78. According to Altman [1968], a score below 1.80 has a high risk of bankruptcy. This observation may indicate that firms merge to strengthen their financial outlook.

An examination of the correlations between the independent variables in the model finds that the correlation between the variables TSIZE and BSIZE is 0.6442 and is the only correlation above 0.40. The model is tested for multicollinearity using variance inflation factors (VIF) for each variable. Netter *et al.* [1990] suggests that a VIF score above 10 indicates multicollinearity is a problem. The variable TSIZE has a VIF of 3.00 which is the highest VIF in this model and one can conclude that there is a low risk of multicollinearity. Table 8 presents the correlations between the variables used to test the first set of hypotheses.

Additionally, Pearson residuals were calculated to test for outliers. Menard [2002] indicated that Pearson residuals that are less than -2 or greater than +2 may identify an observation that would be considered an outlier. All of the Pearson residuals in the model are between -1 and +1 indicating that there are no outliers.

The next section examines the data used to test the second set of hypotheses.

Table 8 - Correlation Matrix of Variables Used to Test H1

Variables ¹	COMPLETE	DISC	TFIN	BFIN	TSIZE	BSIZE	INFLUENCE	PREMIUM	FRIENDLY	INDUSTRY
COMPLETE	1.000									
DISC	0.090	1.000								
TFIN	-0.174*	-0.012	1.000							
BFIN	-0.361***	0.154	0.426**	1.000						
TSIZE	0.050	0.213	-0.350***	-0.245	1.000					
BSIZE	0.139	0.217**	-0.209**	-0.331***	0.644**	1.000				
INFLUENCE	0.067	0.131	0.062	-0.061	-0.301***	0.252**	1.000			
PREMIUM	-0.024	0.067	0.058	-0.022	-0.090	0.073	0.231**	1.000		
FRIENDLY	0.263**	-0.055	-0.158	-0.355***	-0.021	0.002	0.038	-0.003	1.000	
INDUSTRY	0.144	0.096	-0.029	-0.068	0.208**	0.127	0.017	-0.010	0.251**	1.000

¹ All variables are as defined in chapter 4 and summarized in table 6

* p<=.10

** p<=.05

*** p<=.01

5.1.2 Hypotheses Two

The sample used to test the second set of hypotheses is designed to examine the characteristics of those firms that choose to voluntarily disclose earnings estimates. To run this test, financial and corporate governance variables for both the target and bidder firms must be calculated. These sample criteria left a final sample of 28 observations to be examined.

As in the previous sample, the bidder firm is larger than the target firm and has stronger financial characteristics. The variable BSIZE has a mean of 15.82 while the variable TSIZE has a mean of 14.34. The variable BFIN has a mean of 6.06 and the variable TFIN has a mean of 3.04. Additionally, both the bidder and target firms in the H2 sample are larger than in the previous sample that tests the first set of hypotheses. The size differences between the two samples are 15.82 vs. 14.81 for the variable BSIZE and 13.22 vs. 14.34 for the variable TSIZE (table 7).

There is also a difference between the bidder firm's financial strength variable (BFIN) in the two samples. The variable BFIN has a mean of 6.06 in the H2 sample vs. 4.34 in the H1 sample. While there is a difference of the bidder firm's financial strength between samples, both Z-scores signify a firm with little financial distress.

A correlation analysis found that the variables BAUDIT and TAUDIT were identical and therefore the variable TAUDIT has been dropped from the regression to correct for multicollinearity. Additionally, the size variables BSIZE and TSIZE have a correlation of 0.7461. VIFs for each variable were calculated and TSIZE has the largest VIF of 4.47 indicating a slight risk of multicollinearity. An additional test is performed to increase the sample size and verify results. Table 9 presents the correlations between the variables used to test the second set of hypotheses.

Table 9 - Correlation Matrix of Variables Used to Test H2

Variables ¹	DISC	BFIN	TFIN	BGINDEX	TGINDEX	PCHUTE	INDUSTRY	BSIZE	TSIZE
DISC	1.000								
BFIN	0.267	1.000							
TFIN	0.180	0.804**	1.000						
BGINDEX	-0.197	-0.234	-0.406***	1.000					
TGINDEX	-0.200	-0.295	-0.254	0.251	1.000				
PCHUTE	-0.053	-0.176	-0.057	0.191	0.193	1.000			
INDUSTRY	-0.016	-0.307	-0.189	-0.085	0.260	-0.011	1.000		
BSIZE	-0.114	-0.414**	-0.328	0.117	0.546***	0.054	0.286	1.000	
TSIZE	-0.067	-0.541***	-0.482***	0.301	0.629***	0.064	0.438**	0.746	1.000
BAUDIT	0.020	0.063	0.136	-0.408	0.191	-0.083	0.061	0.192***	0.171
TAUDIT	0.020	0.063	0.136	-0.408	0.191	-0.083	0.061	0.192	0.171
BUWRITER	-0.206	0.173	0.180	0.093	0.85	-0.311	-0.194	-0.201	-0.025
TUWRITER	0.012	0.146	0.190	0.027	0.093	-0.170	0.301	-0.110	0.071
EF	-0.005	-0.046	0.140	-0.342*	0.101	0.096	-0.162	0.138	-0.065

All variables are as defined in chapter 4 and summarized in table 6

* p<=.10

** p<=.05

*** p<=.01

Table 9 (continued)									
	BAUDIT	TAUDIT	BUWRITER	TUWRITER	EF				
BAUDIT	1.000								
TAUDIT	1.000	1.000							
BUWRITER	-0.030	-0.030	1.000						
TUWRITER	-0.098	-0.098	0.077	1.000					
EF	0.020	-0.020	0.259	-0.109	1.000				

¹ All variables are as defined in chapter 4 and summarized in table 6

* p<=.10

** p<=.05

*** p<=.01

To test for outliers, Pearson residuals were calculated and all residuals are between -1 and +1 indicating that there are no outliers in the sample. The next section examines the data used to test EPS forecast bias and accuracy.

5.1.3 Hypotheses Three and Four EPS Sample

The sample used to test these sets of hypotheses is designed to examine factors that may influence EPS forecast bias and accuracy. To test these characteristics, all financial and corporate governance variables for the bidder and target firm must be calculated. Due to the lack of data availability, the corporate governance variable for the target firm was not examined. The final sample used to test EPS forecast bias and accuracy includes 19 mergers.

The bidder and target firms are slightly larger than the sample that tests the first set of hypotheses. Note that the mean forecast error and absolute forecast error are much larger than the median and there is a large difference between the mean and median of the bidder and target firms' financial variables. The variable BFIN has a mean of 4.16 which would indicate a financially stable firm while the median is just 0.44 which indicates a firm is financially distressed. The variable TFIN has a mean of 1.97 and a median of 0.30 (Table 6).

VIFs for each variable were examined and the variables EF and TUWRITER each had VIFs above 4. VIFs above 4 indicate that there may be some indication of multicollinearity introduced in the model. The correlation between these two variables is 0.68 indicating that they are highly correlated. A large correlation is not uncommon with a sample size this small and additional tests are performed to verify results. Table 9 presents the correlations between the variables used to test bias and accuracy of the EPS sample.

Pearson residuals were used to test for outliers and all residuals fell between -1.7 and +1.7. While these are higher than the other samples, they are between the -2 and +2 that Menard [2002] describes as outliers and therefore no observations were deleted. An additional test is performed to the sensitivity of variable specification of the financial strength variables. The next section examines the data used to examine PE Ratio forecast accuracy and bias.

5.1.4 Hypotheses Three and Four PE Ratio Sample

The sample used to test these sets of hypotheses is designed to examine factors that may influence the PE Ratio forecast bias and accuracy. To test these characteristics, financial and corporate governance variables for the bidder and target firm must be calculated. As in the EPS sample, the strength of the target firm corporate governance was not examined due to the lack of corporate governance data availability. The final sample used to test PE Ratio forecast bias and accuracy is 17 mergers.

Once again, there is a difference between the mean and median of the forecast error and absolute forecast error in addition to the mean and median of the financial strength variables BFIN and TFIN (table 6). Pearson residuals fell between -0.2 and +0.2 indicating that no outliers were present.

VIFs for each variable were calculated and the variables BGINDEX and BFIN had VIFs OF 4.18 and 4.11 respectively. High VIFs are to be expected from a sample size this small and additional tests are performed to verify results. Table 11 presents the correlations between the variables used to test bias and accuracy in the PE Ratio sample.

The next section provides the empirical results of the first set of hypotheses.

Table 10 - Correlation Matrix of Variables used to Test H3 and H4 (EPS Sample)

Variables¹	FE _{EPS}	BFIN	TFIN	BGINDEX	BSIZE	TSIZE	BAUDIT	TAUDIT	BUWRITER	TUWRITER	EF	HORIZON
FE _{EPS}	1.000											
BFIN	0.345	1.000										
TFIN	0.227	0.197	1.000									
BGINDEX	0.098	-0.304	-0.657***	1.000								
BSIZE	-0.091	-0.352	-0.232	0.214	1.000							
TSIZE	0.243	-0.398*	-0.296	0.241	0.685***	1.000						
BAUDIT	0.108	0.160	0.133	0.183	0.148	0.072	1.000					
TAUDIT	-0.005	0.109	0.088	-0.227	0.161	0.187	-0.081	1.000				
BUWRITER	0.219	0.250	0.177	-0.044	-0.251	0.012	-0.044	0.304	1.000			
TUWRITER	0.296	0.404*	0.336	-0.546**	-0.216	0.041	-0.142	-0.002	0.287	1.000		
EF	0.409*	0.597***	0.501**	-0.462*	-0.092	-0.087	0.262	0.180	0.403*	0.683***	1.000	
HORIZON	0.062	0.167	-0.113	0.008	-0.367	-0.167	-0.194	0.117	0.190	0.348	0.203	1.000

¹ All variables are as defined in chapter 4 and summarized in table 6

* p<=.10

** p<=.05

*** p<=.01

Table 11 - Correlation Matrix of Variables used to Test H3 and H4 (PE Ratio Sample)

Variables ¹	FE _{PE}	BFIN	TFIN	BGINDEX	BSIZE	TSIZE	BAUIDT	TAUDIT	BUWRITER	TUWRITER	EF	HORIZON
FE _{PE}	1.000											
BFIN	-0.387	1.000										
TFIN	-0.272	0.499**	1.000									
BGINDEX	-0.186	-0.299	0.019	1.000								
BSIZE	0.337	-0.533	-0.170	-0.156	1.000							
TSIZE	-0.124	-0.390	-0.254	-0.250	0.4852**	1.000						
BAUIDT	0.064	0.023	0.071	0.028	0.277	0.152	1.000*					
TAUDIT	0.166	0.242	0.139	-0.510**	0.155	0.111	0.433	1.000				
BUWRITER	0.055	0.409	0.203	-0.209	-0.351	-0.061	-0.134	0.430*	1.000			
TUWRITER	-0.449*	0.414*	0.407	-0.003	-0.185	0.062	-0.161	0.262	0.567**	1.000		
EF	0.006	0.152	-0.149	-0.349	-0.178	0.096	-0.436*	-0.066	0.420*	0.221	1.000	
HORIZON	0.162	0.115	0.058	-0.254	-0.274	-0.345	-0.672***	-0.059	0.328	0.067	0.352	1.000

¹ All variables are as defined in chapter 4 and summarized in table 6

* p<=.10

** p<=.05

*** p<=.01

5.2 Empirical Results

5.2.1 Test of H1: Voluntary Disclosure and Merger Success

The first set of hypotheses theorizes that management uses the voluntary information to increase the likelihood of the merger being completed. Using a dependent variable equal to 1 if the merger is completed and 0 if the merger is withdrawn, it is expected that larger firms in the same industry classified as friendly bids are more likely to be completed. Another factor that may increase the likelihood of a merger being completed is when the acquiring firm has significant influence over the target company or if there is a sufficiently large price premium paid to the target.

The primary variables of interest are the disclosure variable, DISC, and the financial variables BFIN and TFIN. If management succeeds in using the voluntary disclosure of earnings estimates to persuade shareholders to vote in favor of the merger, the voluntary disclosure of forward-looking information will be positively related to the completion of the merger.

Table 12 reports the coefficients, standard errors, z-statistics, p-values, number of observations, likelihood ratio chi-square test, and pseudo R^2 for equation (2).

Even with the small number of withdrawn mergers in the sample the chi-square test revealed a p-value of 0.1423. The disclosure variable (DISC) is insignificant, thus hypothesis **H1a** is not supported. The variable BFIN, which measures the financial strength of the bidder firm, has a negative coefficient of -0.0961 and has a p-value of 0.083, thus supporting hypothesis **H1b**. This negative coefficient may indicate that bidder firms that are not doing as well financially may be seeking other ways to become stronger. One way that a firm may get stronger is to merge with another company and combine their resources to gain market share and reduce costs. Finally, the financial

strength variable of the target firm (TFIN) is insignificant; therefore hypothesis **H1c** is not supported.

Table 12 - Summary statistics from logistic regression of indicator variable indicating whether the merger was completed.

Prob (COMPLETE = 1) = $\beta_0 + \beta_1$ DISC + β_2 BFIN + β_3 TFIN + β_4 BSIZE + β_5 TSIZE + β_6 INDUSTRY + β_7 FRIENDLY + β_8 INFLUENCE + β_9 PREMIUM + ε				
	Coefficient	Standard Error	z-statistic	p-value
Intercept	5.762	5.742	1.00	0.316
DISC	2.705	2.098	1.29	0.197
BFIN	-0.096	0.055	-1.73	0.083
TFIN	-0.072	0.103	-0.70	0.484
BSIZE	-0.159	0.694	-0.23	0.816
TSIZE	-0.992	0.717	-0.14	0.890
INDUSTRY	1.366	1.168	1.17	0.242
FRIENDLY	0.247	2.184	0.11	0.910
INFLUENCE	0.045	0.089	0.51	0.611
PREMIUM	-0.015	0.023	-0.65	0.518
N	92 Total	86 Completed	6 Withdrawn	
LR Chi ² (9)	13.47			
Prob > Chi ²	0.142			
Pseudo R ²	0.060			

where:

COMPLETE	Dichotomous variable equals 1 if the merger is completed, 0 otherwise
DISC	Dichotomous variable equals 1 if the firms provide forward-looking information (earnings or PE Ratios) of the combined firm, 0 otherwise
BFIN	Bidder firm's Z-score as calculated using Altman's [1968] formula
TFIN	Target firm's Z-score as calculated using Altman's [1968] formula
BSIZE	Natural Logarithm of the Bidder firm's total assets
TSIZE	Natural Logarithm of the Target firm's total assets
INDUSTRY	Dichotomous variable equals 1 if the bidder and target firms have the same SIC Code, 0 otherwise
FRIENDLY	Dichotomous variable equals 1 if the merger is friendly, 0 otherwise
INFLUENCE	Bidder firm's total assets / Target firm's total assets
PREMIUM	(Offer Price / Target Stock Price (Announcement Date -1)) - 1

Results of the model testing the first set of hypotheses could be sensitive to the specification of a couple of variables; therefore, additional tests are performed to examine the sensitivity of the specification of the variables INFLUENCE, BFIN, and TFIN.

The study defines the variable INFLUENCE as the bidder firm's total assets / the target firm total assets. Another way to define the variable INFLUENCE is BSIZE / TSIZE. Defining influence as BSIZE / TSIZE created a multicollinearity problem between the three size variables (BSIZE, TSIZE, and INFLUENCE) and therefore cannot be tested.

The financial strength variables of BFIN and TFIN could be defined as dichotomous variables equaling 1 if the financial strength is above the mean and 0 otherwise.

Table 13 reports the coefficients, standard errors, z-statistics, p-values, number of observations, likelihood ratio chi-square test, and pseudo R² for equation (2) with new variable definitions for BFIN and TFIN. The variable DISC used to test hypothesis **H1a** remains insignificant, the variable BFIN used to test hypothesis **H1b** is negative and significant, and the variable TFIN used to test hypothesis **H1c** is insignificant. The negative and significant coefficient for the variable BFIN confirms the suggestion that bidder firms that are weaker are more likely to complete a merger.

5.2.2 Test of H2: Characteristics of Firms that Voluntarily Disclose Earnings Estimates

To examine the characteristics of firms that voluntarily disclose earnings estimates, cross-sectional variations in the probability of disclosing or not disclosing are tested on various firm characteristics.

Table 13 - Summary statistics from logistic regression of indicator variable indicating whether the merger was completed.

Prob (COMPLETE = 1) = $\beta_0 + \beta_1$ DISC + β_2 BFIN + β_3 TFIN + β_4 BSIZE + β_5 TSIZE + β_6 INDUSTRY + β_7 FRIENDLY + β_8 INFLUENCE + β_9 PREMIUM + ϵ				
	Coefficient	Standard Error	z-statistic	p-value
Intercept	5.763	5.742	1.00	0.316
DISC	2.705	2.099	1.29	0.197
BFIN	-0.096	0.055	-1.73	0.083
TFIN	-0.724	0.103	-0.70	0.484
BSIZE	-0.159	0.694	-0.23	0.819
TSIZE	-0.099	0.717	-0.14	0.890
INDUSTRY	1.366	1.168	1.17	0.242
FRIENDLY	0.023	2.183	0.11	0.910
INFLUENCE	0.045	0.089	0.51	0.611
PREMIUM	-0.014	0.023	-0.65	0.518
N	92 Total	86 Completed	6 Withdrawn	
LR Chi ² (9)	13.47			
Prob > Chi ²	0.142			
Pseudo R ²	0.060			

where:

COMPLETE	Dichotomous variable equals 1 if the merger is completed, 0 otherwise
DISC	Dichotomous variable equals 1 if the firms provide forward-looking information (earnings or PE Ratios) of the combined firm, 0 otherwise
BFIN	Dichotomous variable equals 1 if the bidder firm's Z-score is above the mean Z-scores in the sample as calculated using Altman's [1968] formula, 0 otherwise
TFIN	Dichotomous variable equals 1 if the target firm's Z-score is above the mean Z-scores in the sample as calculated using Altman's [1968] formula, 0 otherwise
BSIZE	Natural Logarithm of the Bidder firm's total assets
TSIZE	Natural Logarithm of the Target firm's total assets
INDUSTRY	Dichotomous variable equals 1 if the bidder and target firms have the same SIC Code, 0 otherwise
FRIENDLY	Dichotomous variable equals 1 if the merger is friendly, 0 otherwise
INFLUENCE	Bidder firm's total assets / Target firm's total assets
PREMIUM	(Offer Price / Target Stock Price _(Announcement Date -1)) - 1

This set of hypotheses examines whether a firm's financial characteristics, corporate governance, and the presence of a golden parachute influence whether or not a firm voluntarily discloses earnings estimates while controlling for size, whether the firms are in the same industry, type of auditor, and quality of underwriter. Weak financial and corporate governance characteristics would indicate that management is using the voluntary information to persuade shareholders to vote in favor of the merger, while stronger financial and corporate governance characteristics would suggest that stronger firms are more likely to provide more information to their shareholders.

Table 14 reports coefficients, standard errors, z-statistics, p-values, number of observations, likelihood ratio chi-square test, and pseudo R^2 for equation (3). The small number of observations has created a weak test in which the chi-square test revealed a p-value of 0.267.

The financial strength variables of the bidder and target firms have different signs. The variable BFIN has a coefficient of 0.7734 and is significant at the 0.055 level (**H2a**) and the variable TFIN has a negative coefficient of -0.4053 and an insignificant p-value of 0.209 (**H2b**). With a correlation between BFIN and TFIN of 0.1413, it is unlikely the result can be explained by multicollinearity. While TFIN is insignificant, conclusions on its sign may be drawn with this small sample size. A positive coefficient for BFIN indicates that bidder firms that are stronger financially are more willing to disclose earnings estimates than those bidder firms that are weaker. This finding goes along with the suggestion that the bidder firms that are stronger financially are more willing to provide information. This suggestion, along with the weak finding that target firms that are weaker financially are more likely to provide earnings forecasts, may indicate that bidder and target firms use these forecasts to sway shareholder votes of the bidder firm.

At this time, this study is not examining the quality of the information but whether or not the information was disclosed. The variables testing BGINDEX, TGINDEX, and PCHUTE used to hypotheses **H2c, H2d, and H2e** were all insignificant.

The variable TSIZE was positive and significant at the .05 level as in studies by Cox [1985], Imhoff [1978], Ruland [1979], and Waymire [1985]. Unlike Clarkson [1992], the variable for underwriter reputation, BUWRITER, is negative and significant at the .10 level indicating that an underwriter with a weaker reputation is more likely to provide an earnings forecast. This finding could be from the small sample size or that underwriters with weaker reputations may need to disclose more information in a merger and acquisition setting to decrease the information asymmetry between the firm and its shareholders.

As an additional test, the sample size used to test the second set of hypotheses is expanded by omitting the corporate governance variables BGINDEX and TGINDEX. Omitting the corporate governance variables increases the sample size to 92 mergers and provides a more powerful test. The increase in power comes with the cost of creating the problem of omitted variables. Omitted variable bias occurs if the omitted variables BGINDEX or TGINDEX are a determinant of the dependent variable DISC and correlated with at least one other independent variable. The following logistic regression is tested:

$$\begin{aligned}
\text{Prob (DISC = 1)} &= \beta_0 \\
\text{Test Variables:} &+ \beta_1 \text{ BFIN} + \beta_2 \text{ TFIN} + \beta_3 \text{ PCHUTE} \\
\text{Control Variables:} &+ \beta_4 \text{ BSIZE} + \beta_5 \text{ TSIZE} + \beta_6 \text{ BAUDIT} + \beta_7 \text{ TAUDIT} \\
&+ \beta_8 \text{ BUWRITER} + \beta_9 \text{ TUWRITER} + \beta_{10} \text{ EF} \\
&+ \beta_{11} \text{ INDUSTRY}
\end{aligned} \tag{10}$$

Where:

<u>Variable</u>	<u>Description</u>
DISC	Dichotomous variable equals 1 if the firms provide forward-looking information (earnings or PE Ratios) of the combined firm, 0 otherwise
BFIN	Bidder firm's Z-score as calculated using Altman's [1968] formula
TFIN	Target firm's Z-score as calculated using Altman's [1968] formula
PCHUTE	Dichotomous variable equals 1 if the target firm's CEO has a golden parachute in their contract, 0 otherwise
BSIZE	Natural Logarithm of the Bidder firm's total assets
TSIZE	Natural Logarithm of the Target firm's total assets
BAUDIT	Dichotomous variable equals 1 if the bidder firm uses a Big 4/5 auditor, 0 otherwise
TAUDIT	Dichotomous variable equals 1 if the target firm uses a Big 4/5 auditor, 0 otherwise
BUWRITER	Rank of the Bidder Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters
TUWRITER	Rank of the Target Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters
EF	Dichotomous variable equals 1 if either the bidder or target firm issued earnings forecast in the previous period, 0 otherwise
INDUSTRY	Dichotomous variable equals 1 if the bidder and target firms have the same SIC Code, 0 otherwise

Table 15 reports the coefficients, standard errors, z-statistics, p-values, number of observations, likelihood ratio chi-square test, and pseudo R² for equation (10). The chi-

square test revealed a goodness of fit at the .02 level indicating that the model fits the data. As previously reported, the variable indicating the financial strength of the bidder firm, BFIN, is positive and significant indicating that firms that are stronger financially are more willing to provide earnings estimates in the joint proxy-prospectus.

Table 14 - Summary statistics from logistic regression of indicator variable indicating whether the firm voluntarily disclosed earnings estimates

	Coefficient	Standard Error	z-statistic	p-value
Intercept	10.627	10.30	1.03	0.302
BFIN	0.773	0.403	1.92	0.055
TFIN	-0.405	0.323	-1.26	0.209
BGINDEX	-0.181	0.313	-0.58	0.562
TGINDEX	-0.471	0.318	-1.48	0.139
PCHUTE	-0.451	1.440	-0.31	0.754
BSIZE	-0.669	0.481	-1.39	0.164
TSIZE	2.013	0.947	2.12	0.034
BAUDIT	-0.836	2.241	-0.37	0.709
BUWRITER	-2.422	1.323	-1.83	0.067
TUWRITER	-0.340	0.319	-1.07	0.287
EF	0.112	1.775	0.06	0.950
INDUSTRY	-1.211	1.512	-0.80	0.423
N	28			
LR Chi ² (12)	14.59			
Prob > Chi ²	0.265			
Pseudo R ²	0.377			

where:

Table 14 (continued)

DISC	Dichotomous variable equals 1 if the firms provide forward-looking information (earnings or PE Ratios) of the combined firm, 0 otherwise
BFIN	Bidder firm's Z-score as calculated using Altman's [1968] formula
TFIN	Target firm's Z-score as calculated using Altman's [1968] formula
BGINDEX	G-Index from bidder firm from Gompers <i>et al.</i> [2003]
TGINDEX	G-Index of target firm from Gompers <i>et al.</i> [2003]
PCHUTE	Dichotomous variable equals 1 if the target firm's CEO has a golden parachute in their contract, 0 otherwise
BSIZE	Natural Logarithm of the Bidder firm's total assets
TSIZE	Natural Logarithm of the Target firm's total assets
BAUDIT	Dichotomous variable equals 1 if the bidder firm uses a Big 4/5 auditor, 0 otherwise
BUWRITER	Rank of the Bidder Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters
TUWRITER	Rank of the Target Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters
EF	Dichotomous variable equals 1 if either the bidder or target firm issued earnings forecast in the previous period, 0 otherwise
INDUSTRY	Dichotomous variable equals 1 if the bidder and target firms have the same SIC Code, 0 otherwise

Table 15 - Summary statistics from logistic regression of indicator variable indicating whether the firm voluntarily disclosed earnings estimates

$$\text{Prob (DISC} = 1) = \beta_0 + \beta_1 \text{ BFIN} + \beta_2 \text{ TFIN} + \beta_3 \text{ PCHUTE} + \beta_4 \text{ BSIZE} + \beta_5 \text{ TSIZE} + \beta_6 \text{ BAUDIT} + \beta_7 \text{ TAUDIT} + \beta_8 \text{ BUWRITER} + \beta_9 \text{ TUWRITER} + \beta_{10} \text{ EF} + \beta_{11} \text{ INDUSTRY}$$

	Coefficient	Standard Error	z-statistic	p-value
Intercept	-6.416	2.710	-2.37	0.018
BFIN	0.059	0.317	1.85	0.064
TFIN	-0.170	0.531	-0.32	0.749
PCHUTE	0.530	0.487	1.09	0.277
BSIZE	0.259	0.160	1.62	0.106
TSIZE	0.115	0.213	0.54	0.588
BAUDIT	-1.776	1.090	-1.63	0.103
TAUDIT	0.521	0.963	0.54	0.589
BUWRITER	0.119	0.100	1.19	0.236
TUWRITER	0.511	0.139	0.37	0.714
EF	0.621	1.097	0.57	0.571
INDUSTRY	0.401	0.597	0.67	0.502
N	100			
LR Chi ² (12)	21.81			
Prob > Chi ²	0.026			
Pseudo R ²	0.167			

Where:

Table 15 (continued)

DISC	Dichotomous variable equals 1 if the firms provide forward-looking information (earnings or PE Ratios) of the combined firm, 0 otherwise
BFIN	Bidder firm's Z-score as calculated using Altman's [1968] formula
TFIN	Target firm's Z-score as calculated using Altman's [1968] formula
PCHUTE	Dichotomous variable equals 1 if the target firm's CEO has a golden parachute in their contract, 0 otherwise
BSIZE	Natural Logarithm of the Bidder firm's total assets
TSIZE	Natural Logarithm of the Target firm's total assets
BAUDIT	Dichotomous variable equals 1 if the bidder firm uses a Big 4/5 auditor, 0 otherwise
TAUDIT	Dichotomous variable equals 1 if the target firm uses a Big 4/5 auditor, 0 otherwise
BUWRITER	Rank of the Bidder Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters
TUWRITER	Rank of the Target Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters
EF	Dichotomous variable equals 1 if either the bidder or target firm issued earnings forecast in the previous period, 0 otherwise

5.2.3 Test of H3: Earnings Estimate Bias

5.2.3.1 Are Earnings Estimates Biased?

To conduct the tests of the third set of hypotheses, the sample is limited to companies choosing to provide EPS estimates or projected PE Ratios for the merged entity. The forecast errors are examined to determine if these forecasts are biased. As discussed in the development of Hypothesis 3, if management is trying to persuade shareholders to vote in favor of the merger, then these optimistic forecasts may be used to sway shareholder votes.

Table 16 provides the results of the t-test for the EPS and PE Ratio samples. The t-statistic of 2.84 for the EPS sample suggests that firms provide EPS forecasts that are

optimistically biased at the 0.01 level. This optimism indicates that firms may use earnings forecasts to persuade the shareholders to vote in favor of the merger, thus supporting hypothesis **H3a**.

The PE Ratio sample is not significantly different from zero with a t-statistic of 1.200 and is therefore not biased. Capstaff and Paudyal [1998] found that PE Ratios tend to move toward the market PE Ratio. This t-test rejects hypothesis **H3b**. Capstaff and Paudyal's finding suggests that the PE Ratio forecasts would be less biased than EPS forecasts.

Table 16 - Earnings Estimates > 0

Panel A – Forecasted Earnings per Share

One sample t-test of **H3a**: $FE_{EPS} > 0$ where:
 (Forecast Error (FE_{EPS}) = (Forecasted Earnings – Actual Earnings) / |Actual Earnings|)

<u>Mean</u>	<u>Std. Error</u>	<u>Std. Dev.</u>	<u>t-statistic</u>	<u>P-value</u>
1.107	0.391	2.140	2.84	0.004
n = 30				

Panel B – Forecasted Price-to-Earnings Ratios

One sample t-test of **H3b**: $FE_{PE} > 0$ where:
 (Forecast Error (FE_{PE}) = (Forecasted PE Ratio – Actual PE Ratio) / (| Actual PE Ratio|)

<u>Mean</u>	<u>Std. Error</u>	<u>Std. Dev.</u>	<u>t-statistic</u>	<u>P-value</u>
0.384	0.320	1.692	1.20	0.120
n = 34				

As an additional test of whether firms provide an optimistic forecast, a Wilcoxon Signed-Rank Test is performed on the forecast errors of the EPS and PE Ratio samples to

determine if the forecast errors are different from 0.

The forecast errors for the EPS sample are calculated as:

$$\text{Forecast Error (FE}_{\text{EPS}}) = (\text{Forecasted Earnings per Share} - \text{Actual Earnings per Share}) / |\text{Actual Earnings per Share}| \quad (4)$$

and the forecast errors for the forecasted PE Ratio sample are calculated as:

$$\text{Forecast Error (FE}_{\text{PE}}) = (\text{Forecasted PE Ratio} - \text{Actual PE Ratio}) / |\text{Actual PE Ratio}| \quad (5)$$

Table 17 presents the results for both samples. As indicated with the t-test, the EPS sample is significant at the .01 level indicating that the earnings forecasts are optimistically biased (**H3a**).

The PE Ratio sample that provides insignificant results in the t-test does not provide significant results in the signed-rank test (**H3b**), again reflecting that the forecasted PE Ratios are not biased.

The next section examines the factors that may decrease earnings forecast bias.

Table 17 - Wilcoxon Signed-Rank Test

<i>Panel A – Earnings Per Share Sample</i>			
	<u>Observations</u>	<u>Sum Ranks</u>	<u>Expected</u>
Positive	23	404.5	232.5
Negative	7	60.5	232.5
Zero	0	0	0
All	30	465	465
Z	3.538		
Prob > z	0.0004		

Table 17 (continued)

Panel B – Price-to-Earnings Ratio Sample

	<u>Observations</u>	<u>Sum Ranks</u>	<u>Expected</u>
Positive	14	234	203
Negative	14	172	203
Zero	0	0	0
All	28	406	406
Z	0.706		
Prob > z	0.4802		

5.2.3.2 Characteristics of Firms that Provide Less Biased Forecasts

An additional test examines the potential factors affecting bias. Tables 18 and 19 present coefficients, standard errors, t-statistics, p-values, and adjusted R-square for equation (6). Table 18 presents the results for the EPS sample and table 19 presents the results for the PE Ratio sample.

In the EPS sample, Table 18 reports an adjusted R-square of 0.3812 for a model that consists of only 19 observations. Both financial strength variables and the bidders' corporate governance variable are significant at the 0.1 level. The financial strength variables are both positive indicating that firms that are stronger financially are more likely to have biased forecasts. This is opposite of what was predicted in hypothesis **H3c**. Hypotheses **H3c** suggests that firms that are stronger financially should have less incentives to bias forecasts. The inconsistency could come from the difference between the mean and median of financial strength variables in the sample. Additional tests are performed to test for sensitivity in variable specification.

The corporate governance variable for the bidder firm (BGINDEX) is also positive. This finding, as expected, indicates that firms with stronger corporate governance characteristics provide less biased forecasts, thus supporting hypothesis **H3d**.

The only significant control variable is the variable TSIZE which positive and significant at the .05 level. Additionally, the variable BSIZE is negative and marginally significant at the .11 level. The variables TSIZE and BSIZE have a correlation of 0.6852 which may be causing the sign differences between the variables. With no bias in the PE Ratio sample, it is no surprise that the model is weak and no variables are significant. While Table 19 presents the results for this sample, hypotheses **H3e** and **H3f** are inconclusive.

The differences between the mean and median of the financial strength variables necessitate the need to examine the sensitivity to the specification of the variables BFIN and TFIN. These variables are defined as continuous variables which are calculated as the Altman Z-score of the bidder and target firms respectively. To test specification of these variables, equation (6) is re-estimated using a dichotomous variable that equals 1 if the financial strength variable is greater than the mean and 0 otherwise.

Additionally, to correct for the possible multicollinearity between the variables BSIZE and TSIZE, equation (6) is re-estimated after deleting each variable.

While the results of the tests are not reported, the two financial variables lose significance in every test causing the previous finding of **H3c** to be inconclusive. The corporate governance variable BGINDEX remains significant at the 0.1 level reaffirming the finding that firms with stronger corporate governance characteristics provide less biased EPS forecasts (**H3d**).

The next section examines the characteristics of firms with greater forecast accuracy.

Table 18 - Characteristics of Firms Providing Less Biased EPS Forecasts

$$FE_{EPS} = \beta_0 + \beta_1 BFIN + \beta_2 TFIN + \beta_3 BGINDEX + \beta_4 BSIZE + \beta_5 TSIZE + \beta_6 BAUDIT + \beta_7 TAUDIT + \beta_8 BUWRITER + \beta_9 TUWRITER + \beta_{10} EF + \beta_{11} HORIZON$$

	Coefficient	Standard Error	t-statistic	p-value
Intercept	-6.233	6.782	-0.92	0.389
BFIN	0.088	0.045	1.96	0.091
TFIN	0.293	0.126	2.33	0.053
BGINDEX	0.448	0.193	2.32	0.053
BSIZE	-0.530	0.293	-1.81	0.113
TSIZE	1.122	0.395	2.84	0.025
BAUDIT	-2.113	1.335	-1.58	0.157
TAUDIT	-0.373	1.860	-0.20	0.847
BUWRITER	-0.243	0.197	-1.23	0.257
TUWRITER	-0.258	0.592	-0.44	0.676
EF	1.667	1.422	1.17	0.279
HORIZON	-0.211	0.827	-0.25	0.806
N	19			
F(11,5)	2.01			
Prob > F	0.182			
R-squared	0.759			
Adj.-R ²	0.381			

Where:

<u>Table 18 (continued)</u>	
FE	Forecast Error of the forward-looking information. Calculated as $FE = (Forecast - Actual)/(Actual)$
BFIN	Bidder firm's Z-score as calculated using Altman's [1968] formula
TFIN	Target firm's Z-score as calculated using Altman's [1968] formula
BGINDEX	G-Index from bidder firm from Gompers <i>et al.</i> [2003]
BSIZE	Dichotomous variable equals 1 if the target firm uses a Big 4/5 auditor
TSIZE	Rank of Bidder Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters
BAUDIT	Dichotomous variable equals 1 if the bidder firm uses a Big 4/5 auditor, 0 otherwise
TAUDIT	Dichotomous variable equals 1 if the target firm uses a Big 4/5 auditor, 0 otherwise
BUWRITER	Rank of the Bidder Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters
TUWRITER	Rank of the Target Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters
EF	Dichotomous variable equals 1 if either the bidder or target firm issued earnings forecast in the previous period, 0 otherwise
HORIZON	# of days between earnings forecast and actual earnings / 365
FE	Forecast Error of the forward-looking information. Calculated as $FE = (Forecast - Actual)/(Actual)$

Table 19 - Characteristics of Firms Providing Less Biased PE Ratio Forecasts

$$FE_{PE} = \beta_0 + \beta_1 BFIN + \beta_2 TFIN + \beta_3 BGINDEX + \beta_4 BSIZE + \beta_5 TSIZE + \beta_6 BAUDIT + \beta_7 TAUDIT + \beta_8 BUWRITER + \beta_9 TUWRITER + \beta_{10} EF + \beta_{11} HORIZON$$

Variable	Coefficient	Standard Error	t-statistic	p-value
Intercept	2.849	2.726	1.05	0.344
BFIN	-0.063	0.497	-1.27	0.261
TFIN	-0.001	0.032	-0.03	0.979
BGINDEX	-0.078	0.086	-0.90	0.409
BSIZE	0.076	0.084	0.90	0.409
TSIZE	-0.174	0.109	-1.59	0.173
BAUDIT	0.033	0.673	0.05	0.963
TAUDIT	-0.133	0.684	-0.19	0.854
BUWRITER	0.104	0.068	1.54	0.185
TUWRITER	-0.144	0.147	-0.98	0.373
EF	-0.058	0.336	-0.17	0.869
HORIZON	-0.019	0.532	-0.36	0.736
N	17			
F(11,5)	1.05			
Prob > F	0.513			
R-squared	0.698			
Adj.-R ²	0.034			

where:

<u>Table 19 (continued)</u>	
FE _{PE}	Forecast Error of the forward-looking information. Calculated as $FE = (\text{Forecast} - \text{Actual}) / (\text{Actual})$
BFIN	Bidder firm's Z-score as calculated using Altman's [1968] formula
TFIN	Target firm's Z-score as calculated using Altman's [1968] formula
BGINDEX	G-Index from bidder firm from Gompers <i>et al.</i> [2003]
BSIZE	Dichotomous variable equals 1 if the target firm uses a Big 4/5 auditor
TSIZE	Rank of Bidder Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters
BAUDIT	Dichotomous variable equals 1 if the bidder firm uses a Big 4/5 auditor, 0 otherwise
TAUDIT	Dichotomous variable equals 1 if the target firm uses a Big 4/5 auditor, 0 otherwise
BUWRITER	Rank of the Bidder Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters
TUWRITER	Rank of the Target Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters
EF	Dichotomous variable equals 1 if either the bidder or target firm issued earnings forecast in the previous period, 0 otherwise
HORIZON	# of days between earnings forecast and actual earnings / 365
FE	Forecast Error of the forward-looking information. Calculated as $FE = (\text{Forecast} - \text{Actual}) / (\text{Actual})$

5.2.4 Test of H4: Characteristics of Firms with Greater Forecast Accuracy

Using only mergers that provided either a projected EPS or a projected PE Ratio of the new firm, equation (9) examines the characteristics of those firms that provide more accurate forecasts. Since there is little incentive to provide negatively biased forecast, one expects that these results should mirror the results in the previous section.

Table 20 reports results of equation (9) for the EPS sample, and Table 21 reports the results of equation (9) of the PE Ratio sample. The next section examines the EPS sample.

5.2.4.1 EPS Sample

In the EPS sample, Table 20 reports an adjusted R-square of 0.4445 with a total of only 19 observations. Once again, both financial strength variables and the corporate governance variable of the bidder firm are significant. The variable BFIN is positive and significant at the 0.1 level while the variable TFIN is positive and significant at the 0.05 level. This finding is opposite of what was predicted in hypothesis **H4a**. Hypothesis **H4a** hypothesized that firms that are stronger financially would provide more accurate forecasts while the results suggest that firms that are stronger financially produce the less accurate forecasts. Alternative tests are performed to test the sensitivity of variable specification for the financial strength variables.

The variable BGINDEX which measures the strength of the corporate governance of the bidder firm is positive and significant at the 0.05 level. This finding indicates that bidder firms with stronger corporate governance are more likely to produce more accurate forecasts, thus supporting hypothesis **H4b**

As in the EPS forecast bias sample, the variable BSIZE has a positive coefficient and is significant, while the variable TSIZE has a negative coefficient and is marginally significant at the 0.12 level. The significance may be explained by their correlation of 0.6852.

The differences between the mean and median of the financial strength variables create the need to examine alternative measures of BFIN and TFIN. Using dichotomous variables for BFIN and TFIN equaling 1 if the financial strength variable is greater than the mean and 0 otherwise, an additional test of equation (9) is performed. The financial strength variables become insignificant indicating that BFIN and TFIN are sensitive to variable specification and therefore indicates that hypothesis **H4a** is inconclusive. The

corporate governance variable, BGINDEX, remains significant at the 0.1 level while. This finding confirms that firms with stronger corporate governance tend to provide more accurate forecasts (**H4b**).

Table 20 - Characteristics of Firms Providing More Accurate EPS Forecasts

$$|FE_{EPS}| = \beta_0 + \beta_1 BFIN + \beta_2 TFIN + \beta_3 BGINDEX + \beta_4 BSIZE + \beta_5 TSIZE + \beta_6 BAUDIT + \beta_7 TAUDIT + \beta_8 BUWRITER + \beta_9 TUWRITER + \beta_{10} EF + \beta_{11} HORIZON$$

	Coefficient	Standard Error	t-statistic	p-value
Intercept	-8.365	6.271	-1.33	0.224
BFIN	0.085	0.042	2.04	0.081
TFIN	0.313	0.116	2.68	0.031
BGINDEX	0.510	0.178	2.86	0.024
BSIZE	-0.475	0.271	-1.75	0.123
TSIZE	0.997	0.365	2.73	0.029
BAUDIT	-1.873	1.234	-1.52	0.173
TAUDIT	0.172	1.719	0.10	0.923
BUWRITER	-0.251	0.182	-1.38	0.211
TUWRITER	-0.111	0.547	-0.02	0.984
EF	1.301	1.315	0.99	0.355
HORIZON	-0.271	0.764	-0.35	0.733
N	19			
F(11,5)	2.31			
Prob > F	0.138			
R-squared	0.784			
Adj.-R ²	0.445			

where:

Table 20 (continued)

FE	Absolute value of the Forecast Error of the forward-looking information. Calculated as $ FE = (\text{Forecast} - \text{Actual})/(\text{Actual}) $
BFIN	Bidder firm's Z-score as calculated using Altman's [1968] formula
TFIN	Target firm's Z-score as calculated using Altman's [1968] formula
BGINDEX	G-Index from bidder firm from Gompers <i>et al.</i> [2003]
BSIZE	Dichotomous variable equals 1 if the target firm uses a Big 4/5 auditor
TSIZE	Rank of Bidder Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters
BAUDIT	Dichotomous variable equals 1 if the bidder firm uses a Big 4/5 auditor, 0 otherwise
TAUDIT	Dichotomous variable equals 1 if the target firm uses a Big 4/5 auditor, 0 otherwise
BUWRITER	Rank of the Bidder Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters
TUWRITER	Rank of the Target Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters
EF	Dichotomous variable equals 1 if either the bidder or target firm issued earnings forecast in the previous period, 0 otherwise
HORIZON	# of days between earnings forecast and actual earnings / 365

5.2.4.2 PE Ratio Sample

In the PE Ratio sample, Table 21 reports an adjusted R-square of 0.6726 with only 17 observations. The variable TFIN is negative and significant at the 0.1 level while the variable BFIN is insignificant. This finding indicates that a target firm that is stronger financially provides more accurate PE Ratio forecasts providing results that are contrary to the prediction of hypothesis **H4c**. Additional tests are performed to test the sensitivity of variable specification.

The variable BGINDEX, which is a measure of the corporate governance strength of the bidder firm, is insignificant and, therefore, does not support hypothesis **H4d**.

The results also show that the coefficient for TSIZE is negative and significant while the variable BSIZE is insignificant at the .23 level and positive. This result is probably due to some multicollinearity in the sample. Additional multicollinearity issues may have also caused the variables BAUDIT and TAUDIT have opposite signs.

Table 21 - Characteristics of Firms Providing More Accurate PE Ratio Forecasts

$$|FE_{PE}| = \beta_0 + \beta_1 BFIN + \beta_2 TFIN + \beta_3 BGINDEX + \beta_4 BSIZE + \beta_5 TSIZE + \beta_6 BAUDIT + \beta_7 TAUDIT + \beta_8 BUWRITER + \beta_9 TUWRITER + \beta_{10} EF + \beta_{11} HORIZON$$

	Coefficient	Standard Error	t-statistic	p-value
Intercept	-0.021	0.904	-0.02	0.983
BFIN	0.020	0.016	1.23	0.274
TFIN	-0.023	0.010	-2.25	0.075
BGINDEX	-0.004	0.029	-0.13	0.900
BSIZE	0.038	0.028	1.35	0.234
TSIZE	-0.089	0.036	-2.45	0.058
BAUDIT	0.582	0.223	2.61	0.048
TAUDIT	-0.218	0.227	-0.96	0.380
BUWRITER	0.033	0.022	1.48	0.198
TUWRITER	0.018	0.049	0.37	0.724
EF	0.199	0.111	1.79	0.134
HORIZON	0.308	0.176	1.74	0.142
N	17			
F(11,5)	2.01			
Prob > F	0.182			
R-squared	0.759			
Adj.-R ²	0.381			

where:

Table 21 (continued)

FE	Absolute value of the Forecast Error of the forward-looking information. Calculated as $ FE = (\text{Forecast} - \text{Actual})/(\text{Actual}) $
BFIN	Bidder firm's Z-score as calculated using Altman's [1968] formula
TFIN	Target firm's Z-score as calculated using Altman's [1968] formula
BGINDEX	G-Index from bidder firm from Gompers <i>et al.</i> [2003]
BSIZE	Dichotomous variable equals 1 if the target firm uses a Big 4/5 auditor
TSIZE	Rank of Bidder Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters
BAUDIT	Dichotomous variable equals 1 if the bidder firm uses a Big 4/5 auditor, 0 otherwise
TAUDIT	Dichotomous variable equals 1 if the target firm uses a Big 4/5 auditor, 0 otherwise
BUWRITER	Rank of the Bidder Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters
TUWRITER	Rank of the Target Firm's Underwriter as reported in the Carter-Manaster Reputation Rankings of Underwriters
EF	Dichotomous variable equals 1 if either the bidder or target firm issued earnings forecast in the previous period, 0 otherwise
HORIZON	# of days between earnings forecast and actual earnings / 365

To test for the sensitivity to specification of the financial strength variables, equation (9) is re-estimated using dichotomous variables for BFIN and TFIN that are equal to 1 if the financial strength variable is above the mean and 0 otherwise. As in the EPS sample, the variable TFIN becomes insignificant indicating that the financial strength variable is sensitive to specification. This finding provides inconclusive results for hypotheses **H4c**.

Additionally, with this estimation, the variable BGINDEX is negative and significant at the 0.1 level. As with the results of the PE Ratio sample examining factors that decrease forecast bias, the results of the PE Ratio sample used to examine

characteristics of firms with greater forecast accuracy are inconclusive (**H4d**).

Table 22 provides a summary of findings and chapter 6 summarizes and draws conclusions from the results of the analysis.

Table 22 - Summary of Findings

H1a: <i>Voluntary disclosure of earnings estimates increases the likelihood that a merger will be completed.</i>	Not Supported
H1b: <i>There is an association between the financial strength of the bidder firm and the likelihood of the merger being completed.</i>	Negative
H1c: <i>There is an association between the financial strength of the target firm and the likelihood of the merger being completed.</i>	Not Supported
H2a: <i>There is an association between the financial strength of the bidder firm and the decision of the merging firms to jointly choose to voluntarily disclose earnings estimates.</i>	Positive
H2b: <i>There is an association between the financial strength of the target firm and the decision of the merging firms to jointly choose to voluntarily disclose earnings estimates.</i>	Not Supported
H2c: <i>There is an association between the strength of the corporate governance of the bidder firm and the decision of the merging firms to jointly choose to voluntarily disclose earnings estimates.</i>	Not Supported
H2d: <i>There is an association between the strength of the corporate governance of the target firm and the decision of the merging firms to jointly choose to voluntarily disclose earnings estimates.</i>	Not Supported
H2e: <i>There is an association between target firms that have CEO golden parachutes and the decision of the merging firms to jointly choose to voluntarily disclose earnings estimates.</i>	Not Supported
H3a: <i>For voluntarily disclosing firms, the EPS forecast of the new firm is positively biased.</i>	Supported
H3b: <i>For voluntarily disclosing firms, the PE Ratio forecast of the new firm is positively biased.</i>	Not Supported
H3c: <i>Lower EPS forecast bias of the combined firm is associated with merging firms that have stronger financial characteristics.</i>	Inconclusive
H3d: <i>Lower EPS forecast bias of the combined firm is associated with merging firms that have stronger corporate governance characteristics.</i>	Supported
H3e: <i>Lower PE Ratio forecast bias of the combined firm is associated with merging firms that have stronger financial characteristics.</i>	Not Supported
H3f: <i>Lower PE Ratio forecast bias of the combined firm is associated with merging firms that have stronger corporate governance characteristics.</i>	Not Supported
H4a: <i>EPS forecast accuracy of combined firm is associated with merging firms that have stronger financial characteristics.</i>	Inconclusive
H4b: <i>EPS forecast accuracy of combined firm is associated with merging firms that have stronger corporate governance characteristics.</i>	Supported
H4c: <i>PE Ratio forecast accuracy of combined firm is associated with merging firms that have stronger financial characteristics..</i>	Inconclusive
H4d: <i>PE Ratio forecast accuracy of combined firm is associated with merging firms that have stronger corporate governance.</i>	Inconclusive

6. SUMMARY AND CONCLUSIONS

Most voluntary disclosure studies have one thing in common; the studies examine management decisions to provide voluntary information to the shareholders of their firm. In the case of a merger or acquisition, management is now providing information on what could be considered a new firm: a new firm that consists of both the bidder and the target firms. Mergers and acquisitions provide a unique setting in which management may decide to voluntarily disclose earnings estimates for reasons other than just providing an earnings benchmark.

The objective of this study is to examine the characteristics of those firms that voluntarily disclose earnings estimates in the proxy-prospectus when completing a merger or acquisition. With management already agreeing on its post-merger compensation, there is an incentive for management to provide shareholders with enough information to ensure that the merger is completed. These voluntarily disclosed earnings estimates provide one way for management to provide additional information to their shareholders.

6.1 Summary and Implications

The first test of this study examines the effects that the managements' voluntary disclosure decisions and the bidder and target firms' financial characteristics have on whether or not the merger is completed. Results suggest that shareholders of bidder firms that are weaker financially are more likely to approve a merger. One reason that these shareholders of weaker firms may vote in favor of the merger is to try to get stronger by merging with another firm. By merging, firms are able to combine their resources to gain market share and reduce costs by creating synergy between the two firms.

Examining the characteristics of the firms that jointly choose to voluntarily disclose earnings estimates provides insight as to which types of firms are more likely to provide earnings estimates during a merger or acquisition. Results suggest that bidder firms with stronger financial characteristics are more apt to voluntarily disclose earnings estimates. While this finding may suggest that firms that are stronger financially provide more information to their shareholders to reduce information asymmetry, an alternative explanation could be that bidder firms that are stronger financially may need to provide more information to convince their shareholders that the target firm will provide value to the bidder firm.

Next, this study examines the forecast error of the earnings forecasts to determine if the earnings forecasts are biased. Results indicate that for those firms that provided EPS forecasts, the forecasts were optimistically biased. The finding that firms with stronger financial characteristics are more likely to provide earnings forecasts combined with the result that the EPS forecasts are optimistically biased suggest that these voluntary EPS forecasts may be used to enhance the future outlook of the combined firm. Enhancing the future outlook of the combined firm could persuade shareholders of both the bidder and target firms to vote in favor of the merger.

Lastly, the characteristics of the firms that provided voluntary earnings estimates were examined to find that firms with stronger corporate governance provided more accurate and less biased EPS forecasts. This finding indicates that corporate governance is doing what it was intended to do - protect shareholders' rights. If firms with stronger corporate governance provide more accurate and less biased forecasts, then management must be governed in a way to enhance the accuracy of the information provided to their shareholders.

6.2 Limitations

There are several limitations associated with this study. Being that this study examines the joint proxy-prospectus (form S-4) of a merger or acquisition, the sample is a small percentage of the number of announced mergers. Firms must provide a joint proxy-prospectus whenever stock is included in the transaction to complete the merger. Therefore, a joint proxy-prospectus is only filed for approximately 5% of the total mergers announced.

Additionally, to provide for a more manageable dataset, only the mergers with transaction values of \$1,000,000 or more were examined. This creates a large firm bias that may affect the results.

Lastly, the years 2002 and 2003 were used in the sample to provide the two most recent years that earnings data could be gathered for three years after the merger announcement. While there is no reason to believe that these two years would provide results that would be significantly different from other years, there is a possibility that a difference may exist.

6.3 Future Research

This study has created a unique data set which will be expanded throughout my career. Mergers and acquisitions provide a unique and interesting setting in which management and shareholder incentives may not be aligned.

As the data set is expanded, there are many questions that could be answered involving the voluntary disclosure provided during a merger or acquisition. These questions may consist of how analysts or institutions use the voluntary information or how these forecasts may affect the future performance of the new firm.

The following are examples of questions that may be asked of analysts' use of the voluntary information. Are analysts able to use the forecasts to determine the future performance of the combined firm? Do analyst base buy and sell recommendations on the forecasts?

Questions involving the use of the voluntary information from institutional ownership include: how does institutional ownership react to the forecasts? Do the institutions sell the stock once the firms issue a joint earnings forecast? Are the institutions able to determine which forecasts are optimistically biased? Each of these questions examines how accounting users outside of the firm view the voluntary information provided by management.

The merger and acquisition setting is different from the normal financial accounting and reporting setting in that managers have incentives other than just providing an earnings benchmark to their shareholders. Managers are providing information on a new firm that has not yet been created. This dataset provides a foundation in which these differences in management incentives can be investigated.

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VITA

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Mr. Wandler joined the accounting doctoral program at Louisiana State University. While completing his doctoral requirements at LSU, Scott also taught accounting courses at the undergraduate level.

Scott has accepted an Assistant Professor position in the Department of Accounting at the University of New Orleans.