Financial Statement Comparability and the Efficiency of Acquisition Decisions

Ciao-Wei Chen  
Tippie College of Business  
The University of Iowa  
ciao-wei-chen@uiowa.edu

Daniel W. Collins  
Tippie College of Business  
The University of Iowa  
daniel-collins@uiowa.edu

Todd Kravet  
Naveen Jindal School of Management  
University of Texas at Dallas  
kravet@utdallas.edu

Richard D. Mergenthaler  
Tippie College of Business  
The University of Iowa  
rick-mergenthaler@uiowa.edu

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Abstract
This study examines whether acquirers make better acquisition decisions when target firms’ financial statements exhibit greater comparability with industry peer firms. We predict and find that acquirers’ make more profitable acquisition decisions when targets’ financial statements are more comparable—as evidenced by higher merger announcement returns, higher acquisition synergies, and better future operating performance. We also find that post-acquisition goodwill impairments and post-acquisition divestitures are less likely when target firms’ financial statements are more comparable. Finally, we find the effect of targets’ comparability is more pronounced when acquirers’ ex-ante information asymmetry is higher and when acquisitions are accomplished via tender offers to target shareholders. In total, our evidence suggests targets’ financial statement comparability helps acquirers make better acquisition-investment decisions and fosters more efficient capital allocation.

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1. Introduction

This study examines whether acquirers make more profitable acquisition-investment decisions when their targets’ financial statements are more comparable to peer firms. We posit that comparability is an important attribute of accounting information that allows acquirers to better understand the underlying economic events of the target and to better evaluate the target relative to other firms. As a result, we expect that acquirers will better screen potential targets and will more accurately assess the value of potential targets that exhibit greater accounting comparability. Further, we posit that greater accounting comparability lowers information asymmetry between outside capital suppliers and management, facilitating improved oversight and monitoring of acquirers’ acquisition-investment decisions.

Examining the relation between target firms’ financial statement comparability and acquisition decisions is important for two reasons. First, there is very little empirical evidence to back up the claim of the Securities Exchange Commission (SEC) and the Financial Accounting Standards Board (FASB) that comparable accounting information facilitates the efficient allocation of capital. The FASB Statement of Financial Accounting Concepts No. 8 (FASB, 2010) indicates that accounting comparability enhances the usefulness of accounting information by allowing “users to identify and understand similarities in, and differences among, items.”¹ The SEC echoes this point in an SEC Concept Release (2000) stating that comparability facilitates capital allocation and nurtures investor confidence. Although both the FASB and SEC emphasize the usefulness of financial statement comparability, extant literature that examines the costs and benefits of this enhancing characteristic of financial reporting is relatively scarce (Schipper, 2003).² In this paper, we add to the literature that seeks to understand the benefits of financial statement comparability by directly examining the economic consequences of improved comparability on firms’ acquisition-investment decisions.

¹ One objective of financial reporting is to provide financial information that is useful to investors, creditors, and other potential users in making decisions about providing resources to the entity (FASB, 2010).
² De Franco et al. (2011) is a notable exception. They show that financial statement comparability benefits financial analysts by lowering the cost of gathering and analyzing accounting information.
Second, mergers and acquisitions involve large resource allocations that can significantly affect shareholder wealth. Acquisitions are among the largest and most readily observable forms of corporate investments. According to Thomson Financial’s Institute of Mergers, Acquisitions, and Alliances, the total value of announced M&A transactions was greater than $1,500 billion in 2011. Given the dollar magnitude of M&A transactions, it is important to understand the factors that affect the efficiency of these acquisition decisions.

Managers use accounting information when they assess the viability of potential acquisition targets. During preliminary due diligence, acquirers have limited access to inside information about the target firm and thus must rely on public information when selecting potential targets and making initial valuation decisions. Further, the first step of in-depth due diligence is a review of the target’s financial statements where the acquirer compares and contrasts the target’s financial statements with those of the target’s competitors to identify risk areas that need to be examined further (Bruner, 2004). This review largely dictates the focus of the in-depth due diligence and is especially important because the acquirer cannot assess every aspect of the target due to cost and time constraints (Bruner, 2004). We expect that comparability plays a role in both the preliminary due diligence stage and the financial statement review that dictates the focus of the in-depth due diligence. We also expect that greater accounting comparability lowers information asymmetry between the board and management, facilitating improved oversight by the board in acquisition-investment decisions. Thus, we predict that greater accounting comparability facilitates meaningful evaluation of targets that aids boards and managers in selecting, more precisely valuing, and more effectively evaluating potential targets in the due diligence process.

We measure target firm-specific financial statement comparability based on the approach developed by De Franco et al. (2011). Similar to their study, we define comparability as the closeness between two firms’ accounting systems: firm A and B are comparable if they produce similar financial statements for a given set of economic events. We first estimate comparability for all firm i-j pairs in the same two-digit SIC code. Then, we use the mean value of target firm i’s firm-pair comparability scores as our firm-specific financial statement comparability measure. This measure captures target firm i’s
financial statement comparability relative to its peers in the same two-digit SIC code, which is more likely to be the benchmark sample used by acquirers to compare and contrast potential targets’ accounting information.

Following the prior literature, we gauge the efficiency of acquisition decisions in three ways. First, we measure the market’s assessment of acquisition profitability as the acquirers’ three-day abnormal returns around acquisition announcements (e.g., Morck et al., 1990; Masulis et al., 2007; Francis and Martin, 2010; McNichols and Stubben, 2012). Second, we use the combined three-day value-weighted abnormal return of the acquirer and target to evaluate whether acquisition decisions are value-enhancing for the combined shareholder group. Prior research suggests that this measure captures expected synergies or value creation from acquisitions (e.g., Harford et al., 2012; Ahern et al., 2012). These first two measures capture the market’s expectation of both ex-ante investment selection and post-acquisition decision-making. Our third measure captures changes in post-acquisition operating performance, which is an ex-post measure of acquisition-investment profitability (Francis and Martin, 2010). If financial statement comparability indeed helps acquiring firms make better acquisition decisions, we expect target firms’ pre-acquisition financial statement comparability to be positively related to acquirer stock returns, expected synergies, and post-acquisition firm performance.

We test our predictions using a large sample of U.S. mergers and acquisitions of publicly listed firms over the 1983 to 2009 time period. Results from market reaction analyses are consistent with our expectations. We find that acquiring firms experience higher stock returns around the acquisition announcement dates when target firms exhibit greater financial statement comparability and that the market expects higher synergies for acquisitions of targets that exhibit greater financial statement comparability. We also find that firms acquiring targets with greater accounting comparability exhibit higher performance in the post-acquisition period relative to the pre-acquisition period. Finally, we find that acquirers are less likely to record goodwill impairments or divest the target in the years following the acquisition when targets have greater accounting comparability. These findings suggest that comparability allows acquirers to better evaluate, value, and select target firms, leading to better acquisition outcomes.
Next, we examine whether target accounting comparability is more useful to outside investors and boards in monitoring management’s merger and acquisition decisions when there is higher ex-ante information asymmetry for the acquirer. We predict that target accounting comparability will have a greater effect on acquisition investment efficiency when the acquirers’ information environment makes it difficult to assess whether the success or failure of the acquisition is attributable to management (i.e., higher ex-ante information asymmetry). Consistent with Francis and Martin (2010), we use two proxies to measure high ex-ante information asymmetry: (1) acquirers’ bid–ask spreads and (2) acquirers’ stock return volatility. We find that the relation between target comparability and acquisition profitability is stronger when the acquirers’ bid-ask spreads are higher or when acquirers operate in more volatile operating environments. We also find that the effect of target comparability on acquisition profitability is more pronounced when the acquisition is accomplished via a tender offer made directly to target shareholders, which reflects situations where acquirers’ access to private target information is more limited.

Finally, we perform three robustness tests to assess the internal validity of our results. First, we investigate whether our results are driven by other financial reporting attributes of the target and acquirer. We view comparability as a distinct dimension of accounting information that allows for better across-firm comparisons. However, financial statement comparability is correlated with other earnings attributes such as persistence, predictability, and accrual quality (Peterson et al., 2012). In addition, prior studies show that target firms’ accrual quality and acquirers’ conditional conservatism are related to acquisition outcomes (e.g., McNichols and Stubben, 2012; Raman et al., 2013; Francis and Martin, 2010; Kravet, 2012). Therefore, it is not clear whether target comparability captures a distinct dimension of accounting information or is simply picking up the effects of these other earnings attributes. However, our market reaction and post-acquisition performance results remain statistically and economically significant after including targets’ accrual quality and acquirers’ conditional conservatism as additional controls. This suggests that the effects of targets’ comparability are incremental to these two earnings attributes. This
evidence is also consistent with comparability capturing a different decision-useful dimension of accounting information.

Second, we assess whether our results are robust to using alternative proxies of accounting comparability. This is especially important in our setting as the De Franco (2011) comparability measure is relatively new to the literature. Thus, we rerun our main analyses using four alternative measures: two proposed by De Franco et al. (2011) and two proposed by Barth et al. (2012, 2013). We find that our results are robust to using these alternative measures and remain statistically and economically significant when we substitute these other proxies for the main De Franco et al. (2011) measure.

Third, we assess whether the De Franco et al. (2011) measure captures similarities in the underlying economics between firms in an industry rather than similarities in how firms account for transactions. We do this a number of ways. First, in our main analyses, we control for the extent to which target firms’ returns covary with that of other firms in their industry. In addition we control for how firms’ stock returns covary with market returns (i.e., stock return synchronicity). We find that the inclusion of these controls does not affect any of our results. Finally, we conduct a falsification test by replacing earnings with operating cash flows in estimating comparability. Cash flow comparability arguably captures more of the commonality of the underlying economics of firms’ operations and has less to do with the comparability of firms accounting choices because operating cash flows removes the effect of accruals from earnings. When we use cash flow comparability, we do not find a statistically or economically significant relation between this comparability measure and acquisition profitability. This finding supports our claim that our results capture how accounting comparability, which manifests itself primarily through accruals, affects acquisition profitability and is not picking up similarities in the underlying cash flows.

This paper makes several contributions. First, we contribute to the literature investigating the economic consequences of financial reporting, especially the effect of accounting information on the efficient allocation of capital (e.g., Biddle and Hilary, 2006; McNichols and Stubben, 2008; Biddle et al., 2009; Francis and Martin, 2010; Kravet, 2012). Prior literature in this area typically examines the effect
of *firm-specific* accounting attributes (e.g., accrual quality and accounting conservatism) in contrast to our study that examines an *across-firm* accounting attribute. While these *firm-specific* attributes are related to comparability, the latter captures an important and relatively unique dimension that is commonly overlooked when assessing the decision usefulness of accounting information (i.e., similarities of accounting systems across firms (De Franco et al., 2011)). We extend this literature by finding that the effect of accounting comparability is incremental to other *firm-specific* earnings attributes suggesting comparability captures a unique attribute of accounting information that helps acquirers make better acquisition decisions and, hence, fosters more efficient capital allocation.

Second, our results are relevant to standard setters and regulators. While both the FASB and the SEC emphasize the importance and usefulness of financial statement comparability, much of the prior research focuses on value relevance and reliability rather than comparability (e.g., Barth, 1994; Richardson et al., 2005).\(^3\) Schipper (2003) calls for research on the benefits of comparability. Our paper answers this call by examining the economic consequences of comparability and empirically shows that increased comparability is associated with improved acquisition decisions. This evidence is consistent with the assertions made by the FASB that financial statement comparability enhances the decision usefulness of accounting information (SFAC 8). Hence, our study is of interest to standard setters and regulators in designing accounting standards to achieve comparability.

Third, empirical proxies for financial statement comparability have been developed only recently (De Franco et al., 2011). Consequently, there has been limited work to assess the construct validity of these empirical proxies. Our study seeks to validate several alternative proxies for financial statement comparability that have appeared in recent literature by demonstrating their relation with widely accepted proxies for investment efficiency, which are alleged to be direct outcomes of accounting comparability.

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\(^3\) See Holthausen and Watts (2001) and Barth et al. (2001) for a review on value relevance literature.

\(^4\) In FASB Statement of Financial Accounting Concepts No. 8, reliability is replaced by faithful representation. We use reliability here in order to be consistent with prior literature.
Finally, this study contributes to the mergers and acquisitions literature by enhancing our understanding of how accounting information facilitates acquisition decisions. There is a large body of research in finance that examines how attributes of bidders that proxy for various agency problems affect value creation or value destruction of acquisition investment decisions (Jensen, 1986; Lang et al. 1991; Masulis et al., 2007; Malmendier and Tate, 2008; Harford, et al., 2012). In this paper, we shift the focus to the target and demonstrate that an attribute of the target’s accounting information environment, namely comparability, can enhance acquisition investment decisions after controlling for acquirer attributes and deal characteristics shown in prior research to be related to ex-ante and ex-post measures of acquisition investment efficiency. Therefore, our study has implications for researchers, regulators, and practitioners who are interested in how mergers and acquisitions affect investment efficiency. Our findings suggest that target accounting comparability is an important determinant of the efficiency of acquisition decisions.

The remainder of the paper is organized as follows. Section 2 reviews relevant prior literature, provides a brief discussion of the merger and acquisition process, and develops the hypotheses. Section 3 discusses the variable measurements and Section 4 outlines the research design. Section 5 presents the sample selection and provides descriptive statistics. Section 6 presents our main empirical findings and several supplemental tests, and Section 7 concludes.

2. Related literature and hypotheses development

2.1 Accounting information and capital allocation

Prior studies suggest that accounting information is critical for capital markets to function efficiently (e.g., Bushman and Smith, 2001; Healy and Palepu, 2001; Lambert et al., 2007). Efficient capital allocation requires that capital be invested in value creating projects and withdrawn from value destroying projects (Bushman et al., 2011). Financial disclosures facilitate efficient capital allocation by reducing frictions from information asymmetry and agency problems. Accounting information provides firm-specific information to investors, regulators, and other stakeholders in the economy. Accounting information also provides a rich set of variables (e.g., earnings, cash flows, and balance sheet values) that
allow capital providers to evaluate alternative investment opportunities and monitor the use of their
capital (Bushman and Smith, 2001; Beyer et al., 2010; Armstrong et al., 2010). Therefore, accounting
information affects capital allocation because it enables investors to identify value creating opportunities
and disciplines managers on project selection and execution.5

Extant empirical studies (e.g., Biddle and Hilary, 2006; McNichols and Stubben, 2008; Biddle et
al., 2009; Francis and Martin, 2010; Bushman et al., 2011; Kravet, 2012; McNichols and Stubben, 2012)
provide evidence that attributes of accounting information affect the efficient allocation of capital. This
line of research has taken two forms. “Investment efficiency” research broadly examines the relation
between the quality of accounting information and corporate investment decisions using models of over-
and under-investment. The overall conclusion from this line of research is that higher quality financial
reporting by firms improves their investment efficiency by reducing the information asymmetry between
managers and shareholders (e.g., Biddle and Hilary, 2006; McNichols and Stubben, 2008; Biddle et al.,
2009).

Another branch of research uses the acquisition-investment decision context to examine the effect
of acquirers’ and targets’ accounting information attributes on the profitability and efficiency of
acquisition decisions. Francis and Martin (2010) and Kravet (2012) examine acquirers’ conditional
accounting conservatism and find that conservative reporting provides managers of acquiring firms with
incentives to avoid risky and negative NPV projects because economic losses are recorded in a more
timely manner. Other studies examine whether targets’ firm-specific accounting quality is related to
acquisition profitability, takeover premiums, method of payment, and the likelihood of deal termination
(Marquardt and Zur, 2013; McNichols and Stubben, 2012; Raman et al., 2013; Skaife and Wangerin,

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5 Bushman and Smith (2001) suggest that accounting information affects economic performance through three
channels: (1) better project identification by manager and investors; (2) discipline on project selection and
expropriation by managers; and (3) reduction in information asymmetries among investors. See their paper for more
details.
We extend these studies by examining an across-firm attribute of targets’ accounting information, and test whether the effect of accounting comparability is incremental to other *firm-specific* accounting information attributes. Overall, the above studies suggest that qualitative characteristics of accounting information affect capital allocation through their valuation and governance roles.

### 2.2 The role of accounting information in mergers and acquisitions

Before developing our hypotheses, we first provide a brief overview of the merger and acquisition process to facilitate our discussion of how comparability can affect acquisition-investment decisions. More specifically, this discussion allows us to highlight how targets’ financial statement comparability affects the selection of potential targets, the valuation of targets, and the final price offered for the target. In sum, we posit that financial statement comparability provides a rich set of information that helps acquirers make better selection decisions, more accurately value potential targets, and facilitates better board and investor oversight, thus improving acquisition-investment decisions.

Figure 1 presents a timeline of the acquisition process and is delineated by the extent of public versus private information used in the decision-making process. In the early stages of the acquisition process, the acquirer identifies and evaluates potential target firms by performing preliminary due diligence. Preliminary due diligence is generally performed by a small corporate development team of the acquirer so as to limit information leakage to competing bidders and potential targets. This corporate development team evaluates potential targets by performing tasks such as evaluating the costs and benefits of the transaction, calculating initial valuations of the target firm, preparing pro-forma financial statements, and analyzing the target’s financial statements. The comparability measure we employ in this study takes into account the similarities between firms’ accounting systems; therefore, comparability captures across-firm information (De Franco et al., 2011).

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6 Marquardt and Zur (2010), McNichols and Stubben (2012), and Raman et al. (2013) examine target’s accrual quality while Skaife and Wangerin (2013) examine a composite measure of target’s accounting quality. We refer these earnings attributes as firm-specific financial reporting attributes because they are measured based on firm-specific accounting information without considering other firms’ information. The comparability measure we employ in this study takes into account the similarities between firms’ accounting systems; therefore, comparability captures across-firm information (De Franco et al., 2011).

7 Our review of the acquisition process is developed from several sources, including Lajoux and Elson (2002), Bruner (2004), Frankel (2005), Betton et al. (2008), Cain et al. (2012), and Wangerin (2012).

8 Alternatively, the preliminary stage of due diligence can be outsourced to external advisors, such as investment bankers (Bruner, 2004). Regardless, the evaluation that takes place at this stage is highly dependent on publicly available information, and financial statements are the main source of information (Lajoux and Elson, 2002; Bruner, 2004; Frankel, 2005).

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statements of the combined firm, analyzing peer firms, and analyzing major customers and suppliers (Bruner, 2004). During this stage of the due diligence process, the acquirer’s corporate development team relies on publicly available accounting information for both valuation and verification purposes. In fact, Lajoux and Elson (2002) argue that publicly available accounting information obtained from a review of the target firm’s financial statements is the “single most important aspect of due diligence” because it is one of the major inputs to valuation of a target.9, 10

One of the primary methodologies for valuing targets during early stages of the M&A process is comparable company analysis (Bruner, 2004; Rosenbaum and Pearl, 2009). The basic premise of comparable company analysis is that comparable peer firms provide a highly relevant reference point for valuing a given target due to the fact that they share key business and financial characteristics, performance drivers, and business risks. Peer companies are benchmarked against one another and against the target based on various financial metrics of performance. Trading multiples are then applied to these accounting performance metrics (e.g., P/E, M/B, EV/EBITDA) for comparable companies to determine a range of values for the target. Comparable company analysis and target valuation is enhanced when target companies make accounting choices that are comparable to choices of peer group firms.

[Insert Figure 1 Here]

After preliminary due diligence has been performed, the acquirer narrows their list of potential targets and signs a confidentiality agreement with targets they want to pursue further. After the confidentiality agreement is signed, in-depth due diligence begins. At this stage, acquirers have access to

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9 When the target firm initiates the acquisition, the target is likely to provide more private information, albeit optimistically biased, to a potential acquirer. However, the acquirer still utilizes public information in its evaluation and compares and contrasts the target with its peers to generate an unbiased opinion of the target. Further, prior research (e.g., Cain et al., 2012) finds that acquirers generally initiate the transaction (i.e., only 36% of acquisitions in their sample are initiated by target firms).

10 Target firms can also be sold through auction. Prior literature (e.g., Boone and Mulherin, 2007) classifies any transaction with more than one bidder as an auction while formal auctions involve set rules where bidding takes place over a restricted time period at designated locations. With auctions the target firm must balance offering enough disclosure of private information to attract bidders and a sufficient offer price but limiting the cost of disclosing proprietary information to competing firms. Formal auctions also vary in terms of the rights and obligations of the winning bidder and target firm with substantial negotiation between the parties occurring after the auction bidding process. Nevertheless, public information is likely to be an important source of information in the bidding process of auctions.
private information from the target, but acquirers’ access to private information is limited for a number of reasons. First, the offer price is not set; therefore, targets have an incentive to put their best foot forward and thus the information they provide is likely optimistic. Therefore, despite the fact that the acquirer has access to more private information, publicly available information still plays an important role because it enables the acquirer to compare and contrast the information provided by the target to independent sources, including peer firm financial statements. This comparison is vital in obtaining an unbiased view of the target firm. Second, cost and time constraints limit the amount of private information that can be obtained and reviewed during in-depth due diligence. As a result, the acquirer must efficiently hone in on the private information they desire to examine. Not surprisingly, a review of the target’s financial statements is a vital first step performed during the in-depth due diligence process (Bruner, 2004). In this review, the acquirer compares and contrasts the target’s financial statements with those of the target’s competitors to identify risk areas that need to be examined further. This review is especially important because it largely dictates the focus of the in-depth due diligence in which the acquirer updates their initial valuations and determines an offer price (Bruner, 2004).

In determining the offer price for publicly-held targets the acquirer must determine the amount to offer in excess of the target’s current market value (i.e., premium) such that target shareholders will approve the sale of the target (i.e., so the bid is equal to or greater than the target’s reservation price). The amount of the premium offered is in part a function of the value the acquirer expects to create from combining the firms. Comparing target firms with their peer firms provides the acquiring manager with insight into the potential synergies that can be created. For example, if a potential target firm is underperforming relative to its peers, then the acquirer can assess the value that can be created by making efficiency improvements to the target firm. However, if target accounting information is less comparable with that of peer firms then we expect that the usefulness of peer firm comparisons is degraded.
Following the in-depth due diligence, the acquirer and target either negotiate transaction terms and sign an acquisition agreement or abandon negotiations.\textsuperscript{11} Once the acquisition agreement is signed there is a public disclosure of the acquisition and transactional due diligence begins. Acquirers have greater access to target firms’ private information at this stage and the main purpose of transactional due diligence is to verify the accuracy of the target firms’ representations and warranties that stem from the financial statements and other disclosures during negotiations. Required regulatory approvals are also made in this stage before the transaction can be completed.

2.3 Target’s comparability and the efficiency of acquisition decisions

Publicly available financial statements are a vital source of information used in selecting and valuing potential targets. Thus, it is important to understand how attributes of public accounting information, particularly accounting comparability, affect managements’ merger and acquisition decisions. We assert that comparability is key in this process because it helps acquirers to understand and predict the economic events of the target, lowers the cost of acquiring information, and makes it easier to evaluate the target relative to other firms—especially relative to other potential targets.

De Franco et al. (2011) argue that greater financial statement comparability helps individuals to understand and predict firms’ future performance. They argue that this is particularly important for external stakeholders, such as analysts, in estimating firms’ expected earnings. Consistent with this assertion, they find that analysts’ forecasts are more accurate and less disperse when accounting information of the company being considered is more comparable to that of peer firms. In our setting, if target firms’ accounting information is more comparable with their peers, acquirers will be able to make sharper inferences about economic similarities and differences across firms. Through meaningful comparisons with industry peers, acquirers are in a better position to predict target firms’ future

\textsuperscript{11} If the directors of the target firm do not agree to negotiate with an acquirer then a tender offer can be made directly to the target firm shareholders. Tender offers that do not involve negotiation are more likely to be based on publicly available information because bidders do not have access to internal target firm information before making an offer.
performance and, in turn, the combined performance of the acquirer and target. This should then lead to more accurate and precise assessments of targets’ value, lowering the likelihood of overpayment.

Prior literature (De Franco et al., 2011; Choi et al., 2013) also contends that increased accounting comparability lowers the cost of acquiring information and thus increases the quantity and quality of information about the firm. Choi et al. (2013) find that firms’ stock price contains more firm-specific information when those firms exhibit greater accounting comparability. This evidence suggests that comparability expands the information set available to potential investors. This is particularly important in the preliminary due diligence stage because acquirers’ must rely on public accounting information to select potential targets and make initial valuation decisions. Further, such information is important even in the latter stages of in-depth due diligence because the target has incentives to maximize the offer price and thus could provide biased private information to the acquirer. Having accounting information that exhibits greater comparability with peer firms should help bidder management to assess the validity of the information provided to them in later stages of the due diligence process. Overall, given the findings of Choi et al. (2013), we expect that comparability enlarges and enriches the information set available to the firm and facilitates better merger and acquisition decisions.

Finally, we expect financial statement comparability allows acquirers to better evaluate the target relative to other potential targets. This benefit is likely most heavily relied on when acquirers assess the value of the target using a comparable company analysis (Bruner, 2004; Rosenbaum and Perl, 2009). In this analysis, the acquirer compares the target to peer firms to provide a reference point for valuation. This process yields a range of possible valuations for the target. If financial statement comparability allows more meaningful comparisons and helps the acquirer identify a more relevant set of peer firms, then the valuation of the target firm is likely to be more precise and accurate.

Given these arguments, we expect acquisitions of target firms with more (less) comparable accounting information to be more (less) profitable for acquirers and to create greater (lower) value for the combined shareholder group because they select better (worse) target firms and value target firms more (less) precisely and accurately. We also expect greater comparability will lead to better acquisitions,
which in turn will lead to better post-acquisition operating performance of the acquirer. We formally state the first set of hypotheses as follows (in alternative form):

**H1a**: Target firms’ pre-acquisition financial statement comparability is positively related to acquirer abnormal returns around acquisition announcements.

**H1b**: Target firms’ pre-acquisition financial statement comparability is positively related to expected synergies from business combinations.

**H1c**: Target firms’ pre-acquisition financial statement comparability is positively related to post-acquisition operating performance of the acquirer.

2.4 Cross sectional predictions on strength of comparability effects on acquisition efficiency

The previous section focuses on tests of the average effect of target comparability on acquisition efficiency for targets with high versus low accounting comparability. This section develops predictions about how the strength of the effects of target comparability may vary as a function of the acquirer’s information environment and whether the acquisition is accomplished through a tender offer to target shareholders.

We posit that target comparability likely plays an important role in the boards’ and outside investors’ ability to monitor managements’ merger and acquisition decisions. Such monitoring is important because prior literature suggests that the incentives of management and shareholders are not always aligned (Jensen and Meckling, 1976). Further, in spite of the due diligence process, a substantial number of acquisitions are value-destroying—especially when the target is public and the payment method is stock. One prominent explanation for this phenomenon is principal-agent conflicts (Jensen, 1986).\(^{12}\) The principal-agent conflict explanation argues that managers engage in value destroying acquisitions to obtain personal benefits. Jensen (1986) argues that this is particularly likely to occur when acquirers have limited positive NPV projects and have excess free cash flow. Prior literature finds evidence consistent with managers having incentives to make value destroying acquisitions to engage in

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\(^{12}\) We note that managerial hubris is another prominent explanation, but do not believe that comparability plays a role in this setting because comparability will not eliminate managements’ overly optimistic valuations of the target.
empire building (Jensen 1986), increase compensation (Murphy, 1985; Yim, 2013), and diversify their human capital risk (Morck et al., 1990).

The above noted agency problems are magnified or more likely to manifest in settings where monitoring of managements’ decisions is difficult due to information asymmetry or volatile operating environments (Duchin and Schmidt, 2013; Masulis et al., 2007; Chen et al., 2007; Francis and Martin, 2010; Masulis et al., 2009). In such settings it becomes more difficult to monitor management’s acquisition decisions due to a lack of timely information or difficulty in parsing management’s performance from the effects of a volatile operating environment. Thus, we expect target firms’ comparability to be particularly important in settings where investors of acquiring firms face greater ex-ante information asymmetry and/or when acquiring firms’ operate in more volatile environments. Thus, we predict that the effect of targets’ comparability on the profitability of acquisition decisions will be more pronounced when monitoring is inhibited by information asymmetry or volatility in the acquirers’ operating environment. We formally state this second set of hypotheses as follows (in alternative form):

**H2a**: The effect of target firms’ pre-acquisition financial statement comparability on acquisition profitability is more pronounced when there is greater information asymmetry between acquirers’ outside investors and management.

**H2b**: The effect of target firms’ pre-acquisition financial statement comparability on acquisition profitability is more pronounced when acquirers’ operating environment is more volatile.

Comparable target accounting information is likely to be more important when acquirers’ access to private information about the target is more limited, which is likely the case when the acquisition is accomplished through a tender offer made directly to target shareholders. This leads to the following prediction:

**H2c**: The effect of target firms’ pre-acquisition financial statement comparability on acquisition profitability is more pronounced when the acquisition is accomplished via a tender offer to target shareholders.
3. Variable measurement

In the following sub-sections, we discuss the measurements of our three main dependent variables of acquisition efficiency: (1) acquirer abnormal returns at the acquisition announcement (ACQ_CAR); (2) expected synergies from the acquisition (SYNERGY); and (3) post-acquisition performance of the combined entity (ΔROA). We next outline the measurement of our main explanatory variable of interest, target firms’ financial statement comparability (TRG_COMP). Finally, we describe acquirer-, target-, and deal-specific characteristics used as control variables in our analyses (ACQ_controls, TRG_controls, and DEAL_controls).

3.1 Acquirer returns and expected synergies

We measure acquirer announcement returns, ACQ_CAR, using three-day cumulative abnormal returns (CARs) centered on the acquisition announcement date (-1, +1). Abnormal returns are calculated using the market model and CRSP value-weighted returns where the market model parameters are estimated over the period from event day -205 to event day -6. Following Harford et al. (2012), we use the weighted-average of the acquirer and target abnormal returns centered on the acquisition announcement to measure expected synergies created from acquisitions. Specifically, the expected synergies, SYNERGY, are measured as the weighted average of the acquirer and target three-day CARs where the weights are the relative market values of equity of the acquirer and target at the end of the quarter prior to the acquisition announcement.

3.2 Post-acquisition operating performance

In addition to market-based results, we explore the relation between financial statement comparability and the change in operating performance after acquisitions (Healy et al., 1992; Chen et al., 2007; Francis and Martin, 2010; Harford et al., 2012). Following Francis and Martin (2010), change in operating performance is measured as the change in ROA (ΔROA). More specifically, ΔROA is equal to

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13 Our results and inferences remain the same when we use market-adjusted returns where the CRSP value-weighted return (from event day -1 to 1) is subtracted from the acquirers’ return (from event day -1 to 1).
(\overline{\text{ROA}_{t+3}} - \overline{\text{ROA}_{t-3}}), \text{ where } \overline{\text{ROA}_{t+3}} (\overline{\text{ROA}_{t-3}}) \text{ is the average ROA from year } t+1 (t-1) \text{ to year } t+3 (t-3) \text{ and } t \text{ denotes the acquisition completion year. We measure ROA prior to acquisition as the weighted average ROA for the acquirer and the target where the weights are the relative pre-acquisition asset values. Post-acquisition ROA is measured using the ROA of the combined firm. We use three years of data to mitigate the effects of artificial growth due to business combinations (Collins and Kim, 2013) and the effects of divestitures or asset write-downs subsequent to acquisitions.}

3.3 Targets’ financial statement comparability

We follow the empirical methodology of De Franco et al. (2011) to construct our primary measure of firm-level financial statement comparability. Comparability is measured as the closeness between two firms’ accounting systems. We assess whether two firms produce similar financial statements given the same set of economic events by estimating how stock returns map into earnings. Consistent with De Franco et al. (2011), we choose stock returns as a summary measure for the underlying economic events of a company. Similarly, we select earnings as the proxy for financial statements because it is a summary measure of the accounting choices made by individual firms and is a critical element in estimating firm value. We estimate the mapping from returns into earnings for an individual firm \(i\) using the following time-series regression estimated over the 16 quarters of data prior to the acquisition announcement (at the minimum 14 quarters):

\[
Earnings_{it} = \alpha_i + \beta_iReturn_{it} + \epsilon_{i,t}
\]

where \(Earnings\) is quarterly net income before extraordinary items deflated by the market value of equity at the end of the previous quarter, and \(Return\) is the raw stock return during quarter \(t\). The estimated intercept \((\hat{\alpha}_i)\) and slope coefficient \((\hat{\beta}_i)\) are firm-specific accounting system parameters that map economic events into reported earnings numbers for firm \(i\). The accounting function for another firm \(j\) from the same 2-digit industry as firm \(i\) is proxied by \(\hat{\alpha}_j\) and \(\hat{\beta}_j\) (estimated using the earnings and returns for firm \(j\)). When these two accounting systems are applied to firm \(i\)’s return (i.e., \(Return_{i,t}\)), the resulting numbers in the equations below are the predicted earnings (i.e., the expected accounting outcomes) of
firms $i$ and $j$, respectively, for the same economic events (i.e., firm $i$’s returns). Note that the superscript on expected earnings in the equations below denotes which firm’s returns are used, while the subscript indicates which firm’s accounting system parameters are used.

\[
E(\text{Earnings}^i_{it}) = \hat{\alpha}_i + \hat{\beta}_i \text{Return}^i_{it} \quad (2)
\]

\[
E(\text{Earnings}^j_{jt}) = \hat{\alpha}_j + \hat{\beta}_j \text{Return}^j_{jt} \quad (3)
\]

Comparability between firm $i$ and firm $j$ accounting systems ($\text{CompAcct}_{ij}$) is defined as follows:

\[
\text{CompAcct}_{ijt} = \frac{1}{\tau} \sum_{t} \left| E(\text{Earnings}^i_{it}) - E(\text{Earnings}^j_{jt}) \right| \quad (4)
\]

where $\tau$ is the number of quarters in the estimation period. The more comparable the two firms’ accounting systems are, the smaller the difference between the two expected earnings amounts in equation (4). To facilitate interpretation, we multiply the average absolute difference in equation (4) by -1 so that greater (less negative) numbers indicate greater accounting comparability between firms $i$ and $j$. We estimate accounting comparability for each firm $i$ – firm $j$ combination for $J$ firms within the same two-digit SIC industry classification. After estimating each combination of firm $i$ with each firm $j$ in the same industry, we calculate the average accounting comparability score for target firm $i$ for period $t$ with all other firms in the same 2-digit SIC industry and label this as $\text{TRG}_t$. $\text{TRG}_t$ is the firm-specific accounting comparability measure we use to test our hypotheses.

3.4 Control variables

We select control variables based on prior studies that investigate acquisition announcement period returns and post-acquisition performance (e.g., Lang, et al., 1991; Moeller et al., 2004; Martin and Shalev, 2009; McNicols and Stubben, 2012; Raman et al., 2013). The control variables are categorized into three groups: acquirer characteristics ($\text{ACQ}_{\text{controls}}$), target characteristics ($\text{TRG}_{\text{controls}}$), and deal characteristics ($\text{DEAL}_{\text{controls}}$). Both acquirer and target characteristics, unless specified otherwise, are measured at the end of the fiscal year prior to acquisition announcements.

\[\text{We repeated all the analyses reported below using the median values of the target comparability measure and the results are qualitatively similar.}\]
Acquirer characteristics include firm size (\textit{ACQ\_SIZE}), leverage (\textit{ACQ\_LEV}), Tobin’s Q (\textit{ACQ\_TOBIN\_DUM}) that is set to 1 when an acquirer’s Tobin’s Q is less than the median and zero otherwise, return on assets (\textit{ACQ\_ROA}), free cash flow (\textit{ACQ\_FCF}) and an interaction between \textit{ACQ\_FCF} and \textit{ACQ\_TOBIN\_DUM}. We control for acquirer size because prior studies (e.g., Moeller et al. 2004) find that acquirer size is negatively associated with acquirer announcement returns. Moeller et al. (2004) argue that managers of larger corporations are more likely to be entrenched and thus are more likely to make more value-destroying acquisitions, consistent with the hubris hypothesis suggested by Roll (1986). We control for acquirer leverage because monitoring by debt holders is expected to encourage managers to make better acquisition decisions (Maloney et al., 1993). We include Tobin’s Q because prior literature provides evidence that acquirer investment opportunities impact acquirer returns around the acquisition announcement, but the evidence is mixed on whether the relation is positive or negative. Moeller et al. (2004) and Dong et al. (2006) find a negative association between acquirer abnormal returns and Tobin’s Q, while Harford et al. (2012) find a positive association between acquirer Tobin’s Q and the 3-day acquirer abnormal returns around the deal announcement. We include acquirer free cash flow and an interaction between this variable and low versus high acquirer Tobin’s Q because Lang et al. (1991) show that acquisitions are more likely to be value destroying when the acquirer has limited positive NPV investment alternatives (low Tobin’s Q) and higher free cash flow.

We also include size, leverage, Tobin’s Q, and return on assets for target firms as control variables (\textit{TRG\_SIZE}, \textit{TRG\_LEV}, \textit{TRG\_TOBIN}, \textit{TRG\_ROA}) as these target-firm characteristics are potentially related to the synergy benefits of the acquisition. In addition, Bauguess et al. (2009) suggest that external and internal ownership by active blockholders of target firms is positively related to acquirers’ announcement returns and acquisition synergy because active blockholders provide better monitoring of acquirers’ acquisition investment decisions leading to better outcomes. We include targets’ institutional ownership (\textit{BLOCK}) to control for the effect of institutional investors on mergers and acquisitions.
Our measure of targets’ accounting comparability may be affected by similarities in underlying economic events of the target and its peer firms. To control for similarities in underlying economic events we include the correlation of targets’ stock returns and peer firm stock returns (\textit{STOCK\_CORR}) and targets’ stock return synchronicity (\textit{SYNC}) in our empirical models. \textit{STOCK\_CORR} is measured as the stock return correlation between a target firm and its industry peers (all other firms in the same 2-digit SIC) during the same estimation period as accounting comparability. We measure stock return synchronicity, \textit{SYNC}, as the adjusted $R^2$ from a regression of a firm’s daily stock return on the daily market return (Durnev et al., 2004; Barth et al., 2013).\footnote{We also add targets’ stock return volatility and earnings volatility in the regression models as additional controls for targets’ underlying economics. The results remain economically and statistically significant.}

Deal characteristics include the method of payment (\textit{ALL\_CASH}, \textit{ALL\_STOCK}), the relative deal size (\textit{REL\_SIZE}), whether a merger is the result of a hostile takeover (\textit{HOSTILE}), whether the acquisition is a tender offer (\textit{TENDER}), and whether the acquirer and target are from different industries (\textit{DIFFIND}).\footnote{We provide more complete definitions of all variables in Appendix A.} For deal characteristics, we expect cash (stock) deals to be positively (negatively) associated with acquirer abnormal returns and expected synergies at the acquisition date. Myers and Majluf (1984) suggest that a bidding firm will offer stock to finance an acquisition when it believes its stock is overvalued. Jensen (2005) also argues that overvalued acquirers engage in poorer acquisitions because of the agency costs of overvalued equity. We control for diversification because Morck et al. (1990) suggest that managers pursuing private benefits tend to engage in diversifying acquisitions, which lead to lower acquirer returns and synergy.

In supplemental tests, we also control for targets’ earnings quality (\textit{TRG\_AQ}) to mitigate the concern that we simply pick up the effects of targets’ accrual quality on acquirers’ announcement returns and acquisition synergies (e.g., McNichols and Stuben, 2012). Following prior literature (Dechow and Dichev, 2002; McNichols, 2002; Francis et al., 2004; McNichols and Stuben, 2012), we use the standard deviation of residuals from the mapping of accounting accruals into lagged, contemporaneous and lead
operating cash flows to measure a target firm’s accrual quality.\textsuperscript{17} Francis and Martin (2010) show that acquirer’s abnormal returns at the acquisition announcement date are higher if the acquirer exhibits greater timely loss recognition (higher conditional conservative reporting). We use the firm-specific \textit{C-SCORE} developed by Khan and Watts (2009) for acquiring firms (\textit{ACQ_CSCORE}) to control for the effects of conditional conservatism on the efficiency of acquisition decisions.\textsuperscript{18}

4. Research design

4.1 Market reaction tests

Recall from Section 2.3 that when targets’ financial statements exhibit greater comparability we conjecture that acquirers have a more complete picture of how the target is performing relative to its competitors, are better able to evaluate the target’s expected future cash flows, and are able to make more precise and accurate predictions of the target’s value to the acquirer. Consequently, we predict that greater financial statement comparability will lead to better acquisition decisions. Following prior research (Moeller et al., 2004; Francis and Martin, 2010; McNichols and Stubben, 2012), we use the acquirer’s acquisition announcement return (\textit{ACQ_CAR}) to proxy for investors’ assessment of the net present value of an acquisition. To capture value creation or synergies (\textit{SYNERGY}) from the acquisition, we use the combined value-weighted acquirer and target acquisition announcement return (e.g., Harford et al., 2012). The baseline equations for testing hypothesis 1a and 1b are as follows:

\begin{align}
\text{ACQ\_CAR}_{it} &= \beta_0 + \beta_1 \text{TRG\_COMPRNK}_{it-1} + \beta_2 \text{ACQ\_controls} + \beta_3 \text{TRG\_controls} + \beta_4 \text{DEAL\_controls} + \epsilon_i \quad (6) \\
\text{SYNERGY}_{it} &= \beta_0 + \beta_1 \text{TRG\_COMPRNK}_{it-1} + \beta_2 \text{ACQ\_controls} + \beta_3 \text{TRG\_controls} + \beta_4 \text{DEAL\_controls} + \epsilon_i \quad (7)
\end{align}

where \textit{TRG\_COMPRNK} is the ranked value of targets’ comparability scores (\textit{TRG\_COMP}). To allow for possible non-linearities in the relation between financial statement comparability and each of these

\textsuperscript{17} We require targets have cash flow statement data to estimate the Dechow and Dichev (2002) model (Hribar and Collins, 2002).

\textsuperscript{18} Francis and Martin (2010) expand the baseline Basu (1997) model by including acquirers’ abnormal returns in the regression model as an additional explanatory variable. In our analysis, we use 3-day abnormal returns of the acquirer as the dependent variable. Thus, we need a firm-level measure of acquirers’ conditional conservatism, so we elect to use C-score as this firm-level proxy for conditional conservatism (see Kahn and Watts, 2009).
dependent variable measures, we form decile ranks from 0 to 9 of the $TRG\_COMP$ measure and then divide these ranked values by 9 to form scaled-rank values that range from 0 to 1.\textsuperscript{19} Using scaled-rank values of the target comparability measure also facilitates the interpretation of the coefficients on this variable. For example, when the dependent variable is stock returns, the coefficient value measures the difference in acquisition announcement returns for target firms with higher comparability scores compared to target firms with lower comparability scores (see Abarbanell and Bushee (1998) for further explanation of this technique). Comparability is measured at the year-end before the acquisition announcement. Control variables are as defined above. Based on Hypothesis 1a and 1b, we expect the coefficient on $TRG\_COMPRNK$, $\beta_1$, to be positive in both equations (6) and (7) indicating that more comparable accounting is associated with higher acquisition announcement returns and acquisition synergies, respectively.

\textbf{4.2 Post-acquisition operating performance}

In addition to the market-based tests described above, we explore the relation between financial statement comparability and the change in operating performance after acquisitions using the following equation (Francis and Martin, 2010):

$$
\Delta ROA_{t,t+3} = \beta_0 + \beta_1 TRG\_COMPRNK_{t-1} + \beta_2 ACQ_{controls} + \beta_3 TRG_{controls} + \beta_4 DEAL_{controls} + \epsilon_i
$$

(8)

where $\Delta ROA$ is equal to $(\overline{ROA}_{t+3} - \overline{ROA}_{t-3})$, where $\overline{ROA}_{t+3}$ ($\overline{ROA}_{t-3}$) is the average ROA from year $t+1$ ($t-1$) to year $t+3$ ($t-3$) and $t$ denotes the acquisition announcement year. All other variables are as previously defined. Based on Hypothesis 1c, we expect the coefficient on $TRG\_COMPRNK$, $\beta_1$, to be positive indicating that when the target’s accounting information exhibits greater comparability the change in post-acquisition performance of the combined entity will be greater.

\textsuperscript{19} Results are robust when we replace ranked values with raw values of targets’ comparability.
5. Sample selection and descriptive statistics

5.1 Sample selection

We use the SDC Mergers and Acquisitions database, beginning with all U.S. mergers and acquisitions with announcement dates between January 1, 1983 and December 31, 2009. Panel A, Table 1 summarizes our sample selection procedure. To determine our sample we begin with all completed deals identified by SDC as mergers (M), acquisitions of majority interest (AM), or acquisitions of assets (AA). We identify all deals where both bidder and target are public firms and specifically exclude repurchases. This process gives us 6,282 mergers and acquisitions from the SDC database. Next, to make sure the deals we examine are material and economically significant, we eliminate acquisitions with deal value less than $1 million and acquisition that are less than 1% of the acquirer’s pre-acquisition market value (e.g., Moeller et al., 2004; McNichols and Stubben, 2012). Finally, we exclude observations that lack the data required to calculate the comparability measure, acquirers’ and targets’ announcement returns, and control variables included in our regression models. This yields a final sample of 1,307 acquisitions. The sample size varies across different analyses due to additional data requirements to calculate the dependent variables and/or other earnings attributes such as accrual quality and conditional conservatism.

[Insert Table 1 Here]

Panel B of Table 1 presents summary statistics on the distribution of our sample by announcement year. The number of acquisitions per year increases steadily until it peaks in 1999 and then decreases following the market crash in 2000, a trend that is consistent with evidence in Moeller et al. (2004), Masulis et al. (2007), Francis and Martin (2010), and Kravet (2012). Panel B also reports the annual median acquirer market value of equity (measured at the end of the quarter before the acquisition), deal value, and relative size (defined as the ratio of deal value to the acquirer’s market value of equity).

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20 We select this sample period because we require three-year data before and after acquisition announcement years to calculate change in operating performance. Our sample period also overlaps with recent recessionary years (i.e., 2008 and 2009). Removing these two years does not change our results.

21 Our results are robust if we use 5% of the acquirer’s pre-acquisition market value of equity as the cutoff.
Acquirer market value and deal value both exhibit an increasing trend through 2000, though relative size is fairly stable over the sample period. The median deal value ($332 million) and relative deal size (20% of acquirer market cap) of our sample are larger than the corresponding values reported in Francis and Martin (2010). This is expected because we restrict our sample to acquisitions with public targets, deal values greater than $1 million, and acquisitions that are greater than 1% of acquirer’s market value. Panel C of Table 1 includes the frequency distribution of acquisition announcements by acquirer’s 2-digit Standard Industry Classification (SIC) code. Overall, our sample is reasonably diversified across industries.

5.2 Descriptive Statistics

Panel A of Table 2 presents descriptive statistics for the variables included in this study. Acquirer’s 3-day cumulative abnormal returns (\(^{ACQ\_CAR}\)) around the acquisition announcement have a mean (median) of -2% (-1%), which are much smaller than those of targets, whose mean (median) three-day abnormal returns are 21% (16%). The negative acquirer 3-day CAR is consistent with the prior literature (e.g., Lang et al., 1991; Fuller et al., 2002; Moeller et al., 2004; Francis and Martin, 2010). The magnitudes of both acquirers’ and targets’ abnormal returns are also consistent with the findings in McNichols and Stubben (2012). Table 2 suggests that, on average, the public deals in our sample create value in that they have net positive synergies: the mean combined (weighted-average) CAR is 1%, which is consistent with Andrade et al. (2001), Martin and Shalev (2009), and Harford et al. (2012). The average change in operating performance from the pre- to post-acquisition period is negative (-1%). Consistent with De Franco et al. (2011), the mean (median) targets’ accounting comparability (\(^{TRG\_COMP}\)) is -2.99 (-2.46).

Panel A also provides summary statistics for acquirer, target, and deal characteristics. The median size (measured as the market value at the end of the quarter prior to announcement) is approximately $2,510 million for acquirers and $246 million for targets. Acquirers and targets are equally levered, on average. Acquirers have higher Tobin’s Q and ROA than targets. In terms of how the deals are financed,
29% of the acquisitions are classified as all cash deals, 37% are classified as all stock deals with the remainder being a combination of cash and stock. Tender offers make up 20% of the acquisitions and 2% of acquisitions are classified as hostile takeovers. Forty percent of the acquisitions are inter-industry based on 2-digit SIC industry. The average size of the deal relative to the market value of the acquirer is 0.42 while the median is 0.20. Firm- and deal-specific characteristics are generally consistent with prior studies and our expectations.

[Insert Table 2 Here]

For descriptive purposes, we first provide a pair-wise correlation matrix of acquirers’ announcement returns, targets’ financial statement comparability, and control variables included in the analyses in Panel B of Table 2. This table shows that targets’ comparability (TRG_COMP) is positively associated with acquirers’ 3-day abnormal returns and expected synergies (significant at 10% level or better for both Pearson and Spearman correlation coefficients). These univariate results support hypotheses 1a and 1b. Further, target’s comparability is positively correlated with target size and target ROA, and negatively correlated with targets’ leverage. Consistent with Peterson et al. (2012), the correlation coefficients between target accounting comparability (TRG_COMP) and target accrual quality (TRG_AQ) are positive (0.30 and 0.34 for Pearson and Spearman correlation, respectively) and highly significant. These high correlations indicate that it is important to control for targets’ accrual quality when testing for the effects of target accounting comparability in the tests reported below. Panel B of Table 2 also shows statistically significant correlations between most of the control variables and abnormal returns, which are consistent with prior studies and our expectations.

6. Empirical results

6.1 Targets’ comparability and the efficiency of acquisition decisions

Table 3 presents the regression results of our tests of the association between target firms’ pre-acquisition financial statement comparability and the quality and efficiency of acquisition decisions: Model (1) uses ACQ_CAR (acquirer’s 3-day announcement returns); Model (2) uses SYNERGY (3-day
value weighted returns of acquirer and target); and Model (3) uses $\Delta ROA$ (change in ROA from the pre- to post-acquisition period).

Using the 3-day announcement period abnormal returns of the acquirer as the measure of acquisition efficiency, the coefficient on target comparability is positive (0.018) and statistically significant at the 1% level (t-stat = 2.44) after controlling for acquirer, target, and deal characteristics. These results support our first hypothesis that acquirers’ announcement returns are positively related to the pre-acquisition level of targets’ financial statement comparability. In terms of economic significance, the acquirers’ 3-day announcement returns for targets that exhibit higher accounting comparability are, on average, 1.8% higher than for targets that exhibit less accounting comparability. The Model 1 results also indicate that the market’s assessment of the quality of the acquisition as reflected in the acquirer’s 3-day announcement period abnormal return is significantly positively related to acquirer’s Tobin’s Q and leverage, and significantly negatively related to the interaction between acquirer free cash flow and acquirer Tobin’s Q. Thus, consistent with the arguments in Jensen (1986) and the findings in Lang et al. (1991), acquirers with low Tobin’s Q and higher free cash flow are more likely to engage in value-destroying acquisitions, which is reflected in the negative abnormal returns of acquirer’s around the acquisition announcement. In addition, we find acquisitions are considered to be of higher (lower) profitability when financed with cash (stock), consistent with the findings in Harford et al. (2012).

The association between target firms’ pre-acquisition financial statement comparability and combined acquirer and target announcement returns (SYNERGY) are reflected in the Model 2 results in Table 3. For this test, the sample size is reduced to 1,277 observations due to data requirements to compute targets’ 3-day abnormal returns. Consistent with our expectations, targets’ pre-acquisition

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22 The coefficient represents the weighted-average abnormal return to a zero-investment portfolio formed to exploit the information in the associated independent variable that is orthogonal to the information in the other independent variables. These portfolios are constructed with OLS-derived weights for each independent variable for each firm that are given by the rows of the matrix $(X'X)^{-1}X'$ where $X$ is the design matrix that includes an intercept term (see Arbarbanell and Bushee, 1998). Hereafter, all references to the coefficient on the scaled-ranked values of comparability measures reflect weighted-average differences between firms in the upper decile ranks compared to firms in the lower decile ranks.
comparability is positively related to value creation at the 1% level (t-stat = 2.97). Expected synergies of acquisitions where targets exhibit higher accounting comparability with peer firms are 2.0% higher, on average, than for target firms with accounting comparability that falls in the lower five deciles. The Model 2 results also indicate that expected synergies decrease in acquirer’s size and are moderately lower for acquirers with low Tobin’s Q but higher free cash flow. Deal characteristics such as method of payment, tender offer, and whether the deal is hostile are significantly associated with acquisition synergies as expected. We also find that the presence of blockholders is positively related to acquisition synergy, consistent with the findings in Bauguess et al. (2009).

Model 3 in Table 3 examines post-acquisition firm performance to gauge the ex-post quality and efficiency of acquisition decisions. We expect that if targets’ comparability improves acquisition outcomes, acquisitions of targets with higher comparability will lead to better post-acquisition operating performance relative to the pre-acquisition performance. That is, we expect the change in operating performance from the pre-acquisition to post-acquisition period to be greater for acquisitions where the target’s financial statement comparability is higher. The sample size for this test is further reduced to 991 observations due to the requirement of having three years of ROA data in each of the pre- and post-periods. Consistent with our expectations, the coefficient on targets’ comparability is positive and statistically significant at 5% level (t-stat = 1.77). The magnitude of the coefficient suggests that the change in acquirer ROA for acquisitions where targets are in the upper five deciles of accounting comparability is 1.7% higher, on average, than for those acquisitions where targets fall into the lower five deciles of accounting comparability. These results are both economically and statistically significant.23, 24

Collectively, the results in Table 3 suggest that acquisitions of targets with higher financial statement comparability exhibit higher announcement returns, higher synergies, and better post-

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23 We adopt an alternative approach similar to Healy et al. (1992) and Harford et al. (2012) to measure firms’ operating improvements after mergers and acquisitions. We partition our sample into high- and low-comparability based on the median of target firms’ pre-acquisition comparability scores. Untabulated results reveal that only high-comparability subsample experiences performance improvements subsequent to the acquisitions.

24 We also include year fixed effects in our regression models. The results remain statistically and economically significant.
acquisition firm performance, consistent with our first set of hypotheses that targets’ pre-acquisition financial statement comparability is associated with better acquisition decisions. These results thus suggest that financial statement comparability enhances efficient capital allocation in merger and acquisition settings.

[Insert Table 3 Here]

6.2 Cross-sectional variation in the effects of targets’ comparability

To test whether the relation between targets’ pre-acquisition comparability and the quality of acquisition decisions varies as a function of ex-ante information asymmetry or operating environment volatility of the acquirer, we construct sub-samples based on two proxies for these constructs: average daily bid-ask spreads (ACQ_SPREAD) and daily stock return volatility (ACQ_RET_VOL) of the acquirer. We calculate these two measures one year prior to acquisition announcement year and classify acquiring firms as high (low) ex-ante information asymmetry or operating environment volatility if ACQ_SPREAD and ACQ_RET_VOL are above (below) the sample median. We then estimate Equation (6), (7), and (8) for these two subsamples. If targets’ comparability enhances the monitoring role of the board and outside shareholders, we expect the effects of targets’ comparability on the quality of acquisition decisions to be more pronounced when monitoring is more difficult or costly.

The estimation results reported in Table 4 are generally consistent with Hypotheses 2a and 2b. Panel A reports results when the ex-ante information asymmetry measure is ACQ_SPREAD. The coefficient on targets’ comparability is positive and significant in all the three models estimated on the high information asymmetry sub-sample, but only slightly positive and insignificant for the low information asymmetry sub-sample. P-values of tests for differences in coefficient values between the two sub-samples indicate that the association between targets’ comparability and the efficiency of acquisition decisions is greater when the acquirers exhibit higher information asymmetry. We obtain similar results in Panel B, where the volatility of operating environment measure (ACQ_RET_VOL) is used as the proxy for acquirer information asymmetry.
Panel C of Table 4 presents results when we split our sample into cases where the acquisition is accomplished via a tender offer made directly to target shareholders versus all other types of acquisitions. Consistent with our predictions, we find that target comparability has a significantly larger positive association with all three measures of acquisition outcomes when acquisition are made by tender offers where the acquirer likely has limited access to target private information. Overall, the results in Table 4 suggest that the effects of targets’ financial statement comparability on acquirer announcement returns, combined acquirer and target returns, and change in operating performance are more pronounced when acquirers’ exhibit higher ex-ante information asymmetry, greater operating environment volatility and the acquirer has limited access to target private information. This evidence supports our conjecture that targets’ comparability is more important for boards’ and outside shareholders’ monitoring of managers in the instances when it is more difficult to monitor management via other means.

[Insert Table 4 Here]

6.3 Corroboration Tests

In this section, we present the results of two additional tests that corroborate acquisition profitability results. We argue that comparability enhances investment efficiency by providing the acquirer with better information for assessing the future cash flow prospects of potential targets. If, indeed, greater comparability leads to better acquisition decisions, then we expect acquirers are less likely to take post-acquisition goodwill impairments and make post-acquisition divestitures when targets have greater accounting comparability. We test our conjectures using the following logit models:

\[ P(GW\_IMPAIR) = f(TRG\_COMPRNK, ACQ\_controls, TRG\_controls, DEAL\_controls) \]  
\[ P(DIVEST) = f(TRG\_COMPRNK, ACQ\_controls, TRG\_controls, DEAL\_controls) \]

\( GW\_IMPAIR \) is set to 1 if the acquiring firm reports goodwill impairment in the fiscal year the acquisition is completed (year \( t \)) or in any of the four years subsequent to the completion, and 0 otherwise. We identify goodwill impairment from Compustat (i.e., \( GDWLP > 0 \)). Following Francis and Martin (2010), we identify an acquisition as resulting in a subsequent divestiture if the acquirer makes a divestiture
within seven years of the acquisition being completed and the acquired target has the same three-digit SIC code as the divested segment.\textsuperscript{25} Other acquirer, target and deal control variables as are previously defined.

Table 5 reports the results from estimating the logit model in equation (9) for goodwill impairment. The coefficient on \textit{TRG\_COMPRNK} is negative and significant (p-value = 0.021), indicating that acquisitions of targets with higher comparability are less likely to result in subsequent goodwill impairment than are acquisitions of targets with lower accounting comparability. The marginal effects from the estimation results in column 1 (untabulated) indicate that increasing targets’ comparability from the bottom to the top decile decreases the probability of goodwill impairment by 11.28\%.\textsuperscript{26} These findings suggest that the effect of target firms’ comparability on the likelihood of goodwill impairment is both statistically and economically significant.

Table 5 reports the results from estimating the logit model in equation (9) for goodwill impairment. The coefficient on \textit{TRG\_COMPRNK} is negative and significant (p-value = 0.021), indicating that acquisitions of targets with higher comparability are less likely to result in subsequent goodwill impairment than are acquisitions of targets with lower accounting comparability. The marginal effects from the estimation results in column 1 (untabulated) indicate that increasing targets’ comparability from the bottom to the top decile decreases the probability of goodwill impairment by 11.28\%.\textsuperscript{26} These findings suggest that the effect of target firms’ comparability on the likelihood of goodwill impairment is both statistically and economically significant.

Column 2 of Table 5 presents the results of the divestiture tests. The divestiture rate in our sample is 23\% (see Table 2, Panel A), which is comparable to 20.7\% documented in Francis and Martin (2010). The coefficient on \textit{TRG\_COMPRNK} is negative and significant (p-value = 0.042), indicating that acquisitions of targets with higher comparability are less likely to be divested than are acquisitions of targets with lower comparability. The marginal effects of target comparability from the estimation results in column 2 (untabulated) indicate that increasing targets’ comparability from the bottom to the top decile decreases the probability of post-merger divestiture by 6.29\%. This suggests that the effect of target firms’ comparability on the likelihood of divestiture is both statistically and economically significant.

\begin{table}[h]
\centering
\begin{tabular}{|c|c|}
\hline
\textbf{Variable} & \textbf{Coefficient} \\
\hline
\textit{TRG\_COMPRNK} & -0.52 (0.02) \\
\hline
\end{tabular}
\caption{Results of logit model for goodwill impairment.}
\end{table}

\textsuperscript{25} Francis and Martin (2010) show that acquirers with more timely loss recognition (i.e., greater conditional conservatism) are less likely to make post-acquisition divestitures. Our results do not change if we control for acquirers’ C-Scores (Khan and Watts, 2009).

\textsuperscript{26} The marginal effect is calculated as the difference between the probabilities of goodwill impairment when \textit{TRG\_COMPRNK} = 1 and when \textit{TRG\_COMPRNK} = 0, holding other variables at their mean values.
6.4 Supplemental tests and robustness check

6.4.1 The effects of other financial reporting attributes

In this section, we examine whether our results are driven by other earnings attributes of the target and acquirer. Although we view comparability as a distinct dimension of accounting information, financial statement comparability and other target earnings attributes are likely to be correlated. Earnings, accruals, and cash flows are defined by the accounting system that maps economic events (unobservable performance) into accounting numbers (Dechow et al., 2010). We expect a firm’s financial statement to be less comparable if it produces low quality earnings. Given that our measure of comparability is essentially earnings comparability, controlling for other earnings attributes of the target is necessary. We therefore first consider whether the effect of target financial statement comparability on the quality of acquisition-investment decisions is affected by controlling for targets’ accrual quality.

We define accrual quality as the mapping between accruals and cash flows (e.g., Dechow and Dichev, 2002; McNichols, 2002). Prior studies suggest that this measure reflects the quality of a firm’s accounting information and affects economic decision making (for example, Biddle et al., 2009; McNichols and Stubben, 2012; Raman et al., 2013). In particular, studies by McNichols and Stubben (2012) and Raman et al. (2013) provide evidence that targets’ accrual quality, their proxy of firm-specific information, is positively related to acquirer abnormal returns on the acquisition announcement date. In addition, Peterson et al. (2012) create a comparability measure that compares firms’ accounting policies using textual analysis and find that when firms’ accounting policies are more comparable their earnings are more persistent, better predict future cash flows, and are smoother. They also find that firms with higher accounting comparability exhibit better mapping between accruals and cash flows. Together, these studies suggest that it is possible our target comparability measure simply reflects targets’ accrual quality.

27 We also replace the Dechow and Dichev (2002) accrual quality measure with the low-quality financial reporting (LQFR) measure developed in Skaife and Wangerin (2013). LQFR is a more comprehensive measure that captures overall financial reporting quality. Using LQFR does not change our main results. We thank Dan Wangerin for providing data for calculating the LQFR measure.
Therefore, we include scaled-rank values of the target’s accrual quality (TRG_AQRNK) in our regression models as an additional control variable.

Table 6 Panel A reports results for acquirer abnormal returns, expected synergies, and change in operating performance after including TRG_AQRNK in the regression models. The dependent variable is ACQ_CAR, SYNERGY, and ΔROA in Column 1, 2 and 3, respectively. The sample size is reduced to 777 (column 1), 769 (column 2), and 556 (column 3) due to the data requirement of the accrual quality measure. Results in Column 1 indicate that the effect of targets’ comparability is incremental to targets’ accrual quality: returns to acquiring firm shareholders are higher by 2.6% (t-stat = 2.09) when the targets exhibit greater financial statement comparability compared to when targets exhibit less comparability. The coefficient on TRG_AQRNK is positive but not significantly different from zero. Column 2 shows that the coefficient on targets’ comparability remains positive and statistically significant after controlling for targets’ accrual quality. The coefficient translates to 2.1% (t-stat = 1.82) higher combined abnormal returns for the acquirer and target when targets exhibit higher accounting comparability relative to targets that exhibit less comparable accounting information. Turning to post-acquisition firm performance, Column 3 shows that targets’ accrual quality has no effect on change in ROA in our sample, while targets’ comparability exhibits a modest positive association with change in ROA around announcement years. Coefficients on other control variables (untabulated) are consistent with previous tables. Based on the results in Panel A, we conclude that targets’ accounting comparability significantly enhances the efficiency of acquisition decisions after controlling for the effect of target accrual quality.

Francis and Martin (2010) find that acquirers’ conditional conservatism is positively associated with acquisition announcement returns. We therefore control for this characteristic of acquirers’ accounting choices by including acquirer’s C-SCORE (Khan and Watts, 2009) in our regression models. Table 6 Panel B presents results relating to acquirer abnormal returns, expected synergies, and change in

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28 For brevity, we do not report the coefficients on the control variables in Table 6.
operating performance after controlling for acquirer’s C-SCORE (ACQ_CSCORE) in the models. Target’s comparability (TRG_COMPRNK) remains positive and statistically significant in all three columns. The coefficients on ACQ_CSCORE are positive but not significant in all three columns. Overall, Table 6 suggests that our results are robust to target’s accrual quality and acquirer’s conditional conservatism. The effects of target’s comparability on the quality of acquisition decisions persists after controlling for these two financial reporting attributes, consistent with our view that financial statement comparability captures a different characteristic of accounting information than target accrual quality or acquirer conditional conservatism.

6.4.2 Alternative measures of accounting comparability

As robustness checks, we consider four alternative measures of accounting comparability. Two of these measures are proposed by De Franco et al. (2011), which we label DKV_BASU and DKV_PLE, and two are proposed by Barth et al. (2012), which we label BLLW_1 and BLLW_2. The estimation procedures are detailed in Appendix B. The DKV_BASU measure of comparability allows for asymmetric timely loss recognition (Basu, 1997) and the DKV_PLE measure allows for prices-leading-earnings (e.g., Collins et al., 1994) in estimating the earnings-return relation (i.e., equation 1). The BLLW_1 measure of comparability captures the mapping between stock price and earnings and book value of equity, while the BLLW_2 captures the relation between returns and firms’ earnings and changes in earnings. Our main results, reported in Table 7, are robust to using these alternative measures of financial statement comparability. The coefficients on TRG_COMPRNK remain statistically significant, and the magnitudes are similar to those reported in Table 3.

[Insert Table 7 Here]

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29 When we remove ACQ_SIZE, ACQ_LEV, and ACQ_TOBIN_DUM from the regression model, because ACQ_SCORE is linear combination of these three variables, the coefficient on TRG_COMPRNK remains statistically significant in this alternative specification.
6.4.3  Falsification tests

To further address the concern that our accounting comparability proxy is capturing something other than the comparability of the accounting systems (e.g., the underlying economics), we create an alternative measure of comparability by replacing the earnings variable in the comparability estimation (equation 2, 3, and 4) with operating cash flows. If our results are driven by the similarities of the underlying economics, we expect this cash flow comparability measure will be statistically significant in all of the tests. The results reported in Table 8 do not support this prediction. When we replace target firms’ earnings comparability with target firms’ cash flow comparability in our main regression models, the coefficients on targets’ cash flow comparability are not statistically significant. On the other hand, the relations between targets’ earnings comparability and measures of acquisition efficiency remain significant at conventional levels. Therefore, Table 8 provides corroborating evidence that the comparability measure is capturing accounting comparability, rather than the similarities of underlying economic events.

[Insert Table 8 Here]

6.4.4  Selection bias

Our previous analysis finds that conditional on a target being acquired, the target’s accounting comparability is positively associated with acquisition efficiency. A potential selection bias emerges if acquirers are likely to select more comparable targets in the first place. However, we believe selection bias is less likely to drive our results because all of our tests compare targets with greater comparability to targets with less comparability rather than comparing comparability of targets selected against firms not selected as targets. Nevertheless, we address this potential selection bias by running a Heckman two-stage analysis. We estimate a selection model in the first stage following Cremers et al. (2009) and calculate the inverse Mills ratio, which is then added to our regression models to control for selection bias. Untabulated results indicate that our results are not driven by the selection bias; all the results remain statistically and economically significant after controlling for potential self-selection bias.
7. Conclusion

We investigate whether financial statement comparability affects capital allocation decisions in the context of mergers and acquisitions. We hypothesize that targets’ financial statement comparability provides acquirers with a rich information set that helps acquirers better predict the target’s future cash flows, better understand the target’s economic events, and better evaluate the target relative to other potential targets. To gauge the efficiency of acquisition decisions, we examine market reactions around acquisition announcements and post-acquisition firm performance. Our results are consistent with our predictions. Specifically, higher target accounting comparability is associated with higher acquirer announcement returns and higher synergies (value creation). Analyses on post-acquisition operating performance also suggest that acquiring firms exhibit greater operating improvements after the acquisition when they acquire targets with more comparable accounting information. Finally, we find that acquirers are less likely to impair goodwill or divest the target ex-post when targets exhibit more comparability. Overall, this evidence suggests that targets’ financial statement comparability helps acquirers make better acquisition-investment decisions.

We also examine whether the information provided by targets’ financial statement comparability facilitates better board and outside investors oversight. Consistent with Francis and Martin (2010) we assert that monitoring will be more difficult for investors and the board when ex-ante information asymmetry of the acquirer is high. As a result, we predict that boards will rely more on target comparability when alternative methods of monitoring are inhibited because of high ex-ante information asymmetry. We find that the effect of targets’ accounting comparability on the profitability of acquisition decisions is more pronounced when ex-ante information asymmetry of the acquirer is high. We also find that target comparability has a greater effect on our three metrics of acquisition efficiency when access to target private information is more limited and the acquisition is accomplished via a tender offer to target shareholders. Again, this finding is consistent with outside shareholders and the boards of acquiring firms placing greater reliance on comparable accounting information of targets to monitor managements’
merger and acquisition decisions when other means of assessing managements’ acquisition decisions are limited.

Supplemental tests reveal that the effects of targets’ financial statement comparability on the quality of acquisition decisions are incremental to other earnings attributes such as targets’ accrual quality and acquirers’ conditional accounting conservatism. These findings suggest that accounting comparability is a distinct across-firm accounting attribute that captures a different aspect of accounting information than the firm-specific measures used in the prior literature (e.g., Francis and Martin, 2010; McNichols and Stubben, 2012). We also find that our results are robust to using alternative measures of accounting comparability proposed by De Franco et al. (2011) and Barth et al. (2012). Finally, we attempt to rule out underlying economics as an alternative explanation for our results. We do this by substituting operating cash flows for accounting earnings in calculating the De Franco et al. (2011) measure. This revised measure is less affected by firms’ accounting method choices, but more affected by firms’ underlying economics. We find no relation between this cash flow comparability measure and the profitability of acquirers’ acquisition-investment decisions. Thus, it does not appear that comparability of underlying economics drives our results.

Overall, our findings support the notion that financial statement comparability enhances the usefulness of targets’ accounting information, leading to better acquisition decisions. Our study adds to the prior literature that examines the benefits of financial statement comparability. We provide evidence that suggests accounting comparability helps acquirers identify and more precisely value potential targets. Our evidence also suggests that comparable accounting information fosters efficient capital allocation in the context of mergers and acquisitions. This evidence is consistent with the objective of financial reporting and with the view of the SEC and the FASB. Therefore, the results in this paper should be of interest to standard setters and regulators in designing accounting standards that enhance cross-firm comparability.
REFERENCES


## Appendix A
### List of Variable Definitions

<table>
<thead>
<tr>
<th>Dependent Variables:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACQ_CAR</strong></td>
<td>Acquirer cumulative abnormal return measured over three days around the acquisition announcement.</td>
</tr>
<tr>
<td><strong>SYNERGY</strong></td>
<td>Combined acquirer and target 3-day cumulative abnormal returns, where relative market values are used as weights.</td>
</tr>
<tr>
<td><strong>ΔROA</strong></td>
<td>Change in ROA. Measured as the difference between 3-year average ROA of the combined firm after the acquisition and 3-year weighted-average ROA of the acquirer and target before the acquisition. ROA is measured as operating income before depreciation at year $t$ scaled by average of year $t$ and year $t-1$ total assets.</td>
</tr>
<tr>
<td><strong>GW_IMPAIR</strong></td>
<td>A dummy variable that equals one if the combined firm reports a goodwill impairment ($GDWLIP$) in the fiscal year the acquisition is completed (year $t$) or either of the four years subsequent to the completion, and zero otherwise.</td>
</tr>
<tr>
<td><strong>DIVEST</strong></td>
<td>A dummy variable that equals one if acquisitions have subsequent divestitures, and zero otherwise. An acquisition is defined as having a subsequent divestiture if the acquired target has the same three-digit SIC code as the divested firm over a 7-year post-acquisition window.</td>
</tr>
</tbody>
</table>

<table>
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<th>Explanatory Variable:</th>
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</thead>
<tbody>
<tr>
<td><strong>TRG_COMP</strong></td>
<td>Target firms' firm-level financial statement comparability, measured as the average comparability for all $i-j$ firm pairs in the same industry during period $t-1$.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other Accounting Attributes of Target and Acquirer:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACQ_CSCORE</strong></td>
<td>Acquirer's C-Score. C-Score is the firm-specific asymmetric timeliness score developed by Khan and Watts (2009).</td>
</tr>
<tr>
<td><strong>TRG_AQ</strong></td>
<td>Target's accrual quality. Measured by the standard deviation of the firm-level residuals from Dechow and Dichev (2002) model during the years $t-5$ to $t-1$ and multiplied by negative one.</td>
</tr>
</tbody>
</table>

<table>
<thead>
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<th>Control Variables:</th>
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</thead>
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<tr>
<td><strong>ACQ_SIZE</strong></td>
<td>Acquirer size. Measured as the natural logarithm of acquirer's market value at the end of the quarter prior to the announcement.</td>
</tr>
<tr>
<td><strong>ACQ_TOBIN</strong></td>
<td>Acquirer's pre-acquisition Tobin's Q. Measured as the ratio of acquirer's market value of assets to the book value of assets at the fiscal year end prior to an acquisition announcement.</td>
</tr>
<tr>
<td><strong>ACQ_TOBIN_DUM</strong></td>
<td>A dummy variable that takes the value 1 if the acquirer’s Tobin’s Q is greater than the sample median, and zero otherwise.</td>
</tr>
<tr>
<td><strong>ACQ_LEV</strong></td>
<td>Acquirer's pre-acquisition leverage. Measured as the sum of long term debt and short term debt deflated by total assets at the fiscal year end prior to an acquisition announcement.</td>
</tr>
<tr>
<td><strong>ACQ_ROA</strong></td>
<td>Acquirer return on assets for the year ended before the announcement year, measured as operating income before depreciation scaled by average total assets.</td>
</tr>
</tbody>
</table>
Appendix A (Continued)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACQ_FCF</td>
<td>Acquirer’s free cash flow. Measured as operating income before depreciation minus interest expense, tax expense, and dividends, scaled by total assets.</td>
</tr>
<tr>
<td>TRG_SIZE</td>
<td>Target's size. Measured as the natural logarithm of acquirer's market value at the end of the quarter prior to the announcement.</td>
</tr>
<tr>
<td>TRG_TOBIN</td>
<td>Target's pre-acquisition Tobin's Q. Measured as the ratio of acquirer's market value of assets to the book value of assets at the fiscal year end prior to an acquisition announcement.</td>
</tr>
<tr>
<td>TRG_LEV</td>
<td>Target's pre-acquisition leverage. Measured as the sum of long term debt and short term debt deflated by total assets at the fiscal year end prior to an acquisition announcement.</td>
</tr>
<tr>
<td>TRG_ROA</td>
<td>Target return on assets for the year ended before the announcement year, measured as operating income before depreciation scaled by average total assets.</td>
</tr>
<tr>
<td>STOCK_CORR</td>
<td>Target firm i’s average stock return correlation with all other firms in the same 2-digit SIC code, measured over the same 16 quarters that we use to estimate firm-specific accounting system.</td>
</tr>
<tr>
<td>SYNC</td>
<td>Target’s stock return synchronicity. Measured as the adjusted $R^2$ from a regression of a firm’s daily stock return on the daily market return over the same 16 quarters that we use to estimate firm-specific accounting system.</td>
</tr>
<tr>
<td>BLOCK</td>
<td>A dummy variable that takes the value 1 if an institutional investor owns more than 5% of the target’s shares, and zero otherwise.</td>
</tr>
<tr>
<td>ALL_STOCK</td>
<td>A dummy variable that takes the value 1 if the acquisition was financed at least 90 percent by acquirer's stocks, and zero otherwise.</td>
</tr>
<tr>
<td>ALL_CASH</td>
<td>A dummy variable that takes the value 1 if the acquisition was financed at least 90 percent by cash, and zero otherwise.</td>
</tr>
<tr>
<td>DIFFIND</td>
<td>A dummy variable that takes the value 1 if the acquirer and the target are in different industries based on 2-digit SIC code, and zero otherwise.</td>
</tr>
<tr>
<td>HOSTILE</td>
<td>A dummy variable that takes the value 1 if the acquisition was achieved through hostile takeover, and zero otherwise.</td>
</tr>
<tr>
<td>TENDER</td>
<td>A dummy variable that takes the value 1 if the acquisition is classified as tender offer by SDC, and zero otherwise.</td>
</tr>
<tr>
<td>REL_SIZE</td>
<td>Relative deal size. Measured as the ratio of the transaction value to the market value of the bidder.</td>
</tr>
</tbody>
</table>

Note: Both acquirer and target firm characteristics are measured at the fiscal year end prior to acquisition announcement. Deal characteristics are obtained from SDC database.
Appendix B

Alternative Measures of Comparability

Asymmetric Timeliness of Earnings

Our primary comparability measure relies on the contemporaneous return-earnings relation to capture the mapping between economic events and the firm’s financial statements. One potential bias in this measure of comparability is the asymmetric timelines of earnings (Basu, 1997). To incorporate asymmetric timeliness into our comparability measure, we estimate a firm’s asymmetric accounting function to gains and losses by adopting Basu’s piece-wise linear model. For each firm \(i\), we first estimate the following time-series equation using the 16 quarters (at the minimum 14 quarters) of data prior to acquisition announcement year \(t\):

\[
Earnings_{it} = a_i + b_iReturn_{it} + c_iNeg_{it} + d_iReturn_{it} \times Neg_{it} + \varepsilon_{it} \tag{A1.1}
\]

where \(Neg_{it}\) is an indicator variable equal 1 if \(Return_{it}\) is negative and zero otherwise. The accounting function of firm \(i\) is captured by the estimated coefficients, \(a_i, b_i, c_i,\) and \(d_i\). Similarly, we estimate equation (A1.1) for firm \(j\), and its accounting function is captured by the estimated coefficients \(\hat{a}_j, \hat{b}_j, \hat{c}_j,\) and \(\hat{d}_j\). For each of the 16 prior quarters, we then calculate the expected earnings based on the estimated coefficients:

\[
E(Earnings)_{it}^i = \hat{a}_i + \hat{b}_iReturns_{it} + \hat{c}_iNeg_{it} + \hat{d}_iReturn_{it} \times Neg_{it} \tag{A1.2a}
\]

\[
E(Earnings)_{it}^j = \hat{a}_j + \hat{b}_jReturns_{it} + \hat{c}_jNeg_{it} + \hat{d}_jReturn_{it} \times Neg_{it} \tag{A1.2b}
\]

where \(E(Earnings)_{it}^i\) is the predicted earnings given firm \(i\)’s function and firm \(i\)’s stock returns, and \(E(Earnings)_{it}^j\) is the predicted earnings given firm \(j\)’s function and firm \(i\)’s stock returns. Similar to De Franco et al. (2011), we calculate the comparability between firm \(i\) and \(j\) during the 16 quarter estimation period as the negative value of the average absolute difference between the predicted earnings using firm \(i\)’s and \(j\)’s function:

\[
ACCT\_COMP_{it} = -\frac{1}{16} \times \sum \left| E(Earnings)_{it}^i - E(Earnings)_{it}^j \right| \tag{A1.3}
\]
Thus, the comparability measure is bound from above at zero, and higher values indicate that the two firms are more comparable.

Finally, we calculate the comparability scores for all firm \( i-j \) pairs in the same two-digit SIC code and take the mean value of all firm-pair comparability scores as the first alternative comparability measure (\( DKV_{BASU} \)).

**Prices Lead Earnings**

Another potential bias in the contemporaneous return-earnings relation is prices lead earnings. Prior research document that stock prices incorporate firm-specific news before they are reported in accounting earnings, that is, prices lead earnings (e.g., Collins et al., 1994). To incorporate this lead-lag relation between returns and earnings, we include lagged stock return in our accounting model by reestimating the comparability measure using the following model:

\[
Earnings_{it} = a_i + b_iReturn_{it} + c_iNeg_{it} + d_iReturn_{it} \times Neg_{it} + e_iReturn_{it-1} \\
+f_iNeg_{it-1} + g_iReturn_{it-1} \times Neg_{it-1} + \epsilon_{it}
\] (A2.1)

where \( Return_{it-1} \) is the stock return during the prior quarter, \( Neg_{it-1} \) is an indicator variable equal 1 if \( Return_{it-1} \) is negative and 0 otherwise. Other variables are previously defined. To be comprehensive, we also include interaction terms in equation (A2.1) for the potential asymmetric timeliness of earnings in capturing information in lagged and current stock returns. We then follow the algorithm described before to measure the distance between firms’ accounting functions to create our second alternative comparability measure (\( DKV_{PLE} \)) based on this “prices-lead-earnings” model.

**Barth et al. (2012) Specifications**

We also calculate two additional measures of comparability (\( BLLW_1 \) and \( BLLW_2 \)) adapted from Barth et al. (2012). In estimating firm-specific accounting function, we run the following time-series equations using the 16 quarters (at the minimum 14 quarters) of data prior to acquisition announcement year \( t \):

\[
P_{it} = a_i + b_iBVE_{it} + c_iNl_{it} + \epsilon_{it}
\] (A3.1)
\[ Ret_{it} = a_i + b_i[N_{it}/P_{it-1}] + c_i[\Delta N_{it}/P_{it-1}] + d_iLOSS_{it} \]
\[ + e_iLOSS_{it} \times [N_{it}/P_{it-1}] + f_iLOSS_{it} \times [\Delta N_{it}/P_{it-1}] + \varepsilon_{it} \]  

(A3.2)

In equation (A3.1) \( P \) is stock price, \( BVE \) is book value of equity per share, and \( NI \) is net income before extraordinary items per share. In equation (A3.2), \( Ret \) is the quarterly return, \( NI \) is net income before extraordinary items per share, and \( LOSS \) is an indicator variable equal 1 if \( NI \) is negative, and zero otherwise.

Again, we follow our previous algorithm to measure the distance between firms’ accounting functions to create our third and fourth alternative comparability measures. \( BLLW_1 \) is calculated based on the accounting functions estimated from equation (A3.1), and \( BLLW_2 \) is based on estimating equation (A3.2).
Figure 1
Mergers and Acquisitions Process

Preliminary Evaluation

Company and Industry Research

Confidentiality Agreement; Letter of Intent

Acquisition Agreement Signed and Public Disclosure

Transactional Due Diligence

Closing

Preliminary Due Diligence
Evaluation costs and benefits
Business analysis
Initial Valuation
Interviewing customers, suppliers, and competitors

Public Information Only

In-Depth Due Diligence
Company visits
Meeting with management
Reviewing ongoing R&D projects
Updating prior valuation
Verifying target’s accounting information
Offering purchase price
Negotiation begins

Limited Private Information

Transactional Due Diligence
Obtaining more current and precise private information
Searching for off-balance liabilities
Verifying information on intangibles
Updating valuation
Post-merger integration planning
Preparation of legal filings

Extensive Private Information
Table 1
Sample Selection and Distribution

This table presents the sample selection procedure and sample distribution. The sample consists of 1,307 US mergers and acquisitions with public targets (listed in SDC) between 1983 and 2009. Panel A presents the sample selection procedure. Panel B presents by the announcement year the frequency distribution of acquisitions, median values of acquirers’ market value at the end of the quarter prior to announcement, median values of transaction value, and median values of relative deal size. Panel C presents the frequency distribution of acquisitions by acquirers’ two-digit SIC code. For variable definitions, see “List of Variable Definitions” in Appendix A.

Panel A: Sample Selection Procedure

<table>
<thead>
<tr>
<th>Description</th>
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<tbody>
<tr>
<td>Acquisitions of publicly listed targets from 1980 to 2008</td>
<td>6,282</td>
</tr>
<tr>
<td>Less transactions smaller than $1 million</td>
<td>(56)</td>
</tr>
<tr>
<td>Less relative deal size smaller than 1%</td>
<td>(963)</td>
</tr>
<tr>
<td>Less acquirers without data for 3-day CAR</td>
<td>(86)</td>
</tr>
<tr>
<td>Less observations without control variables</td>
<td>(1,322)</td>
</tr>
<tr>
<td>Less target’s without data for comparability measure</td>
<td>(2,548)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,307</td>
</tr>
<tr>
<td>Year</td>
<td>Number of Acquisitions</td>
</tr>
<tr>
<td>------</td>
<td>------------------------</td>
</tr>
<tr>
<td>1983</td>
<td>1</td>
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<td>1985</td>
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<td><strong>Total</strong></td>
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**Panel C: Sample Distribution by Acquirer Industry**

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<tr>
<th>Two-digit SIC</th>
<th>Count</th>
<th>% of Sample</th>
<th>Two-digit SIC</th>
<th>Count</th>
<th>% of Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 - Metal Mining</td>
<td>5</td>
<td>0.38</td>
<td>45 - Air Transit</td>
<td>8</td>
<td>0.61</td>
</tr>
<tr>
<td>13 - Oil And Gas Extraction</td>
<td>61</td>
<td>4.67</td>
<td>46 – Pipelines</td>
<td>2</td>
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</tr>
<tr>
<td>15 - Building Construction</td>
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**Total** | **1,307** | **100.00**
Table 2
Descriptive Statistics and Correlations

This table presents the descriptive statistics. Panel A presents the descriptive statistics of the variables used in the tests, and Panel B presents the correlation coefficients of the main variables. Cumulative abnormal returns (CARs) are measured around initial acquisition announcements (-1, +1). All firm characteristics are measured at the fiscal year end prior to acquisition announcements. In Panel A, ACQ_SIZE and TRG_SIZE are presented in dollars (in millions) for ease of interpretation. In Panel B and Panel C, correlations significant at the 10% level are in bold. For variable definitions, see “List of Variable Definitions” in Appendix A.

Panel A: Descriptive Statistics

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Table 2 (Cont.)
Descriptive Statistics and Correlations

**Panel B: Pearson (top) and Spearman (bottom) Correlation Coefficients**

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Note: The correlations of deal characteristics are omitted for brevity. They are available from the authors upon request.