

Accounting comparability and financial distress

Financial
distress

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Abstract

Purpose – The purpose of this study is to present the evidence of the association between financial statement comparability and corporate financial distress.

Design/methodology/approach – This is an empirical study, and this study uses multiple regression analysis to evaluate hypothesis.

Findings – The authors find a significant decrease in the probability of financial distress as accounting comparability increases. Findings of this study suggest that distressed firms tend to produce financial statements that compare poorly to those of peer firms; the effectiveness of predicting financial distress with accounting ratios may be conditional on comparability with peers; and financial statement comparability may be predictive of financial distress.

Research limitations/implications – First, this study only used publicly available financial data, which may not be representative of all countries and could differ because of differences in accounting practices. Second, although this study found a connection between accounting comparability and financial distress, it cannot prove a causal relationship, as other factors that were not controlled for may also have an impact. Third, this study used various measures of financial distress, but other measures could lead to different results. Finally, this study did not include all relevant variables, such as industry-specific factors and macroeconomic conditions, which could influence the relationship between accounting comparability and financial distress.

Practical implications – For investors and financial analysts, the results imply that accounting comparability can serve as a useful signal for identifying companies that are more likely to remain financially stable in the long run. Thus, they may prefer to invest in or recommend highly comparable firms over their less comparable counterparts. For auditors, this study underscores the importance of promoting and enforcing accounting standards that improve comparability, as this can help mitigate the risk of financial distress among their clients. Regulators may also consider the implications of the study's findings when designing policies and guidelines related to financial reporting and disclosure.

Originality/value – To the best of the authors' knowledge, this is the first study investigating the association between financial statement comparability and corporate financial distress of the US firms. This study uses large, comprehensive and multi-year data. Furthermore, this is the only study that presents the evidence of negative association between comparability and firm financial distress.

Keywords Financial statement comparability, Financial distress, Firm performance, Financial ratios, Bankruptcy, Performance measurement, Financial accounting, Accounting comparability, Financial distress and bankruptcy

Paper type Research paper

1. Introduction

This study explores the relationship between financial statement comparability and financial distress. Financial Accounting Standard Board (FASB) views comparability as a



qualitative characteristic that enhances the usefulness of financial information [1]. Prior research documents that financial statement comparability is associated with the coverage and accuracy of analyst forecasts, manager's propensity to issue earnings forecasts and the tendency for firms to shift from accruals-based to real earnings management (De Franco *et al.*, 2011; Gong *et al.*, 2013; Sohn, 2016). Additional research finds that financial statement comparability affects firms' expected crash risk, credit risk, cost of equity and the efficiency of acquisition decisions (Kim *et al.*, 2013; Kim *et al.*, 2016; Fang *et al.*, 2016; Imhof *et al.*, 2017; Chen *et al.*, 2018). We extend this stream of research by investigating the link between financial statement comparability and financial distress. We find consistent and robust evidence that the probability of financial distress is negatively associated with financial statement comparability.

Investigating the link between financial statement comparability and financial distress is important because financial distress is a costly condition that all stakeholders want to avoid. A financially distressed firm may lose customers, suppliers and key employees. Distressed firms also more likely to violate debt covenants, experience operational inflexibility and forgo positive net present value projects (Purnanandam, 2008). Financial statements are one source of information that stakeholders can use to assess the risk of financial distress and the literature using accounting ratios to predict financial distress has a long-established tradition (Beaver, 1966; Altman, 1968; Zmijewski, 1984; Shumway, 2001; Chava and Jarrow, 2004). The usefulness of accounting ratios in this context is, however, predicated on their comparability across firms. If the data are not comparable, financial ratios may fail to indicate underlying distress.

Rather than using financial ratios as indicators of potential distress, it may be more prudent to use measures of comparability. Prior research documents that financially distressed firms have a greater incentive to manipulate their financial reporting to produce higher or lower earnings or to avoid violating debt covenants (Sweeney, 1994; Dichev and Skinner, 2002; Charitou *et al.*, 2011; DeAngelo *et al.*, 1994; Jaggi and Lee, 2002). This tendency would make the firm's financial reporting output less aligned with its industry peers and thus reduce its comparability. There is also evidence that financial statement comparability facilitates corporate governance in monitoring management and curbing inefficient investment decisions (Kim *et al.*, 2013; Chen *et al.*, 2018). As such, comparability should help directors detect or prevent overly risky financing and investment decisions that would increase the likelihood of distress. Similarly, financial statement comparability should help creditors assess borrowers' creditworthiness, helping them to avoid making risky loans. Finally, financial statement comparability *per se* may be a function of firm-specific risk as it is related to commonly used risk proxies, such as firm size, earnings volatility, return volatility and the incidence losses (Klein, 2018). Note that firms with specialized products (i.e. higher idiosyncratic risk) are sensitive to customer-driven market share and more vulnerable to financial distress (Opler and Titman, 1994). Based on the above, we predict that financial statement comparability and financial distress are negatively related.

We test this hypothesis on a sample of 50,430 firm-years representing the 1987 through 2015 period. We follow De Franco *et al.* (2011) measure of financial statement comparability based on the earnings-return relationship of paired firms. Our measures of financial distress focus on the firm's ability to meet debt obligations. In multiple regressions that control for known determinants of financial distress, we find a significantly negative loading on multiple measures of financial statement comparability, providing evidence that higher financial statement comparability is associated with a lower probability of financial distress.

The results survive a battery of robustness checks, such as: firm-fixed effects model; change specification; lagged independent variable; and two-stage least squared regression.

We contribute to the literature by demonstrating that financial statement comparability provides useful information about a firm's probability of financial distress. This finding extends the emerging literature that seeks to validate the FASB claim that comparability enhances the usefulness of financial reporting and helps facilitate efficient allocation of capital. It also adds to the literature that investigates the value of accounting information in predicting financial distress. In particular, accounting ratios appear to be losing predictive power when models of financial distress include macroeconomic and market-based indicators (Chava and Jarrow, 2004). Our finding provides an explanation for this shift.

Two caveats are, however, in order. First, both financial statement comparability and financial distress are innately difficult to measure. Despite our efforts in using multiple proxies for both constructs, the validity of our inference depends on the validity of the measures used in the tests. Second, we do not claim that financial statement comparability has causal effects in reducing the likelihood of financial distress. Instead, we believe that the existence of a regular, directional association suffices to support the consideration of financial statement comparability when stakeholders predict financial distress with accounting ratios.

Section 2 discusses the related literature and further develops our hypothesis. Section 3 presents the research design and defines the measures we use. Section 4 presents our empirical results. Section 5 concludes the paper.

2. Literature review and hypotheses development

2.1 *Financial statement comparability*

Financial reporting standard setters have long advocated comparability as a qualitative characteristic that enhances the usefulness of financial information, as it “enables users to identify and understand similarities in, and differences among, items.”^[2] Recent empirical studies have reported evidence supporting this idea. De Franco *et al.* (2011) document that financial statement comparability is associated with increased analyst following and greater analyst forecast accuracy. Together, these suggest that accounting comparability lowers the external user's cost of acquiring and processing information about firms. Kim *et al.* (2016) report that expected crash risk decreases with financial statement comparability, arguing that comparability disinclines managers from withholding bad news. Fang *et al.* (2016) document that a borrowing firm's financial statement comparability is negatively related to the loan spread, the likelihood of pledging collateral, the shares retained by the lead lender and the time to complete the syndication process. They conclude that financial statement comparability alleviates information asymmetry in the syndicated loan market. Shane *et al.* (2014) find that seasoned equity offering (SEO) firms with better financial statement comparability experience less underpricing at the time of a SEO, arguing that comparability allows investors to better assess the quality of the firms that tap into the seasoned equity market. Similarly, Chen *et al.* (2018) report that acquirers make better acquisition decisions when target firms' financial statements are more comparable. Finally, Imhof *et al.* (2017) provide evidence that greater financial statement comparability is associated with a lower cost of equity capital. In short, a growing literature documents that financial statement comparability improves decision-making by all groups of stakeholders.

2.2 *Relation between financial statement comparability and financial distress*

A firm is in financial distress when it has difficulty honoring current obligations to suppliers, employees and contractual creditors. Financial distress plays a prominent role in

the tradeoff theory of capital structure (Leland, 1994) that holds that corporate financing decisions must balance the benefits and costs of greater debt. While corporate debt provides tax shields and disciplinary benefits, it increases the probability of financial distress. Financial distress is costly, and the costs of financial distress are not limited to the direct cost of bankruptcy. Firms threatened by financial distress may have to forego valuable investment opportunities such as profitable capital projects and promising research and development (R&D) which, in turn, may hamper future profitability.

Comparability reflects the similarity in two accounting information systems' processing of economic events. A well-accepted measure of comparability developed by De Franco *et al.* (2011) operationalizes this idea by treating returns as the valuation consequences of economic events and earnings as the summary output of the financial reporting system. Under this view, two firms have comparable financial statements if their mappings between market returns and accounting earnings are similar. However, firms with a high probability of financial distress are likely to deviate from their healthier industry peers in producing accounting outputs. When a firm faces financial distress the agency conflicts between managers, owners and creditors become more severe (Jensen and Meckling, 1976). As a result, managers may report opportunistically to minimize personal losses. Prior studies show that managers in distressed firms tend to manage earnings upward to avoid breaching debt covenant, to secure employment and to inflate share prices (Sweeney, 1994; Dichev and Skinner, 2002; Charitou *et al.*, 2011). Managers may also manage earnings down to highlight financial difficulties in the expectation of obtaining better terms following renegotiations (DeAngelo *et al.*, 1994; Jaggi and Lee, 2002). Sohn (2016) finds that earnings management decreases with the increase in accounting comparability.

Both of these actions reduce comparability and lead us to argue that the probability of financial distress is negatively associated with financial statement comparability. Consistent with our conjecture, Lee *et al.* (2017) document that when in financial distress, firm returns are less closely associated with accounting earnings and more closely associated with operating cash flows.

Prior research provides evidence that financial statement comparability increases the effectiveness of inside and outside monitoring of managerial opportunism. For example, De Franco *et al.* (2011) document the association of financial statement comparability with increased analyst following and increased analyst forecast accuracy. Chen *et al.* (2018) document the association between better acquisition outcomes and target firm's financial statement comparability. They argue that financial statement comparability improves the board's monitoring of managerial decisions. Thus, our second reason for expecting a negative association between comparability and distress revolves monitoring. To the extent that boards of directors are aided by financial statement comparability, they should be more effective at constraining opportunistic investment decisions that could hamper the firm's long-run financial health. Financial statement comparability may facilitate corporate discipline by constraining decisions that lead to financial distress. Similarly, if creditors, aided by better financial statement comparability, would be less likely to extend risky credit.

Our third reason to expect a negative association between comparability and distress is that financial statement comparability (or the lack thereof) may be a function of firm-specific risk. Gong *et al.* (2013) posit that when a firm's accounting earnings reflect more firm-specific than industry-wide factors, the information asymmetry between managers and outside investors increases in severity. Consistent with this notion, they find that firms with lower earnings synchronicity are more likely to issue managerial forecasts to mitigate the costs of information asymmetry. Consider a firm that is subject to unique economic events that are not common to its industry peers. This firm's earnings are likely to reflect more of

these firm specific factors, (lower comparability) which securities markets may be slow to pick up (Ayers and Freeman, 1997). The result is higher information asymmetry between insiders and outsiders and the outcome would be a poor mapping between the returns and the earnings. In a similar vein, Klein (2018) points out that the comparability measure is related to commonly used risk proxies, such as firm size, earnings volatility, return volatility and the incidence of losses. Firm-specific risk and severe information asymmetry increases firms' cost of capital and hence the probability of financial distress.

In sum: firm-specific risk can underlie both poor accounting comparability and vulnerability to financial distress; comparability helps constrain poor managerial decision-making; but distress by itself can induce reporting decisions that reduce comparability. Together, these arguments lead to the following hypothesis, stated in the alternative form:

H1. Firms with poor financial statement comparability may have a higher probability of financial distress.

3. Research design

3.1 Sample

We begin with a total sample of 79,600 firm-year observations with non-missing accounting comparability measure during the period 1987–2015[3]. We then delete firm-year observations from the regulated industries (two-digit SIC code 49) and financial institutions (two-digit SIC codes 60–69), resulting a total of 20,328 observations removed. After deleting the firms with missing control variables (8,842 firm-year observations), our final sample comprises 50,430 firm-year observations. To prevent outliers from affecting the results, we winsorize all continuous variables at the 1st and 99th percentiles (Table 1).

3.2 Model specification

Following prior studies (Choi *et al.*, 2021; Hasan, 2018), we conduct a logistic regression to examine the association between financial statement comparability and financial distress. Logistic regression is suitable in our research setting because the dependent variable (*ProbDistress*) is a categorical variable which takes the value of 1 or 0. Our financial *Distress1* is equal to 1 if Z-score < 1.81, and 0 otherwise. Our logistic model is specified as follows:

$$(ProbDistress = 1) = \beta_0 + \beta_1 FSCOM_{it} + \sum_{j=2}^{12} \beta_j CONTROLS_{it} + In_k + Yr_t + \varepsilon_{it} \quad (1)$$

Sample selection	Observations
Initial sample from 1987 to 2015 with non-missing comparability measure	79,600
Less: Utilities industries [SIC 49]	–3,992
Less: Financial institutions [SIC 60–69]	–16,336
Less: Missing control variables	–8,842
Final sample	<u>50,430</u>

Note: Table 1 shows the sample selection procedure

Source: Authors' own creation

Table 1.
Sample selection

where $Distress_{it}$ is one of the proxies of financial distress, and $FSCOM_{it}$ is the firm specific comparability measure based on the mapping of firms' economic events to financial statements (De Franco *et al.*, 2011). In_k and Yr_t are included in the model to control for industry and year fixed effects, respectively. The main variables are defined the next section, and other variables are defined in Appendix 1.

The key coefficient of interest in regressions (1) is β_1 for $FSCOM$, which depicts the association between financial statement comparability and the probability of financial distress. We expect the coefficient on $FSCOM$ to be negative, suggesting that firms with lower (higher) comparability are more (less) likely to be financially distressed. Following prior literature (Altman, 1968; Beaver, 1966; Zmijewski, 198; Beaver *et al.*, 2005; Beaver *et al.*, 2011), we include 12 control variables. We control for: firm size (log of the book value of total assets); the quick ratio (*QUICK*); *BIG4* auditors; ratio of cash to sales (*CASHSALE*); tangibility (*TANG*); ratio of net income to total assets (*NETINCOME*); the ratio of receivables to total sales (*RECT*); the US national market index (*MKTINDEX*); the US national change in GDP (*GDP*); the US unemployment rate (*UNEMP*); the dollar amount of dividends paid to common stockholders (*DIV*); and capital intensity (*CAPINT*).

3.3 Measuring financial statement comparability

We follow the De Franco *et al.* (2011) measure of financial statement comparability, which is based on the earnings-returns relationship of paired firms. De Franco *et al.* (2011) develop an empirical model based on the assumption that for a given set of economic events, two firms produce similar financial results. Following De Franco *et al.* (2011), we first estimate the following:

$$Earnings_{it} = \alpha_i + \beta_i Return_{it} + \varepsilon_{it} \quad (2)$$

where $Earnings$ is the quarterly net income before extraordinary items (*IBQ*) scaled by beginning of the period market value of equity ($PRCC \cdot F \cdot CSHO$), and $Return$ is the respective quarter's stock return. We calculate $\hat{\alpha}_i$ and $\hat{\beta}_i$ for firm i and in the same way we estimate $\hat{\alpha}_j$ and $\hat{\beta}_j$ for firm j . We then use these parameters to estimate expected earnings of firm i and j . We use the $Return$ of firm i and the parameters of i and j to compare the $Earnings$ of firm i and j as follows:

$$E(Earnings)_{iit} = \hat{\alpha}_i + \hat{\beta}_i Return_{it} \quad (3)$$

$$E(Earnings)_{ijt} = \hat{\alpha}_j + \hat{\beta}_j Return_{ij} \quad (4)$$

Keeping the economic event, $Return_{it}$, constant, we calculate predicted earnings of firm i and j for the period t . Then, we compute the accounting comparability between firm i and j ($FSCOMP_{4ijt}$) from the following:

$$FSCOMP_{ijt} = -\frac{1}{16} * \sum_{t=15}^t |E(Earnings_{iit}) - E(Earnings_{ijt})| \quad (5)$$

The smaller the difference between the predicted earnings of i and j , the more comparable are the two firms' accounting systems. We estimate comparability for each firm i -firm j combination for J firms within the same two-digit SIC industry classification. Then, we rank

all J values of $FSCOMP_{ijt}$ for each firm i from the highest to lowest. Next, we calculate $FSCOMP4_{it}$ as the average of the highest four comparability scores of firm i with firm j . We also compute $FSCOMP10$, $COMP_INMDN$ and $COMP_INDMEAN$. The detailed calculations of these measures are defined in [Appendix 1](#).

3.4 Measures of financial distress

We use several proxies for financial distress. Our first proxy, *Distress1*, is based on the Altman Z-score, which is calculated based on the combination of five financial ratios. This score has been widely used in financial distress literature ([Lian, 2017](#); [Pathan, 2009](#); [Gerantonis et al., 2009](#)). We compute the Altman Z-score as follows:

$$\begin{aligned} Z - \text{Score} = & 1.2 \times \frac{\text{Working Capital}}{\text{Total Assets}} + 1.4 \times \frac{\text{Retained Earnings}}{\text{Total Assets}} + 3.3 \\ & \times \frac{\text{EBIT}}{\text{Total Assets}} + 0.6 \times \frac{\text{Market Value of Equity}}{\text{Total Assets}} \\ & + 0.999 \times \frac{\text{Total Sales}}{\text{Total Assets}} \end{aligned}$$

We then create *Distress1* = 1 if Z-score < 1.81, and 0 otherwise. Our second proxy, *Distress2*, is based on firms' leverage position. Prior studies ([Lee et al., 2011](#); [Sari and Putri, 2016](#)) find that greater leverage increases the probability of financial distress. We calculate leverage as the ratio of total debt (*DLTT*) to total assets (*AT*). We then create five quantiles of leverage and create *Distress2* = 1 if a firm's leverage is in the fifth quantile, and 0 otherwise. Our third and fourth proxies are based on interest coverage ratio (*ICR*). Studies related to financial distress ([Wruck, 1990](#); [Asquith et al., 1994](#); [Whitaker, 1999](#)) suggest that less than 0.8 *ICR* is significantly positively associated with financial distress. Following this convention, we create our *Distress3* = 1 if *ICR* is less than 0.8 or 1 in any two consecutive years, and 0 otherwise. To create *Distress3*, we calculate *ICR* as the ratio of the sum of earnings before interest and taxes (*EBIT*) and interest (*XINT*) to *XINT*. We also create *Distress4* = 1 if *ICR* is less than 0.8 in any fiscal year, 0 otherwise. For the *Distress4*, we calculate *ICR* as the ratio of *EBIT* and *XINT*. For sensitivity analyses, we also use other alternative proxies of financial distress, and their definitions are in the [Appendix 1](#).

4. Results

4.1 Summary statistics and univariate results

Panel A in [Table 2](#) provides summary statistics for firm characteristics, proxies for financial distress and the control variables used in our tests. The mean value of our first proxy, *Distress1*, is 0.50, which indicates that 50% of our sample firms' Altman Z-score is less than 1.81. The mean (median) of *Distress2*, *Distress3* and *Distress4* are 0.17 (0.00), 0.19 (0.00) and 0.24 (0.00), respectively. The mean (median) of *FSCOM* is −0.51 (−0.29) with a standard deviation of 0.50, which are similar with those reported in recent studies ([De Franco et al., 2011](#); [Kim et al., 2016](#); [Sohn, 2016](#)). *SIZE* has a mean (median) of 5.46 (5.33), *QUICK* has mean (median) of 0.35 (0.31), *BIG4* has a mean (median) of 0.39 (0.00). The mean (median) firm in our sample has *CASHSALE* of 0.03 (0.07), *TANG* of 0.26 (0.20), *NETINCOME* of −0.02 (0.03) and *RECT* of 0.17 (0.16). The mean (median) of *MKTINDEX* is 9.27 (9.50), of *GDP* growth is 2.43 (2.50), *UNEMP* is 6.44 (6.00), of *DIV* is 0.34 (0.00) and of *CAPINT* is 0.05 (0.04).

We divide our sample firms into two groups: firms with high financial statement comparability and firms with low financial statement comparability, based on median

Variable	<i>n</i>	Mean	SD	0.25	Mdn	0.75		
<i>Panel A: firm characteristics</i>								
<i>Distress1</i>	50,430	0.50	0.50	0.00	1.00	1.00		
<i>Distress2</i>	50,430	0.17	0.38	0.00	0.00	0.00		
<i>Distress3</i>	50,430	0.19	0.39	0.00	0.00	0.00		
<i>Distress4</i>	50,430	0.24	0.42	0.00	0.00	0.00		
<i>FSCOM</i>	50,430	−0.51	0.50	−0.71	−0.29	−0.14		
<i>SIZE</i>	50,430	5.46	2.16	3.87	5.33	6.92		
<i>QUICK</i>	50,430	0.35	0.20	0.19	0.31	0.49		
<i>BIG4</i>	50,430	0.39	0.49	0.00	0.00	1.00		
<i>CASHSALE</i>	50,430	0.03	0.20	0.01	0.07	0.14		
<i>TANG</i>	50,430	0.26	0.21	0.09	0.20	0.38		
<i>NETINCOME</i>	50,430	−0.02	0.16	−0.04	0.03	0.08		
<i>RECT</i>	50,430	0.17	0.08	0.11	0.16	0.21		
<i>MKTINDEX</i>	50,430	9.27	0.43	8.81	9.50	9.59		
<i>GDP</i>	50,430	2.43	1.11	1.70	2.50	3.40		
<i>UNEMP</i>	50,430	6.44	1.19	5.60	6.00	7.30		
<i>DIV</i>	50,430	0.34	0.47	0.00	0.00	1.00		
<i>CAPINT</i>	50,430	0.05	0.04	0.02	0.04	0.07		
<i>Panel B: high vs low comparability and financial distress</i>								
High comparability		Low comparability						
Distress	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD	Mean Diff.	<i>t</i> -value
1	22,891	0.379	0.485	27,539	0.602	0.489	−0.223***	−51.185
2	22,891	0.018	0.134	27,539	0.028	0.166	−0.023***	−7.427
3	22,891	0.115	0.320	27,539	0.213	0.409	−0.097***	−29.385
4	22,891	0.099	0.300	27,539	0.347	0.476	−0.247***	−68.148
<i>ICR</i>	18,143	13.22	14.899	20,886	4.403	12.869	8.816***	62.722
<i>Z-Score</i>	22,453	1.742	1.735	26,638	0.368	3.006	1.373***	60.496
<i>Leverage</i>	22,844	0.433	0.202	27,481	0.513	0.229	−0.080***	−41.156

Table 2. Descriptive statistics **Note:** Please refer to [Appendix](#) for variable descriptions **Source:** Authors' own creation

score of *FSCOM*. Firms with comparability scores above the median are classified as high comparable firms and those with comparability scores below the median are classified as low comparable firms. Panel B of [Table 2](#) reports the univariate comparisons of our dependent variable, *Distress*. The mean *Distress1* in the high comparable group is 0.379, while the low comparable group has a mean of 0.602. The *t*-statistic for the mean difference is −51.185, suggesting that the difference is statistically significant at 1% level. All of the mean differences between the two groups are statistically significant and support our hypothesis of a negative association between comparability and distress.

The correlation coefficients for the variables included in the main analysis are presented in [Table 3](#). *FSCOM*, is significantly ($p \leq 0.000$) and negatively (−0.23, −0.28, −0.33 and −0.15) correlated with all the proxies of financial distress. *FSCOM* is also significantly correlated with other firm characteristics variables, and these variables are also significantly correlated with *Distress*. *Distress1*, for example, is significantly correlated with *SIZE*, *BIG4*, *CASHSALE*, *TANG*, *NETINCOME*, *RECT*, *MKTINDEX*, *GDP*, *UNEMP*, *DIV* and *CAPINT*, suggesting that these firm specific variables should be controlled in our multivariate analyses.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
<i>Distress1</i>	1.00																
<i>Distress2</i>	0.36	1.00															
<i>Distress3</i>	0.38	0.87	1.00														
<i>Distress4</i>	0.17	0.00	0.10	1.00													
<i>FSCOM</i>	-0.23	-0.28	-0.33	-0.15	1.00												
<i>SIZE</i>	-0.11	-0.32	-0.30	0.15	0.22	1.00											
<i>QUICK</i>	-0.01	0.12	0.05	-0.27	0.06	-0.34	1.00										
<i>BIG4</i>	0.07	-0.06	-0.08	0.03	0.04	0.37	0.02	1.00									
<i>CASHSALE</i>	-0.26	-0.45	-0.40	0.03	0.21	0.39	-0.31	0.06	1.00								
<i>TANG</i>	0.04	-0.05	0.00	0.22	-0.08	0.17	-0.59	-0.11	0.25	1.00							
<i>NETINCOME</i>	-0.46	-0.58	-0.55	-0.05	0.33	0.37	-0.21	0.02	0.71	0.13	1.00						
<i>RECT</i>	0.12	0.06	0.05	-0.06	0.10	-0.07	0.27	-0.09	-0.07	-0.23	-0.05	1.00					
<i>MKTINDEX</i>	0.12	0.01	-0.02	0.01	0.02	0.21	0.05	0.49	-0.02	-0.15	-0.06	-0.07	1.00				
<i>GDP</i>	-0.02	-0.01	-0.02	-0.01	0.03	-0.03	0.00	-0.01	-0.02	0.00	0.02	-0.06	-0.06	1.00			
<i>UNEMP</i>	0.04	0.00	0.00	-0.02	-0.07	0.11	0.03	0.25	0.04	-0.05	-0.01	-0.06	0.00	-0.28	1.00		
<i>DIV</i>	-0.32	-0.27	-0.28	-0.03	0.23	0.44	-0.25	0.02	0.26	0.19	0.32	-0.12	-0.09	0.01	0.00	1.00	
<i>CAPINT</i>	-0.02	-0.05	-0.05	0.09	0.05	0.09	-0.32	-0.13	0.20	0.67	0.12	-0.11	-0.12	0.03	-0.10	0.09	1.00

Notes: The coefficients in *Italic* represent significance at the 1% level. See variable definitions in [Appendix; Table 3](#) shows the pairwise correlation between variables used in the baseline models. Please refer to the [Appendix](#) for variable descriptions

Source: Authors' own creation

Table 3.
Pearson correlations

4.2 Multivariate results

Table 4 presents the results of our main regression analysis. Column (1) shows the results of our regression on *Distress1* (equal to 1 if the Altman Z-Score is less than 1.81 and 0 otherwise). The coefficient of -0.458 on *FSCOM* is significant at the 1% level ($p \leq 0.000$), suggesting that firms' financial statement comparability is negatively associated with the firms' probability of being financially distressed. The coefficients on *FSCOM* in Column (2), Column (3) and Column (4) are also consistent with the main model, supporting our hypothesis that comparable firms are less likely to be financially distress.

4.3 Omitted variables

To mitigate bias concerning omitted variables, we perform a firm-fixed effects regression analysis in which we run our baseline regressions with firm fixed effects. The inclusion of firm-fixed effects controls for unobserved firm characteristics that may be correlated with omitted explanatory variables and removes any purely cross-sectional correlation between the probability of financial distress and financial statement comparability. The fixed effects capture time-invariant and unobservable omitted variable effects (Devos and Rahman, 2018). Table 5 presents the results of these tests. In Column (1), the dependent variable is *Distress1*. The coefficient on *FSCOM* is -0.749 , which is significant at the 1% level ($p \leq 0.000$). This result suggests that firms with high financial statement comparability are unlikely to be financially distressed. The Column (2) shows the results of our regression where the dependent variable is *Distress2* (equal to 1 if a firm's leverage is in the fifth quantile and 0 otherwise). Column (3) of Table 5 presents the results of our regression when the dependent variable is *Distress3* (equal to 1 if the *ICR* is less than 0.8 in any fiscal year or *ICR* is less than 1 in any two consecutive fiscal years). Finally, Column (4) presents the

Variables	Distress1		Distress2		Distress3		Distress4	
	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value	Coef.	<i>p</i> -value
<i>FSCOM</i>	-0.458^{***}	0.000	-0.634^{***}	0.000	-0.841^{***}	0.000	-0.528^{***}	0.000
<i>SIZE</i>	0.073^{***}	0.000	-0.189^{***}	0.000	-0.115^{***}	0.000	0.255^{***}	0.000
<i>QUICK</i>	-2.045^{***}	0.000	-0.976^{***}	0.000	-1.520^{***}	0.000	-3.613^{***}	0.000
<i>BIG4</i>	0.218^{***}	0.005	-0.027	0.721	-0.072	0.294	0.348^{***}	0.000
<i>CASHSALE</i>	-0.237	0.218	-1.046^{***}	0.000	-0.787^{***}	0.000	-0.447^{***}	0.005
<i>TANG</i>	0.765^{***}	0.004	0.862^{***}	0.000	1.434^{***}	0.000	1.334^{***}	0.000
<i>NETINCOME</i>	-11.507^{***}	0.000	-6.283^{***}	0.000	-6.687^{***}	0.000	-1.738^{***}	0.000
<i>RECT</i>	4.175^{***}	0.000	1.594^{***}	0.000	1.761^{***}	0.000	0.873^{***}	0.018
<i>MKTINDEX</i>	0.740	0.030	-0.488	0.193	-0.839^{***}	0.020	-0.488	0.257
<i>GDP</i>	0.234	0.204	-0.225	0.219	-0.347	0.057	-0.018	0.940
<i>UNEMP</i>	-0.091	0.093	-0.126	0.164	-0.070	0.386	-0.275^{***}	0.000
<i>DIV</i>	-1.246^{***}	0.000	-0.908^{***}	0.000	-0.943^{***}	0.000	-0.879^{***}	0.000
<i>CAPINT</i>	-4.240^{***}	0.000	-1.190^{***}	0.046	-3.713^{***}	0.000	-3.510^{***}	0.000
<i>CONSTANT</i>	-4.765	0.207	4.167	0.327	7.069	0.089	2.956	0.542
<i>Year dummy</i>	Yes		Yes		Yes		Yes	
<i>Industry dummy</i>	Yes		Yes		Yes		Yes	
<i>Firm cluster</i>	Yes		Yes		Yes		Yes	
<i>Pseudo R²</i>	0.374		0.360		0.339		0.183	
<i>Observations</i>	$50,417$		$50,418$		$50,416$		$50,385$	

Table 4.
Comparability and
financial distress –
baseline regressions

Notes: ***, ** and * represent significance at the 1, 5 and 10% levels, respectively. Standard errors are clustered at the firm level. See variable definitions in Appendix
Source: Authors' own creation

								Financial distress
Variables	Distress1		Distress2		Distress3		Distress4	
	Coef.	p-value	Coef.	p-value	Coef.	p-value	Coef.	p-value
<i>FSCOM</i>	−0.749***	0.000	−0.486***	0.000	−0.601***	0.000	−0.508***	0.000
<i>SIZE</i>	−0.101***	0.001	−0.039	0.304	0.048	0.170	0.427***	0.000
<i>QUICK</i>	−7.054***	0.000	−2.136***	0.000	−2.388***	0.000	−3.408***	0.000
<i>BIG4</i>	0.323***	0.000	0.026	0.734	0.016	0.817	0.311***	0.000
<i>CASHSALE</i>	−2.427***	0.000	−1.680***	0.000	−1.299***	0.000	−0.373***	0.034
<i>TANG</i>	−0.627***	0.028	1.219***	0.000	1.742***	0.000	0.626***	0.015
<i>NEINCOME</i>	−16.959***	0.000	−8.500***	0.000	−9.254***	0.000	−3.263***	0.000
<i>RECT</i>	10.054***	0.000	1.807***	0.000	2.213***	0.000	1.871***	0.000
<i>MKTINDEX</i>	1.383***	0.035	−0.998	0.090	−1.375***	0.014	−1.403***	0.023
<i>GDP</i>	0.136	0.701	−0.330	0.271	−0.524	0.071	−0.394	0.240
<i>UNEMP</i>	−0.166	0.203	−0.028	0.839	0.026	0.836	−0.558***	0.000
<i>DIV</i>	−1.297***	0.000	−0.315***	0.001	−0.424***	0.000	−0.428***	0.000
<i>CAPINT</i>	−9.111***	0.000	−2.788***	0.000	−4.891***	0.000	−4.413***	0.000
<i>CONSTANT</i>	−4.186	0.576	3.483	0.234	4.235	0.145	2.457	0.458
<i>Year dummy</i>	Yes		Yes		Yes		Yes	
<i>Industry dummy</i>	Yes		Yes		Yes		Yes	
<i>FE</i>	Yes		Yes		Yes		Yes	
<i>Wald Chi²</i>	4826.63		5240.26		6121.37		1461.56	
<i>Observations</i>	50,417		23,906		28,137		20,729	

Notes: ***, ** and * represent significance at the 1, 5 and 10% levels, respectively. Standard errors are clustered at the firm level. See variable definitions in [Appendix](#)

Source: Authors' own creation

Table 5.
Comparability and financial distress – firm fixed effects

results of our regression when the dependent variable is Distress4 (equal to 1 if *ICR (EBIT/ XINT)* is less than 0.8 in any fiscal year). The coefficients on *FSCOM* in Columns (2), (3) and (4) are significantly negative. Overall, the statistically significant results suggest that financial statement comparability is likely to explain firms' probability of being financially distressed.

4.4 Change analysis

To further confirm our hypothesized association between financial statement comparability and the probability of firms' financial distress, we conduct change regressions. We use two continuous variables, Altman's Z-Score and ICR as our dependent variables. The higher the Altman Z-Score, the less likely the firm is to be financially distressed. The lower the ICR, the higher the firm's debt burden and the greater the chance of being financially distressed. We examine whether changes in proxies for financial distress are explained by changes in financial statement comparability. The results are presented in [Table 6](#). Column (1) presents the results of regression in which the dependent variable is Altman's Z-Score. The coefficient on *FSCOM* is 0.183, which is significant at 1% level ($p \leq 0.000$), suggesting that the change in our financial distress proxy is explained by the change in financial statement comparability. The results in Column (2) are also consistently significant and support our hypothesis that financial statement comparability can explain financial distress.

4.4.1 Addressing endogeneity. A major concern with our predictive interpretation of the association between financial statement comparability and the probability of financial distress is endogeneity, which arises from three basic sources. The first is *omitted variables*, which refers to the variables that are likely to affect the probability of financial distress but are not directly observable. The second is *reverse causality*, which arises when one argues

Variable	Z-score		ICR	
	Coef.	p-value	Coef.	p-value
<i>ΔFSCOM</i>	0.183***	0.000	2.819***	0.000
<i>ΔSIZE</i>	0.563***	0.000	6.266***	0.000
<i>ΔQUICK</i>	0.010	0.917	−1.823	0.060
<i>ΔCASHSALE</i>	−0.334***	0.000	−1.312	0.074
<i>ΔTANG</i>	0.573***	0.001	−6.142***	0.000
<i>ΔNEINCOME</i>	−2.086***	0.000	−25.344***	0.000
<i>ΔRECT</i>	−0.120	0.436	−1.734	0.302
<i>ΔMKTINDEX</i>	0.115***	0.020	0.433	0.324
<i>ΔGDP</i>	−0.011**	0.045	0.111***	0.023
<i>ΔUNEMP</i>	0.012	0.277	−0.360***	0.000
<i>DIV</i>	0.199***	0.000	2.496***	0.000
<i>ΔCAPINT</i>	2.550***	0.000	33.641***	0.000
<i>CONSTANT</i>	−0.005	0.541	−0.266***	0.000
<i>Year Dummy</i>	No		No	
<i>Industry Dummy</i>	No		No	
<i>FE</i>	No		No	
<i>Adj. R²</i>	0.035		0.067	
<i>Observations</i>	41,992		31,897	

Table 6.

Comparability and financial distress – change regressions

Notes: ***, ** and * represent significance at the 1, 5 and 10% levels, respectively. Standard errors are clustered at the firm level. See variable definitions in [Appendix](#)
Source: Authors' own creation

that either Y causes X or that X causes Y. In the context of our sample and study, it is likely that firms that are financially sound prepare comparable financial statements because they are economically alike. The third one is the *measurement error*, which happens when an analysis includes variables measured imperfectly.

In the previous sections, we tried to address the omitted variable bias by running our main regressions with firm-fixed effects, which controls for time-variant factors. We also conduct change regressions to mitigate reverse causality. In this section, we address the aforesaid endogeneity concerns in two different ways. We first use the lag value of financial statement comparability. Second, we use instrumental variable estimation.

4.5 Lag of comparability

Following prior studies ([McKinnish, 2002](#); [Sohn, 2016](#)), we use the lag of financial statement comparability to mitigate potential endogeneity between the probability of financial distress and financial statement comparability. Lagged independent variables also mitigate simultaneity issues ([Cornett et al., 2007](#)). The results of these tests are presented in [Table 7](#). The dependent variables are the same as in the main regressions in [Table 4](#). The coefficients on *FSCOM* in all the columns are negative and significant, confirming our hypothesis that comparable firms are less likely to be financially distressed. These results also provide evidence that comparability is predictive of future distress.

4.6 Instrumental variable

To address concerns about omitted variable bias, we use a two-stage model. Prior studies ([Angrist and Krueger, 2001](#); [Riegg, 2008](#); [Zahid et al., 2020](#)) suggest that endogeneity caused by omitted variable bias can be addressed by the method of IV. In the first stage, we regress *FSCOMP4* on all exogenous variables and use the fitted value of *FSCOM* in the second

Variables	Distress1		Distress2		Distress3		Distress4	
	Coef.	p-value	Coef.	p-value	Coef.	p-value	Coef.	p-value
<i>FSCOM_{t-1}</i>	-0.321***	0.000	-0.280***	0.000	-0.480***	0.000	-0.494***	0.000
<i>SIZE_{t-1}</i>	0.090***	0.000	-0.192***	0.000	-0.111***	0.000	0.265***	0.000
<i>QUICK_{t-1}</i>	-1.454***	0.000	-1.099***	0.000	-1.719***	0.000	-3.965***	0.000
<i>BIG4_{t-1}</i>	0.162**	0.031	-0.064	0.388	-0.119	0.079	0.329***	0.000
<i>CASHSALE_{t-1}</i>	0.964***	0.000	-0.874***	0.000	-0.566***	0.000	-0.320	0.056
<i>TANG_{t-1}</i>	1.866***	0.000	0.836***	0.000	1.385***	0.000	1.441***	0.000
<i>NEINCOME_{t-1}</i>	-12.498***	0.000	-6.927***	0.000	-7.497***	0.000	-2.161***	0.000
<i>RECT_{t-1}</i>	5.853***	0.000	1.976***	0.000	1.992***	0.000	0.806***	0.020
<i>MKTINDEX_{t-1}</i>	0.615	0.075	-0.716	0.054	-1.071***	0.003	-0.354***	0.408
<i>GDP_{t-1}</i>	0.069	0.716	-0.401**	0.029	-0.540***	0.003	0.026	0.910
<i>UNEMP_{t-1}</i>	-0.126***	0.014	-0.158	0.077	-0.122	0.129	-0.292***	0.000
<i>DIV_{t-1}</i>	-1.171***	0.000	-1.011***	0.000	-1.044***	0.000	-0.868***	0.000
<i>CAPINT_{t-1}</i>	-2.899***	0.000	-0.935	0.108	-3.686***	0.000	-3.878***	0.000
<i>CONSTANT_{t-1}</i>	-6.074	0.107	7.766	0.047	11.211***	0.003	2.602	0.557
<i>Year Dummy</i>	Yes		Yes		Yes		Yes	
<i>Industry Dummy</i>	Yes		Yes		Yes		Yes	
<i>Firm Cluster</i>	Yes		Yes		Yes		Yes	
<i>Pseudo R²</i>	0.296		0.343		0.320		0.156	
<i>Observations</i>	50,429		50,429		50,429		50,429	

Financial
distress

365

Table 7.

Comparability and
financial distress –
lag of comparability

Notes: *** ** and * represent significance at the 1%, 5% and 10% levels, respectively. Standard errors are clustered at the firm level. See variable definitions in [Appendix](#)

Source: Authors' own creation

stage. Following prior studies ([Sohn, 2016](#); [Lee et al., 2017](#)), we choose: firm *SIZE*; industry return on assets (*IN_ROA*), regulation (*REGUL*), the market to book ratio (*MTB*); operating cycle (*OPCYCLE*), firm labor intensity (*LABORINT*), leverage (*LEVERAGE*), capital intensity (*CAPINT*) and *POST-2005* as our exogenous variables. The results of first stage regression are reported in [Table 8](#), Panel A. Firm *SIZE*, *IND_ROA*, *REGUL*, *OPCYCLE*, *LABORINT* and *CAPINT* are positively associated with financial statement comparability. *MTB*, *LEVERAGE* and *POST-2005* are negatively associated with comparability. The adjusted R^2 of the first stage regression is 0.263, which is consistent with prior studies [4]. We then use the fitted value of *FSCOM* and repeat the regressions from [Table 4](#). The results of the second stage regression are reported in [Table 8](#), Panel B. In each regression, the coefficient on *Predicted (FSCOM)* is negative and significant at the 1% level ($p \leq 0.000$). These results suggest that omitted variables do not affect our main results that financial statement comparability is negatively associated with the probability of being financially distressed.

4.7 Additional tests and sensitivity analysis

The main regression results are from the most commonly used measures of financial statement comparability and financial distress. In this section, we report additional tests and sensitivity analyses. Our inferences do not change when we use alternative measures of accounting comparability and financial distress.

4.8 Alternative measures of comparability

[Table 9](#) presents our results when we use three alternative measures of comparability. The first is *FSCOM10*, computed as the average of the top-10 firms' *FSCOMP* scores

Panel A – first stage regression

Variables	Coef.	p-value
SIZE	0.088***	0.000
IND_ROA	0.755***	0.000
REGUL	0.058	0.618
MTB	−0.172***	0.000
OPCYCLE	0.001***	0.000
LABORINT	9.455***	0.000
LEVERAGE	−0.830***	0.000
CAPINT	0.993***	0.000
POST-2005	−0.104***	0.000
CONSTANT	−0.812	0.000
Industry FE	Yes	
Adj. R ²	0.263	
Observations	41,068	

Panel B – second stage regression results

Variables	Distress1		Distress2		Distress3	
	Coef.	p-value	Coef.	p-value	Coef.	p-value
E(FSCOM)	−4.933***	0.000	−0.851***	0.000	−1.805***	0.000
SIZE	0.561***	0.000	−0.189***	0.000	−0.059***	0.001
QUICK	−2.937***	0.000	−0.749***	0.001	−1.150***	0.000
BIG4	0.410***	0.000	−0.088	0.280	−0.166***	0.026
CASHSALE	−0.831***	0.000	−0.822***	0.000	−0.609***	0.005
TANG	−0.033	0.879	0.874***	0.000	1.126***	0.000
NEINCOME	−1.375***	0.000	−8.282***	0.000	−8.951***	0.000
RECT	2.497***	0.000	2.562***	0.000	2.825***	0.000
MKTINDEX	−1.373***	0.002	−0.806*	0.043	−1.082***	0.006
GDP	−0.303	0.205	−0.427**	0.024	−0.511***	0.007
UNEMP	−0.387***	0.000	−0.020	0.846	0.061	0.516
DIV	−0.838***	0.000	−0.949***	0.000	−0.968***	0.000
CAPINT	3.762***	0.000	−0.598	0.407	−1.723***	0.009
CONSTANT	8.485	0.080	7.317	0.075	8.840	0.029
Year dummy	Yes		Yes		Yes	
Industry dummy	Yes		Yes		Yes	
Firm cluster	Yes		Yes		Yes	
Pseudo R ²	0.254		0.373		0.356	
Observations	41,068		41,068		41,068	

Table 8.
Two-stage least
squares

Notes: ***, ** and * represent significance at the 1, 5 and 10% levels, respectively. Standard errors are clustered at the firm level. See variable definitions in [Appendix](#)
Source: Authors' own creation

(De Franco *et al.*, 2011 p.901). The second is *INDMEAN*, which is the average *FSCOM* of all firm *i*'s *FSCOM* scores in the same two-digit SIC group. The third is *INDMDN*, which is the median *FSCOM* score for all firms *j* in the same two-digit SIC group as firm *i*. The coefficients on all comparability measures are significantly negative, indicating that the results of our main regressions presented in [Table 4](#) are robust to alternative measures of comparability.

4.9 Alternative measures of financial distress

The documented result in our analysis may be driven by the choice of proxies of financial distress. To address this concern, we use four alternative proxies for financial distress.

Panel A – Alternative measures of comparability

Variables	FSCOM10		INDMEAN		INDMDN	
	Coef.	p-value	Coef.	p-value	Coef.	p-value
FSCOM	−0.512***	0.000	−0.314***	0.000	−0.330***	0.000
SIZE	−0.108***	0.000	−0.109***	0.000	−0.102***	0.000
QUICK	−1.541***	0.000	−1.771***	0.000	−1.803***	0.000
BIG4	−0.104	0.129	−0.124*	0.070	−0.118**	0.085
CASHSALE	−0.657***	0.000	−0.596***	0.000	−0.471***	0.003
TANG	1.228***	0.000	1.425***	0.000	1.317***	0.000
NETINCOME	−6.972***	0.000	−6.694***	0.000	−6.242***	0.000
RECT	2.229***	0.000	1.863***	0.000	1.921***	0.000
MKTINDEX	−0.912**	0.011	−1.225***	0.001	−1.174***	0.001
GDP	−0.384**	0.034	−0.483***	0.008	−0.505***	0.005
UNEMP	−0.068	0.397	−0.106	0.193	−0.096	0.240
DIV	−1.002***	0.000	−0.983***	0.000	−0.922***	0.000
CAPINT	−2.868***	0.000	−3.437***	0.000	−3.048***	0.000
CONSTANT	8.820**	0.019	11.770***	0.002	11.400***	0.002
Year Dummy	Yes		Yes		Yes	
Industry Dummy	Yes		Yes		Yes	
Firm Cluster	Yes		Yes		Yes	
Pseudo R ²	0.328		0.327		0.335	
Observations	50,430		50,430		50,430	

Panel B – Alternative measures of distress

Variables	Distress5		Distress6	
	Coef.	p-value	Coef.	p-value
FSCOM	−0.760***	0.000	−0.983***	0.000
SIZE	0.252***	0.000	0.321***	0.000
QUICK	−4.800***	0.000	−1.967***	0.000
BIG4	0.064	0.156	0.075	0.298
CASHSALE	0.492***	0.000	0.121	0.369
TANG	0.880***	0.000	0.644***	0.002
NETINCOME	−3.128***	0.000	−3.426***	0.000
RECT	0.788***	0.000	0.803***	0.023
MKTINDEX	−0.209	0.331	−0.109	0.786
GDP	0.107	0.371	0.172	0.432
UNEMP	−0.084***	0.009	−0.165***	0.008
DIV	−5.097***	0.013	−25.769***	0.000
CAPINT	−1.436***	0.000	−4.578***	0.000
CONSTANT	−1.662***	0.305	−1.225	0.784
Year dummy	Yes		Yes	
Industry dummy	Yes		Yes	
Firm cluster	Yes		Yes	
Adj. R ²	0.475			
Pseudo R ²			0.163	
Observations	49,194		50,222	

Panel C – Alternative measures of financial distress

Variables	Dist7		Dist8	
	Coef.	p-value	Coef.	p-value
FSCOM	−0.243***	0.000	−0.453***	0.000
SIZE	−0.073***	0.000	−0.053***	0.000
QUICK	−0.365***	0.000	−0.187***	0.000

(continued)

Table 9.
Additional tests and
sensitivity analysis

Panel C – Alternative measures of financial distress

Variables	Dist7		Dist8	
	Coef.	p-value	Coef.	p-value
BIG4	−0.090***	0.000	0.054***	0.000
CASH	−2.973***	0.000	−1.887***	0.000
TANG	−0.783***	0.000	0.422***	0.000
REC	0.758***	0.000	0.616***	0.000
MKTINDEX	0.006	0.655	0.091***	0.000
GDP	0.018***	0.000	−0.032***	0.000
UNEMP	−0.032***	0.000	0.020***	0.000
DIV	−0.304***	0.000	−0.531***	0.000
CAPINT	−0.607***	0.000	−1.596***	0.000
CONSTANT	0.164	0.225	−1.037***	0.000
Firm FE	No		No	
Industry FE	No		No	
Pseudo R ²	0.389		0.194	
Observations	50,430		50,430	

Panel D – Additional control variables

Variables	Distress1		Distress2		Distress3	
	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value
FSCOM	−0.098***	0.000	−0.128***	0.000	−0.128***	0.000
SIZE	0.090***	0.000	0.059***	0.000	0.059***	0.000
QUICK	−0.880***	0.000	−0.040	0.596	−0.040	0.596
BIG4	0.138***	0.000	0.033	0.173	0.033	0.173
CEODUAL	−0.010	0.364	−0.017	0.107	−0.017	0.107
GENDER	−0.020	0.150	0.029	0.078	0.029	0.078
TMTSIZE	0.001	0.600	0.003	0.070	0.003	0.070
CASHSALE	−0.171	0.062	−0.331***	0.001	−0.331***	0.001
TANG	0.145	0.180	0.157	0.167	0.157	0.167
NETINCOME	−0.304***	0.004	−0.374***	0.002	−0.374***	0.002
RECCT	0.773***	0.000	0.237	0.184	0.237	0.184
MKTINDEX	−0.334	0.069	−0.289	0.076	−0.289	0.076
GDP	0.013	0.832	0.014	0.748	0.014	0.748
UNEMP	−0.054***	0.004	−0.041**	0.020	−0.041**	0.020
DIV	0.014	0.520	−0.013	0.531	−0.013	0.531
CAPINT	−0.858**	0.025	−0.277	0.475	−0.277	0.475
CONSTANT	3.505	0.076	2.459	0.155	2.460	0.155
Year dummy	Yes		Yes		Yes	
Industry dummy	Yes		Yes		Yes	
Firm cluster	Yes		Yes		Yes	
Pseudo R ²	0.307		0.367		0.442	
Observations	25,506		25,676		24,607	

Notes: ***, ** and * represent significance at the 1, 5 and 10% levels, respectively. Standard errors are clustered at the firm level. See variable definitions in [Appendix](#)

Source: Authors' own creation

Table 9.

Following prior studies ([Brown and Knechel, 2016](#)), we use; Distress5, which is the Zmijewski score; Distress6, which is 1 if the ratio of long term debt to total assets is in the fifth quantile and 0 otherwise; Distress7, which is 1 if net income for the year is negative, and 0 otherwise; and Distress8, which is 1 if cash flows from operations is negative for the year, and 0 otherwise. The results of these tests are reported in Panels B and C of [Table 9](#). These results too, are consistent with the results presented in [Table 4](#), suggesting that our results are not driven by the choice of proxy for financial distress.

4.10 Additional control variables

To further assess the robustness of our results, we run additional analysis by including additional control variables such as *CEO* duality, top management team size (*TMT*) and executive *GENDER*. Prior studies (Lee and Yeh, 2004; Younas *et al.*, 2021) find that firms with weak corporate governance are vulnerable to economic downturns as well as their probability of falling into financial distress is higher. These studies also reveal a significant negative association between *CEO* duality and financial distress indicators. We measure *CEO* duality equal to 1 if the CEO is also the chairman or president, and otherwise 0, top management team size (*TMT*) is the number of executives in the top management team reported in their 10-K's, and *GENDER* equal to 1 if the gender of executive is female, and otherwise 0. The results of these tests are reported in Panel D of Table 9. The coefficients of comparability measure are significantly negative (p -value < 0.01), indicating that the results of our main regressions presented in Table 4 are robust to additional control variables.

4.11 Conclusions

Our study provides evidence that distressed firms produce financial statements that compare poorly to those of peer firms. This evidence suggests that the use of financial ratios to define or predict distress firms may be conditional on accounting comparability. We also provide evidence that financial statement comparability provides useful information for identifying and predicting financial distress.

The findings of our study suggest that firms with higher accounting comparability are less likely to face financial distress, and our findings have important practical implications for different stakeholders, including investors, financial analysts, auditors and regulatory bodies. For investors and financial analysts, the results imply that accounting comparability can serve as a useful signal for identifying companies that are more likely to remain financially stable in the long run. Thus, they may prefer to invest in or recommend highly comparable firms over their less comparable counterparts. For auditors, the study underscores the importance of promoting and enforcing accounting standards that improve comparability, as this can help mitigate the risk of financial distress among their clients. Regulators may also consider the implications of the study's findings when designing policies and guidelines related to financial reporting and disclosure. By promoting greater accounting comparability among firms, regulatory bodies may help reduce the likelihood of financial distress among companies, which can have broader economic implications.

There are several limitations to consider when interpreting the findings of our study. First, the study relies on publicly available financial data and does not account for potential differences in the accounting practices across countries. This may limit the generalizability of the study's findings to other contexts. Second, while we find an association between accounting comparability and financial distress, it does not establish a causal relationship. Other uncontrolled factors may also contribute to the association between accounting comparability and financial distress. Third, our study uses different proxies for financial distress suggested by prior studies; however, use of other proxies may provide different results. Finally, the study could not include all relevant variables that may affect the relationship between accounting comparability and financial distress, such as industry-specific factors and macroeconomic conditions.

The findings of this study suggest several future research opportunities that could expand our understanding of the association between accounting comparability and financial distress. First, our study focuses on the US firms. Future research may investigate the relationship between accounting comparability and financial distress in other countries to assess the generalizability of the findings. Second, future studies can investigate the impact of changes in accounting standards on the association between the variables. Third, the study only focused on publicly traded firms, and future research may investigate

whether the relationship between accounting comparability and financial distress differs across different types of ownership structures, such as private or family-owned businesses. Fourth, further research could examine the role of corporate governance in the relationship between accounting comparability and financial distress, as this may impact the ability of firms to mitigate financial risks. Overall, future research in these areas could help to deepen our understanding of the relationship between accounting comparability and financial distress and its implications for various stakeholders.

Notes

1. Financial Accounting Standard Board (FASB), Conceptual Framework for Financial Reporting. Statement of Financial Accounting Concepts (SFAC) No. 8, <https://www.fasb.org/>.
2. See footnote 1.
3. We use cash from operating activities (*OANCF*), which is available from 1987 onward.
4. Sohn's (2016) analysis has 20.67% of R^2 .

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Variable	Definition
<i>Distress1</i>	=1 if modified Altman Z-Score is less than 1.81, and 0 otherwise
<i>Distress2</i>	=1 if leverage is in the fifth quantile, and 0 otherwise
<i>Distress3</i>	=1 if ICR in any fiscal year is less than 0.8 or ICR is less than 1 in any two consecutive years
	$ICR = \frac{EBIT + XINT}{XINT}$
<i>Distress4</i>	=1 if ICR is less than 0.8 in any fiscal year, and 0 otherwise, where $ICR = EBIT / XINT$
<i>Distress5</i>	=Zmijweski score, where $ZMIJ = -4.3 - 4.5 * \text{net income divided by total assets} + 5.7 * \text{total liabilities divided by total assets} - 0.004 * \text{current assets divided by current liabilities}$
<i>Distress6</i>	The higher the value of ZMIJ, the greater the level of financial distress =1 if the ratio of long-term debt to total assets is in the fifth quantile. The higher the ratio of long-term debt to total assets, the greater the levels of financial distress
<i>Distress7</i>	=1 if net income in the year $alic > t$ is negative and 0 otherwise
<i>Distress8</i>	=1 if cash flow from operation is negative in the year and 0 otherwise.
<i>FSCOM</i>	Financial statement comparability, a firm-year measure following De Franco <i>et al.</i> (2011). Our main variable, FSCOM, is the average of firm i's four highest comparability scores during year t
<i>FSCOM10</i>	The average financial statement comparability scores of the top-10 firms (De Franco <i>et al.</i> , 2011)
<i>FSCOMINDMEAN</i>	The average FSCOM of all firm i's comparability scores in the same two-digit SIC industry during year t
<i>FSCOMINDMDN</i>	The median FSC values for all firms j in the same two-digit SIC industry as firm during period t
<i>SIZE</i>	=log of total assets
<i>QUICK</i>	=sum of receivable and cash and short-term investment divided by total assets
<i>BIG4</i>	=1 if the auditor is one of the big4 auditors, and 0 otherwise
<i>CASHSALE</i>	=ratio of cash flow to total sale
<i>TANG</i>	=property plant and equipment divided by total assets
<i>NETINCOME</i>	=net income divided by total sales
<i>RECT</i>	=receivables divided by total sales
<i>MKTINDEX</i>	=log of share price index
<i>GDP</i>	=change in US GDP
<i>UNEMP</i>	= rate of US unemployment
<i>DIV</i>	=1 if dividend is greater than 0, and 0 otherwise
<i>DEBT</i>	= total debt divided by total assets
<i>CAPINT</i>	= capital intensity calculated by R&D divided by total assets

Table A1.
Variable definitions

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