

DEFERRED TAXES AND VALUING NEGATIVE EQUITY

Abstract: Negative book equity firms have grown to comprise a substantial subset of the equity market, totaling \$893 billion in market value at the end of 2017. Few studies focus on negative book equity firms, leaving our understanding of this sector of the market inadequate. One important question that exists is how investors place positive market value on these negative book equity firms. There are concerns with interpretation of negative book equity firms using empirical value relevance model measures based on earnings and equity book value. In this study, I investigate and find that net deferred taxes provide incremental value-relevant information to investors in negative book equity firms. Net deferred taxes may serve as a signaling mechanism from management through which investors can assess the market value of these firms.

Acknowledgments

This paper is based on my dissertation. I acknowledge the support of the Department of Accounting, the College of Business, the Legacy Fellowship, and the Evelyn R. and John W. Baugh Scholarship at Florida State University. My committee, Bruce Billings (chair), Anne Ehinger, Richard Morton, Miles Romney, and Yingmei Cheng, provided invaluable feedback and motivation. I would also like to thank Evan Eastman, Jennifer Glenn, Rebecca Means, Spencer Pierce, workshop participants at Florida State University, the University of North Carolina-Wilmington, and Jacksonville University, and the Fellows Society at Florida State University for their comments and suggestions.

Introduction

Deferred taxes are shown to provide incremental information and value relevance to equity investors (Ayers 1998; Amir et al. 2001; DeWaegeaere et al. 2003; Kumar and Visvanathan 2003; Bauman and Das 2004; Lev and Nissim 2004; Hanlon and Slemrod 2009; Dhaliwal et al. 2013). In this study, I extend this research and identify another situation where deferred taxes provide additional information that is value-relevant to shareholders. Specifically, I examine net deferred taxes as an important value driver for firms with negative book value of equity.

Book value of equity is typically viewed as a measure of value to shareholders. However, close to 15 percent of firms in the Compustat universe, with a combined value of \$893 billion, report negative book equity, and often negative earnings.^{1,2} Since negative book equity has no clear interpretation in a valuation setting given shareholders' limited liability, value-relevance models that are well specified for positive book equity firms may not adequately represent how investors value negative book equity firms. I investigate whether net deferred tax disclosures, which convey management's expectations about the likelihood of future positive earnings for realizing certain tax benefits, provide incremental information to investors when valuing negative book equity firms. While variations of net deferred taxes have been considered in prior value relevance studies not focused on negative book equity, I assess whether they play an important valuation role for negative book equity firms specifically and whether they are more important for negative than positive book equity firms.

Firms with negative book equity, along with a higher frequency of losses, have generally been considered in financial distress and not expected to survive (Fama and French 1993; Dichev

¹ The combined value of \$893 billion is as of the end of 2017.

² Between 2004 and 2017, an average of over 87% of negative book equity firms report earnings losses.

1998), yet investors attach positive value to these firms and many of them do not delist. As negative book equity firms are often omitted from samples, we know little about these firms, including how investors assess a positive market value for these negative book equity firms. Accounting measures, other than earnings and book value, could provide information that investors use to help determine that a company's current state of distress suggested by its negative book equity is temporary. In one study focusing on negative book equity and research and development (R&D), Jan and Ou (2012) find that investors also price total assets and accumulated research and development (R&D) expenditures. However, R&D intensive industries make up less than 45 percent of their sample of negative book equity firms, suggesting the need to investigate broader drivers of value for these firms.³ Potential value indicators such as net deferred tax disclosures are not limited to a particular set of industries as are R&D expenditures, giving these the potential to provide value-relevant information for a broader range of negative book equity firms.

Net deferred taxes represent future tax benefits that decrease effective tax rates and increase potential future cash tax savings (Christensen et al. 2017). While firms with negative book equity and years of losses would appear to have a limited ability to realize these benefits, especially if they are not expected to survive, positive or zero net deferred taxes indicate that management expects sufficient positive future earnings to enable the firm to take advantage of at least some of those tax benefits. Using samples dominated by or limited to firms with positive book equity, prior studies provide evidence that investors value the deferred tax accounts (Amir et al. 1997; Ayers 1998; Amir and Sougiannis 1999; Amir et al. 2001). Their results suggest that investors consider

³ According to Jan and Ou (2012), the most R&D intensive industries are defined using the following two digit SIC codes: Industrial Machinery and Equipment (25), Chemicals and Allied Products (28), Electrical and Electronic Equipment (36), Communications (48), and Business Services (73).

positive net deferred taxes as an indicator of future profitability that will allow them to take advantage of tax benefits represented by the deferred tax accounts.

To ensure a consistent tax regulation regime with respect to deferred taxes and Compustat data collection under XBRL, my sample period for testing hypotheses begins in 2004 and ends at the enactment of the Tax Cuts and Jobs Act of 2017.⁴ However, using a sample with minimal data restrictions for 1990-2017, I confirm the increasing percentage of negative book equity firms documented in Jan and Ou (2012) for earlier years (Figure 1, Panel A). Interestingly, the percentage of negative book equity firms generally levels off after 2000. For my more restricted sample during 2004-2017 (Figure 1, Panel A), the percentage of firms with negative book equity ranges between 13 and 18 percent. This figure demonstrates the steady persistence of negative book equity firms, and that the systematic omission of these firms from prior studies ignores a substantial subset of the equity market. With the recent economic turmoil, more firms may be expected to join this subset, at least temporarily.

To assess the value relevance of this variable to investors in negative book equity firms, I regress firm share prices on net deferred taxes, while including earnings, book value, and other value drivers identified by prior research as controls (e.g. Jan and Ou 2012). In particular, I regress share prices on net deferred taxes, earnings, book value, total assets, total revenue, three-year accumulated R&D expenditures, and either cash holdings or operating cash flow to examine the potential for net deferred taxes to serve as a significant value indicator for negative book equity

⁴ Changes to tax rates and carryforward of operating losses as a result of enactment of the Tax Cuts and Jobs Act (TCJA) of 2017 may impact net deferred tax calculations for fiscal years ending after 6/30/2017 as firms make required adjustments to estimates that impact deferred taxes. Results of regressions estimated after eliminating post 6/30/2017 year ends were essentially the same as with the sample including all 2017 year-ends. Under TCJA the carryforward period is indefinite but net operating losses can only be used against 80 percent of taxable income. More recent legislation, the CARES Act of 2020, extends the carryback and carryforward periods. These changes are most likely to impact the time horizon for the predictability and value relevance of net deferred taxes, so I expect my results to hold after the adjustment period.

firms. In addition, I compare results from these regressions to the same regressions for a sample including both positive and negative book equity firms to determine if net deferred taxes are more value relevant to investors in firms with negative book equity than positive book equity.

I find that net deferred taxes are valued positively for negative book equity firms and are valued more positively for negative relative to positive book equity firms. I thus identify net deferred taxes as a variable that is particularly useful for value-relevance studies of an often-overlooked segment of the equity market, negative book equity firms. I also run several cross-sectional tests that support my conclusion that net deferred taxes are a signal that may be used by investors in valuing firms with negative book equity and may help them assess whether the firms are not as distressed as their negative book values and (often) losses would otherwise suggest.

This study adds to our understanding of the valuation of negative book equity firms in capital markets. Negative book equity firms make up a substantial percentage of capital markets. Identification of a forward-looking value driver represents an important contribution to our understanding of how investors value these oft neglected (by research) firms. The addition of net deferred taxes to value relevance models addresses the need to adapt our understanding of valuation to the increasing presence of negative book equity firms, with a focus on considering the value-relevance of a forward-looking tax related account.

As noted by Hanlon and Heitzman (2010, 129), there is a lack of understanding of loss firms (and by extension, negative book equity firms), the “utilization and value of tax-loss carryforwards”, and the effects on behavior resulting from losses. By focusing on investigating the potential role of net deferred taxes in valuation, I address this gap in the literature and increase our knowledge about firms with negative book equity and tax loss carryforwards. Previously, researchers have empirically (Amir et al. 1997; Ayers 1998; Amir and Sougiannis 1999) and

theoretically (e.g., Sansing 1998; Amir et al. 2001; Guenther and Sansing 2004) examined the valuation of deferred taxes and their various components. I extend the analyses in these studies by linking this forward-looking disclosure to negative book equity firms, which have been largely ignored in these and other prior studies. My results indicate investors find deferred tax disclosures to be significantly more value relevant for negative book equity firms than for positive book equity firms.

Related Literature

Valuation Models, Book Equity, and Earnings

Prior studies use value relevance models to identify systematic patterns in how investors value firms (Francis and Schipper 1999; Barth 2000). Barth, Beaver, and Landsman (2001, 78) argue “value relevance studies are designed to assess whether particular accounting amounts reflect information that is used by investors in valuing firms’ equity.” Accordingly, accounting researchers generally focus on accounting measures expected to convey information about future performance, such as earnings. Value relevance is indicated by a significant association between the accounting measure and equity market value or stock price (Beaver 1968; Barth 2000; Lo and Lys 2000; Barth, Beaver, et al. 2001). These value relevance studies use empirical models that are often derived from theoretical valuation models such as that introduced in Ohlson (1995) and later expanded in Feltham and Ohlson (1995) and Ohlson (1999). These models generally provide the foundation for directly relating firm value to accounting numbers (earnings and book value) (Barth 2000).

While initial models relate firm value to expected future dividends, proxied by accounting earnings (Miller and Modigliani 1966; Ball and Brown 1968; Beaver 1968; Lev 1989; Barth et al. 1992), more recent valuation models incorporate book value of equity, which represents the value

of net assets attributable to the investors (Landsman 1986; Barth 1991). Ohlson (1995) brings together the two components under the clean surplus assumption (i.e., that earnings minus dividends equal the change in equity book value). Empirical valuation models that relate stock price/returns to income statement and balance sheet information are derived from the clean surplus relation (Ohlson 1991; Ohlson 1995), where price is expressed as a function of book value, earnings, and other value-relevant information (Amir 1993; Sougiannis 1994).

In value relevance studies, a variable is value-relevant to investors if the association between stock price and that variable is significant (Lo and Lys 2001) and increases the power of the estimation to explain the stock price (Barth 2000). For example, a significantly positive coefficient on earnings and book value indicates both financial statement components are value-relevant such that greater earnings/book values correspond to greater market values. However, prior studies find that price relates negatively to earnings for a firm with negative earnings. Collins, Pincus, and Xie (1999) find that including book value of equity in the regression shifts the earnings coefficient from negative to either positive or insignificant, illustrating the importance of including both earnings and book value in a pricing model.

Negative Book Equity and Losses

More problematic for a pricing or value relevance model are firms with negative book equity. Since most negative book equity firms also have negative earnings (Figure 1, Panel B), regressing stock price on book value of equity and earnings often yields negative coefficients (e.g. Jan and Ou 2012). This counter-intuitive result implies that as earnings/book values decline, stock prices increase. One interpretation of this result is that empirical value relevance models relying on earnings and book value of equity alone suffer from omitted variables. Therefore, earnings and book value alone do not adequately capture the value investors attribute to these firms.

Miller and Modigliani (1966) document that losses complicate the price-earnings relationship because negative earnings are generally not predictive of the potential future earnings of the firm's assets. Biases in capitalization models exist when there is an assumption of a homogeneous relationship between earnings and market price with both profit and loss firms (Hayn 1995). For example, when a firm is in financial distress, the potential as a going concern declines, the abandonment (liquidation) option (Hayn 1995; Berger et al. 1996) or alternative uses (Burgstahler and Dichev 1997) become more relevant, and book value becomes more pertinent than potential future earnings (Burgstahler and Dichev 1997; Barth et al. 1998; Collins et al. 1999; Blay et al. 2011; Barth et al. 2019).

In addition to interpretation difficulties with empirical value relevance models, negative book equity firms are often assumed to be few in number, to be in financial distress, and to have a lower chance of survival (Fama and French 1993). Based on commonly used measures of financial health, the firms reporting negative book equity appear to be distressed. For example, within my sample, I find that 92% of the firms reporting negative book equity fall in the lowest tercile of Altman (1968) Z-Scores, suggesting they are relatively the most distressed firms. Yet, many survive for years with negative book equity, many return to positive equity, but surprisingly few delist (Jan and Ou 2012). In my sample, survival rates for firms reporting negative book equity between one and four years during my sample period are similar to survival rates of firms with positive book equity in all years (Table 1, Panel B). Surprisingly, firms reporting five or more years of negative book equity had survival rates that exceed those of firms with only positive book equity in all years. Examples of firms reporting multiple years of negative book equity during my sample period include Glacier Water, Friendlys Ice Cream, and Dominos (12 years), AMC Theaters and Weight Watchers Intl (13 years), and Revlon (18 years).

Prior research documents the increased frequency of firms with negative book value of equity (but positive market value) over time (Givoly and Hayn 2000; Brown et al. 2008; Jan and Ou 2012; Li 2013; Ang 2015). Jan and Ou (2012) find that the percentage of firms with negative book equity increased almost 200 percent between 1976 and 2005, representing 15 percent of all Compustat firms.⁵ Moreover, from an investor perspective, negative book equity is difficult to interpret economically given shareholders' limited liability (i.e., the lower bound on price is zero) (Brown et al. 2008). For these reasons, previous valuation studies generally eliminate from their samples firms with negative book equity (e.g., Fama and French 1992; Collins et al. 1997; Chui and Wei 1998; Frankel and Lee 1998; Beaver and Ryan 2000b; Griffin and Lemmon 2002; Core et al. 2003; Donotoh et al. 2004; Vassalou and Xing 2004; Balachandran and Mohanram 2011). The practice of simply omitting these firms raises concerns about sample selection criteria and potential biases; an issue more recent research has recognized (Darrough and Ye 2007; Brown et al. 2008; Jan and Ou 2012; Ang 2015). Therefore, identifying indicators of value relevance that result in better specified value-relevance models for negative book equity firms has taken on greater importance to avoid the systematic deletion of these firms from related studies.

Identifying other indicators of value for negative book equity firms may be particularly important since investors are facing a weaker information environment. For example, only 34% of negative book equity firms in my sample are followed by analysts. Thus, information beyond that provided by the financial statements may not be readily available. This scarcity of external information sources will likely magnify investors' reliance on available indicators of value.

Researchers have made some efforts to adapt value relevance models to include negative earnings or negative book equity in their samples by including other omitted accounting measures

⁵ Jan and Ou (2012) exclude financial firms (SIC 6000-6999) and utilities (4900-4999).

with the potential to be value relevant to investors. For example, studies generally find that accruals and cash flows are value-relevant in a pricing model (Dechow 1994; Barth et al. 1999; Barth, Cram, et al. 2001; Hanlon 2005; Tahat and Alhadab 2017). Interestingly, in an investigation of the cellular industry, Amir and Lev (1996) find that sales, general, and administrative expenses, depreciation and amortization expenses, and non-financial variables such as market share are incrementally value-relevant to investors.

The increased proportion of negative book equity firms over time seems to be partially related to the greater prevalence of knowledge-based and service firms that rely heavily on intangibles and/or R&D (Collins et al. 1997). For these types of firms, earnings and book values do not reflect expected future activities/profitability and current value. R&D decreases current earnings, while equity book value fails to capture the expected benefits that investment and production activities create (e.g., Amir and Lev 1996; Collins et al. 1997; Lev and Zarowin 1999; Chan et al. 2001; Darrough and Ye 2007; Jan and Ou 2012).

Relatedly, several researchers find that intangibles and R&D costs have become increasingly relevant to equity valuation (e.g., Aboody and Lev 1998; Chan et al. 2001; Core et al. 2003; Joos and Plesko 2005; Bauman and Shaw 2018; Barth et al. 2019). Jan and Ou (2012) find that accumulated R&D expenditures help mitigate the negative price-earnings relationship found with negative book equity firms and increase the model's explanatory power. In spite of improvement in explanatory power, there remains a considerable amount of unexplained variability in the valuation model since R&D intensive firms make up less than 50 percent of all negative book equity firms. Other financial statement components may improve the explanatory power of value relevance models and provide incremental value relevant information for investors across a broader range of negative book equity firms, not just those engaged in intensive R&D. In

particular, a measure such as net deferred taxes that capture managers' expectations about potential future cash tax savings may provide value relevant information for negative book equity firms where earnings and book values alone are less useful sources of information.

Deferred Taxes

In February 1992, the Financial Accounting Standards Board (FASB) issued Statement No. 109, Accounting for Income Taxes (codified as ASC 740). This statement superseded FASB Statement No. 96 and was effective after December 15, 1992. Under ASC 740, firms are required to recognize both current and deferred tax liabilities or assets (Financial Accounting Standards Board 1992). Deferred tax assets (liabilities) exist when temporary book-tax differences result in expected future reductions (increases) in tax or taxable income. Specific types include temporary differences between book and tax income (e.g. different depreciation methods) and tax loss carryforwards. Temporary differences in deferred tax liabilities create taxable income in future periods that may be used to offset both temporary differences in deferred tax assets and tax loss carryforwards. Tax loss carryforwards may be used against future profits to reduce tax liability. Prior research finds evidence that investors value components of deferred tax assets. For example, Amir and Sougiannis (1999) find investors value tax loss carryforwards as assets.

Firms reduce the deferred tax asset generated for future tax benefits using a valuation allowance if the benefit from the deferred tax asset is not expected to be realized in future years. This estimation is made after including consideration of reversal of any deferred tax liabilities. As a result, net deferred taxes represent the expected future tax benefit, net of deferred tax liabilities, management believes, based on currently available evidence and expectations for the future, will "more likely than not" be realized (FASB 1992). Prior research suggests investors and credit

agencies infer information about management's expectations of future performance from valuation allowance disclosures (Kumar and Visvanathan 2003; Edwards 2018).

Negative book equity firms have cumulative losses in recent years that qualify as negative evidence requiring the accrual of a valuation allowance. To support not accruing a valuation allowance, companies with cumulative losses in recent years should have a higher-level criterion "such as *assured beyond a reasonable doubt*" (emphasis original) and require "positive evidence of sufficient quality and quantity to counteract the negative evidence" (FASB 1992, 36). If, therefore, a firm with negative book equity has positive net deferred taxes (i.e. the valuation allowance does not fully offset the net asset balance), the firm has sufficient positive evidence of future ability to use the tax benefits to satisfy regulators and auditors despite multiple years of loss and/or negative equity. Dhaliwal, Kaplan, Laux and Weisbord (2013) find the incremental information about the persistence of accounting losses contained in tax accounts is consistent with management having private information and using it to set the valuation allowance and Edwards (2018) finds material changes in the valuation allowance help predict firm future creditworthiness.

Hypothesis Development

Net deferred taxes represent potential future cash tax savings and management's private expectations about future performance. Prior research demonstrates that deferred taxes and the separate components of deferred tax assets and deferred tax liabilities are relevant to equity valuation (Amir et al. 1997; Amir and Sougiannis 1999; Amir et al. 2001; DeWaegenaere et al. 2003; Lev and Nissim 2004; Hanlon and Slemrod 2009; Sarkar 2014). In theoretical studies, researchers argue that deferred tax liabilities are important in determining the value relevance of deferred taxes (Sansing 1998; Guenther and Sansing 2000; Amir et al. 2001; Guenther and Sansing 2004). According to ASC 740, which calls for an explicitly asset-liability approach to income

taxes, one of the first considerations for management in determining their valuation allowance is “future reversals of existing temporary differences” (ASC 740-10-30-18). Deferred tax assets represent future tax benefits resulting from temporary differences expected to reverse and net operating loss carryovers. Both require sufficient taxable income to use the benefits. Deferred tax liabilities represent future taxable income, not financial income. Deferred tax assets offset by deferred tax liabilities signal sufficient future taxable income, while deferred tax assets above and beyond those offset by deferred tax liabilities signal expected future profitability beyond those temporary differences. Therefore, the existence of deferred tax liabilities is an important factor for determining the balance in deferred tax assets, and thus the signal of management’s expectations of future performance. I provide an example in Appendix A.

I use net deferred taxes (gross deferred tax assets less valuation allowance less deferred tax liabilities) in my primary analysis, and then break the variable in to its constituent components of deferred tax assets and deferred tax liabilities in supplemental analyses. If net deferred taxes are positive or close to zero, then the expectation for the future is a return to profitability and the ability to use the tax benefit. Therefore, for negative book equity firms, I hypothesize that investors value net deferred taxes positively (stated in alternative form).

H1a: Investors in negative book equity firms value net deferred taxes positively.

As Amir and Sougiannis (1999) point out, deferred tax assets from loss carryforwards may be viewed from different perspectives: as future cash tax savings or as a signal that future losses are probable. As discussed above, if investors view deferred taxes as an indicator of future profitability and future cash tax savings, deferred taxes for negative book equity firms should be viewed positively by investors. However, it is possible that for negative book equity companies, where tax loss carryforwards are likely a large portion of the deferred tax assets, investors may

perceive the occurrence of past losses as an indicator of a higher likelihood of future losses and value deferred taxes negatively or not attach value to the disclosure. Using a sample restricted to Fortune 500 companies from 1992-1994, i.e. not focused on negative book equity firms, Amir and Sougiannis (1999) find that earnings and book values are less value relevant when firms have loss carryforwards than without loss carryforwards. Though the value relevance of net deferred taxes for negative book equity firms is an open empirical question, the continued positive market value attached to these firms suggests an expectation of returning to profitability so I expect that net deferred taxes are valued positively.

Relative to negative book equity and earnings, positive book equity and earnings are likely to provide more relevant information, and so investors are more likely to rely on these as premier indicators of future profitability and value. If so, these investors will have less need for other indicators of value such as net deferred taxes when valuing positive book equity companies. In contrast, when valuation based on book value and earnings is more difficult, other indicators of value, such as net deferred taxes, may take on increasing importance. For example, when internet firms in the 1990s had tax loss carryforwards and deferred taxes resulting from years of accounting losses, investors relied on deferred taxes in valuing these companies, suggesting that deferred taxes provided information about future earnings (Bauman and Das 2004). In kind, negative book equity firms have also accumulated substantial deferred tax assets and tax loss carryforwards resulting from prior losses. These should reflect higher expected future cash tax savings. Therefore, the lack of forward-looking information in earnings and book value of equity should lead investors to find that net deferred taxes are a relatively more important source of value-relevant information for negative book equity firms than for positive book equity firms, as expressed in the following hypotheses (in alternative form).

H2a: Investors in negative book equity firms value net deferred taxes more positively than do investors in positive book equity firms.

Research Design and Methodology

Sample Selection

I begin with a sample of all Compustat U.S. incorporated firms from 1990-2017 to enable calculation of lagged variables and to collect information on trends in losses and negative book equity. The sample period for this study covers 2004-2017 to ensure a relatively stable tax regime and data availability with respect to deferred taxes and the valuation allowance, resulting in 113,776 firm-years (Table 1, Panel A). I eliminate financial, insurance, real estate, limited partnerships, limited liability companies, and holding/mutual firms due to regulatory, tax, and ownership differences that may alter the relationship between market price and the variables tested, reducing the sample by 48,775 firm-years.⁶ Each firm is required to have a minimum of three years of data between 2002 and 2017 for calculation of the three-year cumulative R&D expense (xrd). Missing amounts in R&D expense are replaced with zeros. Firms with missing data for common stockholders' equity (ceq), net income (ni), total assets (at), total revenue (revt), cash and cash equivalents (che), operating cash flows (oancf), SIC Industry Code (sic), common shares outstanding (csho), and following year first quarter market price (prcc_q) are eliminated from the sample. Consistent with Jan and Ou (2012) and because I focus on the market price of common equity, I identify a firm-year as negative book equity if book value of common equity (ceq) is negative and positive equity otherwise. I calculate net deferred taxes as either deferred tax assets (deferred tax assets less the valuation allowance) less deferred tax liabilities (txndba-txndbl) or net

⁶ Following Jan and Ou (2012), Phillips, Pincus, and Rego (2003), and Dyreng, Hanlon, and Maydew (2008), the following were eliminated: SIC 6000-6999, SIC 4900-4999, firms with names ending in -LP, containing "Trust", "Ltd", and "LLP", and with six-digit CUSIPs ending in "Y" or "Z"

deferred taxes (txndb).⁷ Firms with missing net deferred tax information are eliminated from this study. To mitigate the impact of outliers/extreme observations and reduce skewness, I truncate the data at the 1 and 99 percentiles separately within the negative book equity firm-years and the positive book equity firm-years, then combine the two resulting subsamples to create my full sample.

The resulting sample contains 47,857 firm-years consisting of 40,616 positive book equity firm-years and 7,241 negative book equity firm-years (Table 1, Panel A). Negative book equity firm-years make up an average of 15 percent of the sample, ranging from 13 percent in 2007 to 18 percent in 2016 (Figure 1, Panel A; Table 1, Panel C). As Figure 1, Panel B and Table 1, Panel C illustrate, the frequency of a current earnings loss ranges from 40 to 52 percent of firm-years over the sample period. However, this is largely driven by negative book equity firms, where the frequency of an current earnings loss ranges from 83 to 91 percent of firm-years over the sample period. In support of the increasing trend in negative book equity firms and current loss firms, for my sample period of 2004-2017, the average percentage of negative book equity (current loss) firms is 15(46) percent while Jan and Ou (2012) report averages of 11(38) percent for their sample period covering 1976-2005.

Table 1, Panel D reports industry composition. For the full sample, 23 percent of firms are from the business equipment industry. The next most common are Other (15 percent) and Healthcare (17 percent). With respect to negative book equity, the most common industries are

⁷ Compustat reports deferred tax assets and deferred tax liabilities separately for most firms. The remainder of the firms report a net deferred taxes (liability) figure. When both are reported, deferred tax assets (txndba) minus deferred tax liabilities (txndbl) equals net deferred taxes (txndb) for all but 76 firm-years. In those cases, an examination of annual reports indicates the difference is generally related to other accumulated comprehensive income, discontinued operations, or alternative income tax credits. Therefore, the calculation of deferred tax assets minus deferred tax liabilities is assumed to be the most accurate. When those figures are not reported, net deferred taxes (liability) is used.

telecommunication (21 percent), healthcare (17 percent), and other (17 percent). Fifty-five percent of my sample are from R&D intensive industries, slightly higher than the 45 percent in Jan and Ou (2012). Jan and Ou (2012) reported business services (73), chemicals and allied products (28), industrial machinery and equipment (35), electronic equipment (36), and communications (48) as the top five industries with negative book equity for 1976-2005. For my 2004-2017 sample period, non-classifiable (99) and oil and gas extraction (13) fall within the top five industries.

Empirical Model

The focus of my study is to test the value relevance of net deferred taxes in the context of negative book equity firms. Using linear regression, I investigate whether investors value net deferred taxes (H1) positively in my sample of negative book equity firms using the following equation.

$$PRC = \alpha + \beta_1 nDT + \beta_2 Earn + \beta_3 BVE + \beta_4 TA + \beta_5 Rev + \beta_6 RnD3 + \beta_7 Cash(OCF) + \varepsilon \quad (1)$$

Price (*PRC*) is the end of the day closing common stock price per share at the end of the first quarter of the following year (approximately three months after fiscal year end). Earnings (*Earn*) are measured using net income. Book value (*BVE*) is the book value of common equity at end-of-year. Total Assets (*TA*) and Total Revenue (*Rev*) are the end-of-year totals. Following Jan and Ou (2012), three year cumulative R&D expenses proxy for intangible capital generated over time (*RnD3*). Cash holdings (*Cash*) is the end-of-year balance. Operating cash flow (*OCF*) is the cash flow from operations. Net deferred taxes (*nDT*) is deferred tax assets, net of valuation allowance, less deferred tax liabilities. Variables are deflated by common shares outstanding, following results of a study examining five potential scale-related effects that found share-deflated variables perform best in general (Barth and Clinch 2009). I include industry and year fixed effects in all regressions and cluster standard errors by firm. If investors in negative book equity firms

value net deferred taxes positively, I expect a significant, positive coefficient on β_{1nDT} ($\beta_1 > 0$). Though my hypothesis is directional based on my expectations, I use two-tailed t-tests of significance as the possibility exists for both positive and negative results.

As discussed earlier, firms with both negative book equity and losses (87 percent of my sample) pose challenges for value relevance models. Previous studies show that earnings and book values individually and in combination are poor value indicators with respect to negative book equity firms (Leibowitz 1999; Brown et al. 2008; Jan and Ou 2012; Li 2013; Ang 2015; Li et al. 2015). Jan and Ou (2012) find sales (revenues) and total assets are better value indicators for negative book equity firms than earnings and book values, but explanatory power is limited. In recent studies focused on loss and negative book equity firms, R&D expenses and recognized intangibles have incremental explanatory power in value relevance models (e.g., Darrough & Ye 2007; Jan and Ou 2012; Barth et al. 2019). In line with these prior studies, I include earnings, book value, revenues, total assets, and 3-years of R&D expenses as control variables. In addition, investors in negative equity firms should be particularly interested in the ability of negative book equity firms to meet their obligations and avoid insolvency. Higher cash holdings indicate a greater likelihood of meeting obligations in the near term. Cash flows may serve as substitutes for earnings and may be more persistent (Sloan 1996). In previous studies not focused on negative book equity firms, cash holdings and cash flows are documented as value-relevant (e.g. Barth et al. 2019). Therefore, I also include either cash holdings or operating cash flows as additional control variables in some specifications.

Prior research (e.g., Collins et al. 1999; Jan and Ou 2012) suggests that the coefficients on earnings and book value will be negative when included alone in equation (1). Based on evidence in Jan and Ou (2012), I expect positive coefficients on total assets, revenues, and cumulative R&D.

As cash holdings or cash flows have been found to be more important for firms with financial constraints or uncertain environments (Givoly and Hayn 2000; Joos and Plesko 2005; Faulkender and Wang 2006; Hribar and Yehuda 2015; Chakraborty et al. 2017), I expect positive coefficients on these variables.

To test whether investors place greater weight on net deferred taxes (*nDT*) for negative book equity relative to positive book equity firms (H2), I estimate a linear regression model for my full sample after including in the model an indicator variable for negative book equity firms (*NegEq*) that I interact with all independent variables.

$$\begin{aligned}
 PRC = & \alpha_0 + \alpha_1 NegEq + \beta_1 nDT + \beta_2 Earn + \beta_3 BVE + \beta_4 TA + \beta_5 Rev + \beta_6 RnD3 \\
 & + \beta_7 Cash(OCF) + NegEq \times (\beta_8 nDT + \beta_9 Earn + \beta_{10} BVE + \beta_{11} TA \\
 & + \beta_{12} Rev + \beta_{13} RnD3 + \beta_{14} Cash(OCF) + \varepsilon
 \end{aligned} \tag{2}$$

If investors in negative book equity firms value net deferred taxes more positively than investors in positive book equity firms, I expect a positive coefficient on the $\beta_8 NegEq \times nDT$ interaction term ($\beta_8 > 0$).

Results

Univariate Results

Table 2 reports univariate statistics over the sample period 2004-2017 for the full sample and for the negative and positive book equity subsamples. For the full sample, mean net deferred taxes per share is negative, indicating that, on average, deferred tax liabilities exceed deferred tax assets. Earnings per share are positive, while the market to book value per share ratio is 2.64. For negative book equity firms, the mean (median) value for earnings is -0.66 (-0.06) and for book value is -1.81 (-0.10). Mean operating cash flow is positive (0.12) though the median is negative (-0.01).

As expected, mean and median values for most variables are greater for positive book equity firms than negative book equity firms (significant at $p < 0.01$). Positive book equity firms have significantly greater book value, market value, earnings, operating cash flow, cash holdings, revenue, and three-year cumulative R&D expenses per share than negative book equity firms. The one exception is net deferred taxes, where the mean value for positive book equity firms (-0.24) is significantly lower than for negative book equity firms (-0.02). As negative book equity firms have accumulated years of net operating loss carryforwards in deferred tax assets, this result is not surprising.

Table 3 reports Pearson and Spearman correlations for all variables. For the full sample (Panel A), the sign of the relation between net deferred taxes and market value is significantly ($p < 0.01$) negative. As expected, earnings and book value are positively correlated with market value.

For negative book equity firms (Panel B), the correlation between net deferred taxes and market value is significantly positive. Correlation coefficients between market value and both book value and earnings are negative or insignificant. This counter-intuitive result is consistent with evidence in prior studies and is suggestive of a correlated omitted variable problem (Collins et al. 1999; Jan and Ou 2012). Cumulative R&D and cash holdings are positively correlated with market value but negatively correlated with earnings and book value; the positive correlation with market value result is consistent with Jan and Ou (2012). Correlations between cumulative R&D and net deferred taxes are positive, suggesting a possible overlap in the value relevant information they possess. Operating cash flow is negatively correlated with market value.

For positive book equity firm-years (Panel C), the vast majority of value indicators are positively correlated with market value. One notable exception is net deferred taxes, which is

negatively correlated with market value. Interestingly, net deferred taxes are also negatively correlated with earnings, book value, and total assets. However, caution should be exercised in drawing any conclusions regarding these univariate findings since they do not partial out the effects of other shared correlates.

Multivariate Results

Table 4 presents the results of the linear regression of market value on net deferred taxes, with controls, for the negative book equity sub-sample. All variables are scaled by year-end common shares outstanding. The dependent variable, *PRC*, is the price per share of stock at the end of the first quarter following the fiscal year end. I report standard errors in parentheses beneath estimated coefficients. Industry and year fixed effects are included and standard errors are clustered at firm level. A positive (negative) coefficient indicates that higher values for the independent variable contribute to higher (lower) firm value.

Column (1) reports the baseline regression of market value on the control variables used in prior research on negative book equity firms: earnings, book value of equity, total assets, revenue, and three-year cumulative R&D. I find a positive coefficient for earnings ($p > 0.01$), likely the result of including both positive and negative earnings firms in the sample.⁸ Book value of equity is negative, as expected. In columns (2), (3), and (4), the coefficient on *nDT* is significantly positive ($p < 0.01$), suggesting that net deferred taxes represent an important indicator of value to investors in negative book equity firms, supporting H1.

With respect to the other control variables in the model, cumulative R&D (*RnD3*) is positively associated with market value in all models, consistent with Jan and Ou (2012). Coefficients for *Earn* and *TA* are significantly positive. Surprisingly, the coefficient for book value

⁸ Prior studies report a negative earnings coefficient for loss firms (e.g. Collins et al. 1999).

(*BVE*) remains negative for all models, though it is no longer significant when *Cash* is included in the model as control variable (column 3). In prior research that eliminated negative book equity firms, Faulkender and Wang (2006) find that the value of cash holdings accrues to debtholders rather than equityholders in highly leveraged firms. As negative book equity firms tend to be highly leveraged, this may explain why cash holdings (*Cash*) are not valued significantly positively by investors in negative book equity firms (column 3). The coefficient on operating cash flows (*OCF*) is significantly positive. To alleviate concerns regarding potential multicollinearity I examine the variable inflation factors (VIFs) in equation (1) and find the highest VIF is 5.24, suggesting that multicollinearity is not high.

I also examine the importance of earnings losses to my negative book equity results. Using a sub-sample of my negative book equity firm-years where the firm did not report a current loss, I re-estimate equation (1) and report the results in Table 4 (columns 5-8). Sample size is limited to 966 firm-year observations. While the coefficient for net deferred taxes is positive and similar in magnitude to earlier results, it is insignificant for these firms. Lower power for the smaller sample size could be a contributing factor. The coefficient on *OCF* is significantly positive in this sub-sample, as well as the full negative book equity sample, suggesting cash flows are especially value-relevant for firms with negative book equity whether or not reporting a loss. These results suggest that net deferred taxes are an important indicator of value when firms exhibit both negative book equity and earnings losses rather than just negative book equity. As discussed earlier, prior studies that limit their samples to positive book equity firms report a negative coefficient on earnings losses. These studies suggest that book equity is a correlated omitted variable. Adding book value to the valuation equation generally provides the needed information to evaluate current value. Earnings and book value cannot be assumed to

reflect potential future performance or current value for firms showing both a current loss and negative book equity. In this paper, I have shown that another accounting measure, net deferred taxes, may provide a value relevant signal for investors.

Table 5 presents the results from testing the relative importance of nDT (H2) for negative relative to positive book equity firms. All columns include industry and year fixed effects. Standard errors, clustered at firm level, are reported in parentheses below the estimated coefficients. I find a positive incremental coefficient on $nDT \times NegEq$ in columns (1) and (2). These results provide support for H2, indicating that net deferred taxes are marginally more value relevant for negative than positive book equity firms.

In summary, net deferred taxes are positive value indicators for negative book equity firms and useful in improving value relevance models for these types of firms. These results identify a new driver of value for negative book equity firms. In addition, net deferred taxes represent a more important indicator of value for negative book equity firms than for positive book equity firms.

Cross-sectional Tests

In contrast to positive book equity, negative book equity is often viewed as an indication that a firm is experiencing some level of financial distress. However, financial distress may be more or less temporary. Forward-looking indicators, such as net deferred taxes, may serve as signals about the severity and potential duration of the distress. As a result, I assess whether investors in negative book equity firms place more weight on net deferred taxes when other indicators suggest substantial distress. Further, I examine whether investors value net deferred taxes more for negative book equity firms in distress than positive book equity firms with a similar level of distress. This latter analysis should provide evidence about whether the effects of distress and the need for forward-looking signals differs between distressed negative book equity

firms and similarly distressed positive book equity firms. To examine these issues, I re-estimate equations (1) and (2) after allowing the coefficients to vary based on a measure of distress or perceived risk of delisting.

As a measure of distress, I calculate Z-Scores (Altman 1968) for all firm-years in my sample that have sufficient data. I divide the firm-years from this full sample into terciles based on the resulting Z-Score. Lower Z-Score values indicate greater financial distress. The lowest tercile consists of 6,366 firm-years with negative book equity and 9,213 firm-years with positive book equity. Descriptive statistics for the variables used to estimate equation (2) are reported in Table 6, Panel A. Firm-years with negative book equity have significantly lower mean and median Z-Scores than firms with positive book equity, suggesting negative book equity firms in the lowest tercile of Z-Scores are significantly different from positive book equity firms in the lowest tercile. I re-estimate equation (2) within this lowest tercile sample to assess the relative value of net deferred taxes for these firm-years within the lowest tercile of Z-Scores. After controlling for the level of distress, I find that investors assess net deferred taxes to be a more important indicator of value for negative book equity than positive book equity firms even given they are in the same tercile of relative distress (Table 7). Thus the incremental value relevance of net deferred taxes for negative book equity firm-years is not solely due to financial distress.

There are few (184) negative book equity firms in the highest tercile of Z-Scores so direct comparison with the lowest tercile is not ideal. To compare negative book equity firms with different levels of distress, I divide the 6,912 negative book equity firm-years sub-sample into terciles by Z-Scores. I find significant differences between the lower (highest distress) and upper (lowest distress) terciles of negative book equity firm-years, possibly due to high variability within negative book equity firms (Table 6, Panel B). After re-estimating equation (1), I find

significantly positive results for net deferred taxes (nDT) in both high and low distress terciles (Table 7), suggesting investors value net deferred taxes for negative book equity firms across varying levels of financial distress.⁹

Supplemental Tests

Predictive Value

Underlying the value relevance of net deferred taxes is the expectation that they reflect future earnings. In supplemental tests, I examine whether net deferred taxes are associated with future earnings three and five years ahead.

$$\begin{aligned} Earn(+3,+5) = & \alpha + \beta_1 nDT_t + \beta_2 Cash_t (OCF_t) + \beta_3 Earn_t + \beta_4 BVE_t + \beta_5 TA_t \\ & + \beta_6 Rev_t + \beta_7 RnD3_t + \varepsilon \end{aligned} \quad (3)$$

Results from regressing future earnings on current nDT and the control variables using equation (3) for my sample of negative book equity firms are reported in Table 8, Panel A. Results indicate that while nDT is not predictive of three-year ahead earnings, nDT is positively associated with five-year ahead earnings. This is not surprising in that net deferred taxes may reflect tax benefits that do not materialize for up to twenty years ahead. This supports the value relevance results for nDT in Table 4. In Panel B, results for the full sample indicate a stronger association between net deferred taxes and future earnings for the negative equity firms for the five-year horizon, further indicating the greater value relevance of net deferred taxes for negative relative to positive book equity firms. To mitigate potential issues associated with survivorship bias for my base analysis, I re-estimate equation (1) after limiting the sample to only those negative book

⁹ In untabulated results, I find the value relevance of net deferred taxes is not dependent on levels of leverage or amount of time the firm has had negative book equity.

equity firm-years with three (five)-year ahead earnings information (Table 9), i.e. those firm-years included in Table 8 regressions, and obtain similar results to those in Table 4.

Components of Net Deferred Taxes

As net deferred tax balances may result from varying combinations of deferred tax assets and deferred tax liabilities, I also partition *nDT* into its two major components, gross deferred tax assets less the valuation allowance (*DTA*) and deferred tax liabilities (*DTL*) to allow the value relevance of each to differ. Since deferred tax liabilities are not subject to a valuation allowance and so are reported at full value, deferred tax assets may be subject to a greater level of discretion that either enhances its value relevance by communicating more private, value-relevant information or diminishes it by incorporating the potential for earnings management.

For my negative book equity sample, results reported in Table 10 (columns 1 and 2) from re-estimating equation (1) suggest that both *DTA* and *DTL* reflect value-relevant information so my primary results are not driven solely by deferred tax liabilities. The negative coefficient on *DTL* (in the regression as a positive value) suggests that as deferred tax liabilities decrease, market value increases. Further, the lower weighting suggests a diminished value relevance for *DTA* relative to *DTL*, perhaps the result of the discretion incorporated in the valuation allowance account and/or the longer time frame over which *DTAs* reverse relative to *DTLs*. These results provide further support for net deferred taxes providing value-relevant information to investors in negative book equity firms.

I also examine the predictive ability of *DTA* apart from *DTL* for future earnings. In results reported in Table 10 (Columns 3 through 6), I find that *DTA* and *DTL* are significantly related to five-year ahead earnings, but not three-year ahead. *DTL* may also be more value relevant within the five-year time frame because they are more certain as far as expected reversal and will

generally reverse faster than some *DTAs*. *DTAs* are often the result of net operating loss carryforwards, which may take up to twenty years to generate the tax benefits. This may be especially true for negative book equity firms that have experienced years of losses and generated more net operating loss carryforwards.

Conclusion

Empirical value relevance models based solely on earnings and book value are not easily interpretable for negative book equity firms, leading many researchers to drop these firms from their samples. However, negative book equity firms have become more common in equity markets since 2001. These firms continue to have positive market value while reporting negative book value and, often, negative earnings. When valuing positive book equity firms, earnings and book value may be more useful in representing future earnings than these variables are for negative book equity firms. Investors in negative book equity firms require different variables to assist with valuation. I assess whether a forward-looking variable from the balance sheet, net deferred taxes, assists investors with valuing negative book equity. Using value relevance models modified from earnings/book value theoretical models, I find investors in negative book equity firms positively value the information in net deferred taxes and value that information more positively than do investors in positive book equity firms.

In this study, I identify a value relevance model that can be used specifically for negative book equity firms, allowing researchers to gain a better understanding of this segment of the market. I also show that should future related studies incorporate both negative and positive book equity firms in their sample, they should model the nonlinearity induced by differences in the value-relevant information contained in measures such as net deferred taxes.

While the impact of changes to net deferred taxes as a result of TCJA 2017 are expected to be temporary while firms adjust to the new rules, the impact of COVID-19 is expected to be more extensive. The CARES Act of 2020 extended carryback and carryforward periods for tax losses. In addition, there is a great deal of uncertainty related to changes in these rules and expectations for future profitability under pandemic and recovery conditions. The number of financially distressed companies and potential bankruptcies has increased during 2020, with the potential for many more to begin reporting negative book equity that have not done so in the past. Numerous opportunities exist for future research on the impact of major economic and tax changes on negative book equity firms and the value-relevance of net deferred taxes.

APPENDIX A

NET DEFERRED TAXES EXAMPLE

In order to demonstrate the need to consider deferred tax liabilities as well as deferred tax assets when assessing management's signal of future performance through net deferred taxes, I provide an example below. I use a situation for three firms with the same gross deferred tax assets and deferred liabilities, but different expectations about future profitability.

First, all three firms have \$200 in gross deferred tax assets that will expire in five years. Managers of each firm must use their discretion and expectations about future performance to accrue a valuation allowance against the deferred tax assets, i.e. how much of that \$200 they expect it is "more likely than not" they will *not* be able to use before it expires. These firms each have \$80 in deferred tax liabilities. Deferred tax liabilities are the result of temporary differences that will reverse within the next five years, creating taxable income.

	<u>Firm A</u>	<u>Firm B</u>	<u>Firm C</u>
Gross Deferred Tax Assets	\$200	\$200	\$200
Less: Valuation Allowance	(200)	(120)	(60)
Net Deferred Tax Assets	\$0	\$80	\$140

The signal implied by looking at only deferred tax assets is that managers of Firm A do not expect to have sufficient profitability over the next five years to use any of their deferred tax benefits. Managers of Firm B expect they will have sufficient profitability over the next five years to use \$80 of their deferred tax benefits. And Firm C expects to use \$140. However, these firms also have deferred tax liabilities that need to be considered and that were a factor when calculating the valuation allowance.

	<u>Firm A</u>	<u>Firm B</u>	<u>Firm C</u>
Gross Deferred Tax Assets	\$200	\$200	\$200
Less: Valuation Allowance	(200)	(120)	(60)
Less: Deferred Tax Liabilities	(80)	(80)	(80)
Net Deferred Taxes	\$(80)	\$0	\$60

The signal implied when considering the net deferred taxes balance is that Firm A expects continued losses over the next five years. They not only will *not* be able to use their deferred tax benefits, but additional losses will offset the taxable income resulting from the reversal of the deferred tax liabilities. Firm B, in contrast, believes they will have sufficient profitability in the next five years to be able to offset deferred tax liabilities, i.e. they do not expect continuing losses for the full five years. Firm C not only expects to have sufficient profitability to offset the taxable income generated from reversal of the deferred tax liabilities, but will also have profitability allowing them to take advantage of an additional \$60 of their available tax benefits in the next five years. Through its relation with deferred tax assets, deferred tax liabilities provide additional information relevant to management's signal of future performance expectations.

Appendix B: Variable Definitions

Variable	Definition
<u>Dependent Variable</u>	
<i>PRC</i>	Share price of common stock at end of first quarter following fiscal year end
<u>Variables of Interest</u>	
<i>Earn</i>	Net Income divided by common shares (Compustat ni/csho)
<i>BVE</i>	Book value of common equity divided by common shares (Compustat ceq/csho)
<i>TA</i>	Total assets divided by common shares (Compustat at/csho)
<i>Rev</i>	Total revenue divided by common shares (Compustat revt/csho)
<i>RnD3</i>	Three –year accumulated research and development expenses divided by common shares (Compustat $(xrd_t + xrd_{t-1} + xrd_{t-2})/csho$)
<i>nDT</i>	Net Deferred Taxes, deferred tax assets less valuation allowance less deferred tax liabilities divided by common shares (Compustat txndb/csho or Compustat $(txndba-txndbl)/csho$)
<i>Cash</i>	Cash and cash equivalents divided by common shares (Compustat che/csho)
<i>OCF</i>	Cash flow from operations divided by common shares (Compustat oancf/csho)
<i>NegEq</i>	Indicator variable, set at one if book value of common equity is negative and zero otherwise
<i>ZScore</i>	Altman's (1968) Z-Score, calculated as $3.3*((pi + xint)/at) + 1.2 * (wcap/at) + (revt/at) + 1.4*(re/at) + 0.6 *((csho*prcc_f)/lt)$ where variables from Compustat are pi=pretax income, xint=interest and other related expenses, wcap=working capital, revt=total revenue, re=retained earnings, prcc_f=price per share at end of fiscal year and lt=long-term liabilities.
<i>DTA</i>	Deferred Tax Assets (net of valuation allowance) divided by common shares (Compustat txndba/csho)
<i>DTL</i>	Deferred Tax Liabilities divided by common shares (Compustat txndbl/csho)

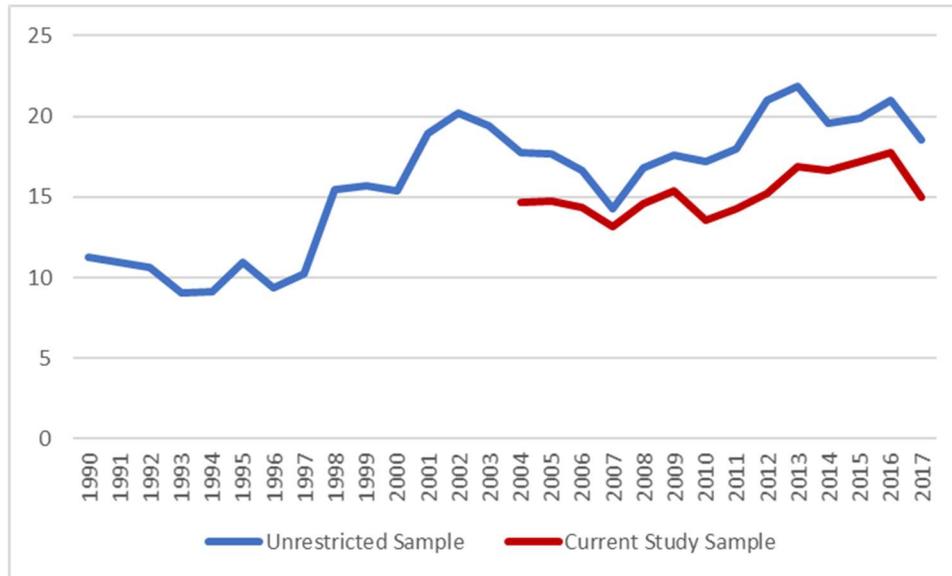
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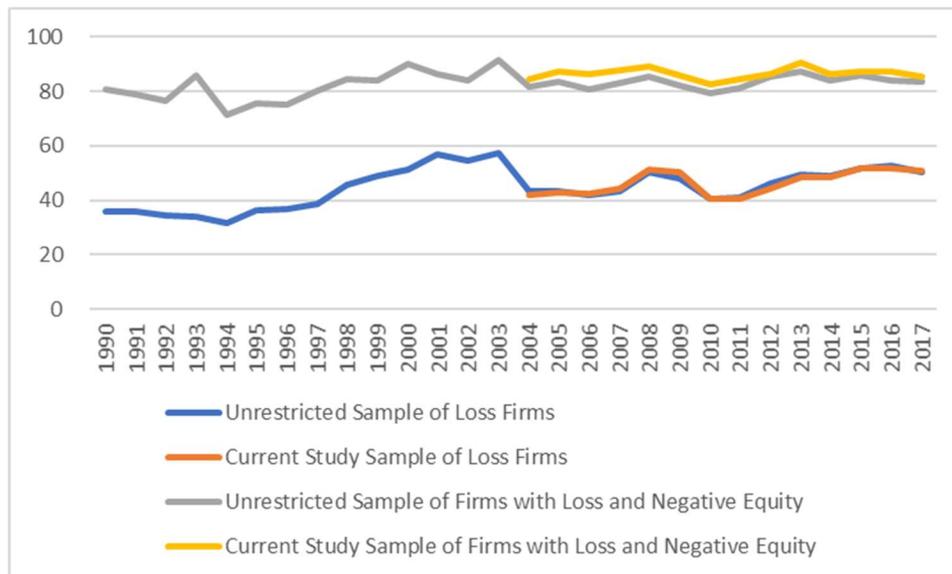
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Panel A. This figure presents the percentage of negative book equity firms by year in an unrestricted sample of all U.S. incorporated, non-regulated industry firms downloaded from Compustat for 1990-2017 and for the current study sample, 2004-2017, restricted to U.S. incorporated, non-regulated firms with non-missing variables.



Panel B. This figure presents the percentage of firms with negative earnings and percentage of negative book equity firms that also had negative current earnings by year in an unrestricted sample of all U.S. incorporated, non-regulated industry firms downloaded from Compustat for 1990-2017 and for the current study sample, 2004-2017, restricted to U.S. incorporated, non-regulated firms with non-missing variables.

Figure 1. Trend in Percentage of Firms with Negative Book Equity, Losses, and Losses with Negative Book Equity.

TABLE 1. Sample Selection and Summary

Panel A. This table summarizes my sample selection process. My final sample is 47,857 firm-year observations for 2004-2017.

U.S. Compustat firm-years 2004-2017	113,776
Less: financial firms, utilities, mutual funds, holding companies, ltd. ptrshps	(48,775)
missing required variables	(17,144)
Total firm-years	<u>47,857</u>
Positive book equity firm-years	40,616
Negative book equity firm-years	7,241
Total unique firms in sample	7,254
Total unique firms with negative book equity in any year in the sample period	2,353

Panel B Firm Survival Rates.

This table identifies the number of firms that survived and delisted, identified as either having only positive book equity firm-years and those with at least one negative book equity firm-year between 2004-2017. Those with at least one year of negative book equity are further subdivided by number of firm-years with negative book equity.

	All Firms		Survived		Delisted	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Firms with only positive equity	4,901	100	2,436	50	2,465	50
Firms with some negative equity						
1 Year			388	50	387	50
2-4 Years			584	54	501	46
5-7 Years			214	65	116	35
8-10 Years			84	75	28	25
Over 10 Years			47	92	4	8
Total with some negative equity	2,353	100	1,317	56	1,036	44

Table 1 – continued

The following panels summarize the distribution of firm-year observations in the full sample (column 1), the number of negative book equity firm-years and their percentage of the full sample (column 2), the number of firm-years reporting negative earnings (loss) and their percentage of the full sample (column 3), and the number of firm-years reporting both negative book equity and negative earnings (loss) and their percentage of negative book equity firm-years (column 4).

Panel C. Sample by Firm-Year.

	Full Sample		Negative Book Equity		Current Loss		Negative Book Equity and Current Loss	
	(1)		(2)		(3)		(4)	
	<u>N</u>		<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
2004	3,792		557	15	1,589	42	472	85
2005	4,200		619	15	1,791	43	540	87
2006	4,035		580	14	1,705	42	501	86
2007	3,874		510	13	1,720	44	448	88
2008	3,543		518	15	1,812	51	461	89
2009	3,496		537	15	1,753	50	461	86
2010	3,320		449	14	1,340	40	372	83
2011	3,222		459	14	1,313	41	388	85
2012	3,142		478	15	1,384	44	414	87
2013	3,228		545	17	1,558	48	495	91
2014	3,252		540	17	1,582	49	466	86
2015	3,093		531	17	1,606	52	464	87
2016	2,934		520	18	1,518	52	453	87
2017	<u>2,726</u>		<u>398</u>	<u>15</u>	<u>1,384</u>	<u>51</u>	<u>340</u>	<u>85</u>
Total(Avg.)	47,857		7,241	15	22,055	46	6,275	87

Panel D. Industry composition.

	Full Sample		Negative Book Equity		Current Loss		Negative Book Equity and Current Loss	
	(1)		(2)		(3)		(4)	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Consumer Non-Durables	2,610	6	272	9	772	30	216	79
Consumer Durables	1,415	3	198	12	555	39	178	90
Manufacturing	5,306	12	564	9	1,585	30	471	84
Energy	2,603	5	454	15	1,317	51	414	91
Chemicals	1,492	3	254	14	552	37	212	83
Business Equipment	11,571	23	1,598	12	5,675	49	1,395	87
Telecoms	1,435	4	324	21	670	47	258	80
Shops	4,983	12	404	7	1,336	27	290	72
Healthcare	8,986	17	1,733	17	6,310	70	1,619	93
Other	7,456	15	1,440	17	3,283	44	1,222	85

TABLE 2. Descriptive Statistics. This table contains summary statistics for my sample of 47,857 firm-year observations (full sample), consisting of 7,241 negative book equity firm-years and 40,616 positive book equity firm-years. The sample period is from 2004-2017. *PRC* is the price per share at the end of the quarter following the fiscal year end. The remaining variables are per share at the end of the fiscal year: *Earn* is net income, *BVE* is the book value of common equity, *TA* is total assets, *Rev* is total revenue, *RnD3* is three cumulative years of research and development expenses, *nDT* is net deferred taxes (deferred tax assets less deferred tax liabilities), *Cash* is cash and cash equivalents, and *OCF* is cash from operating activities. Variables were truncated separately for the negative book equity and positive book equity subsamples, at 1% and 99%, then combined to create the full sample. Bolded figures are significant T-test of means or non-parametric equality of medians between the negative and positive book equity subsamples at the 0.01 level, or better (2-tailed).

	Full Sample (N=47,857)					Negative Book Equity (N=7,241)					Positive Book Equity (N=40,616)				
	<u>Mean</u>	<u>SD</u>	<u>P25</u>	<u>Median</u>	<u>P75</u>	<u>Mean</u>	<u>SD</u>	<u>P25</u>	<u>Median</u>	<u>P75</u>	<u>Mean</u>	<u>SD</u>	<u>P25</u>	<u>Median</u>	<u>P75</u>
<i>PRC</i>	17.89	23.15	1.82	8.62	25.53	2.95	7.61	0.06	0.30	1.75	20.55	23.97	3.47	11.90	29.12
<i>Earn</i>	0.42	2.70	-0.27	0.06	1.12	-0.66	3.70	-0.38	-0.06	0.00	0.62	2.42	-0.25	0.24	1.34
<i>BVE</i>	6.78	9.77	0.44	3.73	10.19	-1.81	6.95	-0.66	-0.10	-0.20	8.31	9.40	1.60	5.23	11.70
<i>TA</i>	16.97	24.40	1.56	8.01	23.00	4.95	16.98	0.00	0.07	1.68	19.10	24.90	3.15	10.47	25.91
<i>Rev</i>	18.68	37.87	0.74	6.67	22.62	5.17	21.45	0.00	0.03	1.41	21.09	39.62	2.08	8.89	25.78
<i>RnD3</i>	0.95	2.09	0.00	0.03	1.16	0.53	2.76	0.00	0.00	0.11	1.03	1.94	0.00	0.10	1.36
<i>nDT</i>	-0.20	1.88	0.07	0.00	0.12	-0.02	0.81	0.00	0.00	0.00	-0.24	2.00	-0.16	0.00	0.21
<i>Cash</i>	2.18	3.44	0.18	0.98	2.82	0.63	2.99	0.00	0.01	0.23	2.46	3.44	0.36	1.29	3.20
<i>OCF</i>	1.38	2.69	-0.04	0.45	2.18	0.12	2.05	-0.08	-0.01	0.00	1.60	2.73	-0.02	0.77	2.51

TABLE 3. Correlation Matrix. This table reports correlations for my sample of firms. Pearson correlations are reported in the upper triangles while Spearman correlations are reported in the bottom triangles. Variables are as defined in Appendix B. Bolded figures are significant at the 0.10 level or better.

Panel A. Full Sample	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) PRC		0.45	0.67	0.61	0.41	0.25	-0.18	0.49	0.64
(2) Earn	0.61		0.48	0.28	0.23	-0.05	-0.11	0.16	0.45
(3) BVE	0.81	0.58		0.71	0.49	0.09	-0.28	0.44	0.63
(4) TA	0.83	0.53	0.85		0.67	0.13	-0.39	0.51	0.72
(5) Rev	0.74	0.56	0.76	0.91		0.04	-0.10	0.32	0.49
(6) RnD3	0.14	-0.11	0.05	-0.01	-0.10		0.12	0.38	0.03
(7) nDT	-0.02	0.01	-0.04	-0.09	-0.01	0.20		-0.04	-0.33
(8) Cash	0.70	0.33	0.65	0.67	0.55	0.31	0.11		0.41
(9) OCF	0.70	0.71	0.68	0.74	0.74	-0.12	-0.06	0.45	
Panel B. Negative Book Equity									
(1) PRC		-0.01	-0.29	0.38	0.31	0.17	0.03	0.30	0.29
(2) Earn	-0.33		0.53	-0.43	-0.32	-0.33	0.03	-0.44	0.24
(3) BVE	-0.60	0.43		-0.60	-0.46	-0.50	-0.01	-0.59	-0.03
(4) TA	0.71	-0.43	-0.79		0.82	0.17	-0.18	0.57	0.35
(5) Rev	0.57	-0.26	-0.68	0.86		0.08	-0.04	0.41	0.26
(6) RnD3	0.30	-0.29	-0.24	0.27	0.16		0.02	0.50	-0.29
(7) nDT	0.03	0.11	0.07	-0.08	-0.06	0.05		0.02	-0.05
(8) Cash	0.71	-0.41	-0.71	0.90	0.75	0.36	-0.06		0.04
(9) OCF	-0.07	0.50	0.05	-0.01	0.14	-0.35	0.00	-0.08	
Panel C. Positive Book Equity									
(1) PRC		0.51	0.69	0.60	0.39	0.27	-0.18	0.48	0.65
(2) Earn	0.66		0.46	0.39	0.31	0.04	-0.13	0.27	0.49
(3) BVE	0.81	0.60		0.82	0.54	0.17	-0.31	0.52	0.68
(4) TA	0.79	0.58	0.91		0.65	0.11	-0.40	0.49	0.73
(5) Rev	0.70	0.60	0.79	0.89		0.02	-0.10	0.30	0.49
(6) RnD3	0.09	-0.12	-0.01	-0.09	-0.18		0.15	0.35	0.07
(7) nDT	-0.04	-0.01	-0.07	-0.12	-0.02	0.22		-0.04	-0.35
(8) Cash	0.61	0.32	0.59	0.54	0.42	0.29	0.12		0.43
(9) OCF	0.73	0.72	0.72	0.77	0.75	-0.14	-0.09	0.40	

TABLE 4. Value Relevance of Net Deferred Taxes – Negative Book Equity Only and Non-Loss Firms Subsample. This table reports results from an OLS regression of equation (1) for the negative book equity subsample and the negative book equity firms not reporting a loss subsample of *PRC* (a firm's price per share) on *nDT* (net deferred taxes per share). Control variables include *Earn*, *BVE*, *TA*, *Rev*, and *RnD3* plus *Cash* in columns (3) and (7) and *OCF* in columns (4) and (8). See Appendix B for all variable definitions. All specifications include industry and year fixed effects. *, **, *** indicate statistical significance at the 0.10, 0.05, and 0.01 levels (two-tailed), respectively. Standard errors are clustered by firm and presented in parentheses under coefficient estimates. All variables were truncated at 1% and 99%.

	All Negative Equity Firms				Negative Equity Firms not reporting a current loss			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>nDT</i>		1.00*** (0.30)	0.92*** (0.30)	0.88*** (0.30)		1.18 (0.72)	1.08 (0.69)	0.96 (0.66)
<i>Earn</i>	0.56*** (0.09)	0.56*** (0.09)	0.58*** (0.09)	0.42*** (0.09)	1.58* (0.87)	1.67** (0.84)	1.63** (0.83)	1.15 (0.70)
<i>BVE</i>	-0.13** (0.06)	-0.11* (0.06)	-0.10 (0.06)	-0.10* (0.06)	0.10 (0.13)	0.17 (0.14)	0.27** (0.14)	0.25** (0.11)
<i>TA</i>	0.18*** (0.04)	0.21*** (0.04)	0.19*** (0.04)	0.16*** (0.04)	0.20** (0.08)	0.26*** (0.08)	0.23*** (0.08)	0.11 (0.09)
<i>Rev</i>	-0.01 (0.03)	-0.02 (0.03)	-0.02 (0.03)	-0.01 (0.03)	0.05 (0.06)	0.01 (0.07)	0.03 (0.06)	-0.06 (0.06)
<i>RnD3</i>	0.36*** (0.12)	0.36*** (0.12)	0.28** (0.13)	0.50** (0.27)	0.59 (0.49)	0.54 (0.48)	0.32 (0.54)	0.66 (0.43)
<i>Cash</i>			0.23 (0.19)				0.75 (0.64)	
<i>OCF</i>				0.64** (0.27)				2.89*** (0.70)
<i>Constant</i>	1.44** (0.92)	1.59* (0.88)	1.65* (0.86)	1.53* (0.87)	5.43 (3.62)	5.66 (3.61)	5.63 (3.42)	4.84 (3.30)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,241	7,241	7,241	7,241	966	966	966	966
R-squared	23.3%	24.3%	24.7%	26.1%	29.7%	30.8%	32.2%	39.2%

TABLE 5. Relative Value Relevance of Net Deferred Taxes – Full Sample. This table reports results from an OLS regression of equation (2) for the full sample of *PRC* on *nDT*. Control variables include *Earn*, *BVE*, *TA*, *Rev*, and *RnD3* in all specifications plus *Cash* in column (2) and *OCF* in column (3). See Appendix B for all variable definitions. All variables are interacted with *NegEq*, an indicator variable equal to one if a negative book equity firm and zero otherwise. All specifications include industry and year fixed effects. *, **, *** indicate statistical significance at the 0.10, 0.05, and 0.01 levels (two-tailed), respectively. Standard errors are clustered by firm and presented in parentheses under coefficient estimates. All variables were truncated at 1% and 99%.

	(1)	(2)	(3)
<i>nDT</i>	0.29*	0.13	0.57***
	(0.16)	(0.17)	(0.17)
<i>nDT x Negeq</i>	0.57*	0.65*	0.18
	(0.33)	(0.33)	(0.34)
<i>Negeq</i>	-3.40***	-3.04***	-3.34***
	(0.32)	(0.33)	(0.28)
<i>Constant</i>	7.16***	7.17***	7.24***
	(0.92)	(0.91)	(0.85)
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Observations	47,857	47,857	47,857
R-squared	59.5%	60.1%	63.6%

TABLE 6. Descriptive Statistics- Z-Scores

Panel A. This table contains summary statistics for my sample of 15,579 firm-year observations that ranked in the lowest tercile by Z-Score, consisting of 6,366 negative book equity firm-years and 9,213 positive book equity firm-years. Bolded figures are significant T-test of means or non-parametric equality of medians between the negative and positive book equity subsamples at the 0.05 level, or better (2-tailed).

	Full Sample (N=15,579)					Negative Book Equity (N=6,366)					Positive Book Equity (N=9,213)				
	Mean	SD	P25	Median	P75	Mean	SD	P25	Median	P75	Mean	SD	P25	Median	P75
<i>PRC</i>	4.53	8.87	0.24	1.29	4.55	2.03	5.05	0.05	0.25	1.35	6.27	10.40	0.85	2.50	6.75
<i>Earn</i>	-0.70	2.80	-0.79	-0.18	-0.01	-0.77	3.73	-0.42	-0.08	-0.01	-0.65	1.92	-0.97	-0.31	-0.03
<i>BVE</i>	1.34	7.04	-0.05	0.15	1.57	-1.74	6.89	-0.58	-0.10	-0.02	3.47	6.32	0.31	1.12	3.69
<i>TA</i>	9.00	22.22	0.11	1.20	6.49	4.32	16.69	0.01	0.07	1.17	12.24	24.85	0.78	2.81	12.07
<i>Rev</i>	5.67	17.00	0.02	0.59	4.62	4.06	20.22	0.00	0.03	0.91	6.79	14.26	0.24	1.83	7.02
<i>RnD3</i>	0.75	2.25	0.00	0.02	0.70	0.57	2.93	0.00	0.00	0.13	0.87	1.60	0.00	0.14	1.15
<i>nDT</i>	-0.25	1.80	0.00	0.00	0.00	-0.04	0.73	0.00	0.00	0.00	-0.39	2.24	-0.02	0.00	0.00
<i>Cash</i>	0.98	2.78	0.01	0.19	0.95	0.58	3.08	0.00	0.01	0.17	1.25	2.52	0.12	0.49	1.41
<i>OCF</i>	0.30	2.20	-0.22	-0.02	0.15	0.01	2.00	-0.10	-0.01	0.00	0.49	2.31	-0.33	-0.02	0.52
<i>Lev</i>	19.11	246.22	0.49	0.78	1.55	45.98	383.61	1.22	2.04	7.03	0.55	0.23	0.37	0.56	0.73
<i>ZScore</i>	-349.9	5,866.0	-19.47	-3.19	0.31	-850.1	9,153.8	-112.3	-23.94	-3.98	-4.28	12.01	-4.68	-0.50	-0.77

Panel B. This table contains summary statistics for my sample of negative book equity 4,608 firm-year observations that ranked in the lowest and upper tercile of Z-Scores within the negative book equity sub-sample only. Bolded figures are significant T-test of means or non-parametric equality of medians between the negative and positive book equity subsamples at the 0.10 level, or better (2-tailed).

	Negative Book Equity Sample (N=4,608)					Lower Z-Score Tercile (N=2,304)					Upper Z-Score Tercile (N=2,304)				
	Mean	SD	P25	Median	P75	Mean	SD	P25	Median	P75	Mean	SD	P25	Median	P75
<i>PRC</i>	3.92	9.04	0.05	0.33	2.67	0.43	1.45	0.02	0.08	0.28	7.40	11.71	0.42	2.18	9.24
<i>Earn</i>	-0.68	4.16	-0.37	-0.05	0.00	-0.22	0.16	-0.11	-0.03	-0.01	-1.14	5.63	-1.09	-0.17	0.03
<i>BVE</i>	-2.20	7.32	-1.09	-0.13	-0.02	-0.28	1.72	-0.13	-0.04	-0.01	-4.12	9.84	-3.36	-0.84	-0.13
<i>TA</i>	7.05	20.26	0.00	0.07	5.18	0.05	0.42	0.00	0.00	0.01	14.05	26.89	0.86	5.50	16.87
<i>Rev</i>	7.66	26.43	0.00	0.04	5.13	0.05	0.54	0.00	0.00	0.01	15.27	35.80	0.69	5.09	18.48
<i>RnD3</i>	0.49	2.27	0.00	0.00	0.07	0.15	0.92	0.00	0.00	0.03	0.82	3.05	0.00	0.00	0.37
<i>nDT</i>	-0.04	0.98	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	-0.07	1.38	0.00	0.00	0.00
<i>Cash</i>	0.82	3.59	0.00	0.01	0.40	0.02	0.24	0.00	0.00	0.00	1.62	4.95	0.04	0.39	1.54
<i>OCF</i>	0.33	2.33	-0.05	0.00	0.05	-0.07	0.29	-0.04	-0.01	0.00	0.73	3.23	-0.10	0.05	1.16
<i>Lev</i>	62.48	449.80	1.14	1.97	12.54	123.50	630.30	4.57	12.40	37.59	1.46	2.32	1.03	1.15	1.42
<i>ZScore</i>	-1,160.1	10,743.4	-198.0	-28.99	-0.12	-2,326.0	15,105.3	-637.2	-198.0	-96.44	5.86	56.28	-2.06	-0.12	1.32

TABLE 7. Relative Value Relevance of Net Deferred Taxes – Z-Scores.

This table reports results from an OLS regression of equation (2) for the sample of firm-years that fall in the lowest tercile of Z-Scores (columns 1 and 2) and equation (1) for the highest and lowest tercile of negative book equity firms (columns 3 through 6). I regress *PRC* on *nDT*. Control variables include *Earn*, *BVE*, *TA*, *Rev*, and *RnD3* plus *Cash* in columns (1), (3), and (5) and *OCF* in column (2), (4), and (6). See Appendix B for all variable definitions. All variables in Columns (1) and (2) are interacted with *NegEq*, an indicator variable equal to one if a negative book equity firm and zero otherwise. All specifications include industry and year fixed effects. *, **, *** indicate statistical significance at the 0.10, 0.05, and 0.01 levels (two-tailed), respectively. Standard errors are clustered by firm and presented in parentheses under coefficient estimates. All variables were truncated at 1% and 99%.

	Full Sample Lowest Tercile		Negative Equity Only Lowest Tercile		Negative Equity Only Highest Tercile	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>nDT</i>	-0.12 (0.21)	-0.04 (0.22)	10.64 (7.35)	16.57** (8.05)	0.92*** (0.32)	0.86*** (0.32)
<i>nDT x NegEq</i>	1.08*** (0.30)	0.96*** (0.31)				
<i>NegEq</i>	0.42** (0.17)	0.56*** (0.16)				
<i>Constant</i>	0.72 (0.44)	1.03** (0.43)	0.23* (0.13)	0.19 (0.13)	3.15 (2.00)	2.95 (2.00)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	15,579	15,579	2,304	2,304	2,304	2,304
R-squared	57.5%	58.5%	26.6%	27.0%	20.3%	21.8%

TABLE 8. Predictive Value of Net Deferred Taxes.

Panel A. Negative Book Equity Sample. This table reports results from an OLS regression of equation (3) for the negative book equity subsample of three- and five-year ahead *Earn* (a firm's earnings per share) on *nDT* (net deferred taxes per share). See Appendix B for variable definitions of controls included (*Earn*, *BVE*, *TA*, *Rev*, *RnD3*, plus *Cash* in columns 3 and 4 and *OCF* in columns 5 and 6). All specifications include industry and year fixed effects. *, **, *** indicate statistical significance at the 0.10, 0.05, and 0.01 levels (two-tailed), respectively. Standard errors are clustered by firm and presented in parentheses under coefficient estimates. All variables were truncated at 1% and 99%.

	Years ahead					
	+3 (1)	+5 (2)	+3 (3)	+5 (4)	+3 (5)	+5 (6)
<i>nDT</i>	0.27 (0.18)	0.21** (0.10)	0.26 (0.19)	0.35** (0.14)	0.29* (0.17)	0.24** (0.12)
<i>Constant</i>	-5.38** (2.25)	-3.12** (1.29)	-5.32** (2.20)	-2.98** (1.26)	-5.41** (2.27)	-3.14** (1.29)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,044	2,740	4,044	2,740	4,044	2,740
R-squared	3.3%	3.7%	3.4%	4.4%	4.6%	3.8%

Panel B. Full Sample. This table reports results from an OLS regression of equation (3) similar to Panel A except for using the full sample with all variables interacted with *NegEq*, an indicator variable equal to one if a negative book equity firm and zero otherwise. Remaining variables and specifications are the same as in Panel A.

	Years ahead					
	+3 (1)	+5 (2)	+3 (3)	+5 (4)	+3 (5)	+5 (6)
<i>nDT</i>	0.00** 0.00	0.00 0.00	0.00*** 0.00	0.00 0.00	0.00** 0.00	0.00 0.00
<i>nDT x NegEq</i>	0.29 (0.18)	0.21** (0.10)	-0.27 (0.19)	0.38*** (0.14)	0.31* (0.18)	0.23* (0.12)
<i>NegEq</i>	-1.36*** (0.08)	-1.54*** (0.09)	-1.34*** (0.08)	-1.57*** (0.10)	-1.34*** (0.07)	-1.55*** (0.10)
<i>Constant</i>	1.57*** (0.17)	1.58*** (0.16)	1.57*** (0.17)	1.59*** (0.16)	1.56*** (0.17)	1.58*** (0.16)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	32,362	24,961	32,362	24,961	32,362	24,961
R-squared	6.2%	6.0%	6.2%	6.3%	6.5%	6.0%

TABLE 9. Value Relevance of Net Deferred Taxes - Limited Sample of Negative Book Equity Sub-sample.

This table reports results from an OLS regression of equation (1) for the negative book equity subsample with firm-years having three-year ahead and five-year ahead earnings available. I regress *PRC* on *nDT*. I regress *PRC* on *nDT*. Control variables include *Earn*, *BVE*, *TA*, *Rev*, and *RnD3* plus *Cash* in columns (1) and (3) and *OCF* in columns (2) and (4). See Appendix B for all variable definitions All specifications include industry and year fixed effects. *, **, *** indicate statistical significance at the 0.10, 0.05, and 0.01 levels (two-tailed), respectively. Standard errors are clustered by firm and presented in parentheses under coefficient estimates. All variables were truncated at 1% and 99%.

	With Three-Year Ahead Earnings Available		With Five-Year Ahead Earnings Available	
	(1)	(2)	(3)	(4)
<i>nDT</i>	1.04*** (0.32)	0.99*** (0.32)	1.18*** (0.34)	0.31*** (0.11)
<i>Earn</i>	0.61*** (0.11)	0.39*** (0.11)	0.57*** (0.10)	0.03 (0.08)
<i>BVE</i>	-0.05 (0.09)	-0.02 (0.09)	-0.06 (0.09)	0.12*** (0.04)
<i>TA</i>	0.24*** (0.05)	0.12*** (0.04)	0.24*** (0.05)	0.00 (0.03)
<i>Rev</i>	-0.04 (0.04)	0.02 (0.03)	-0.06 (0.04)	1.03*** (0.28)
<i>RnD3</i>	0.75*** (0.25)	1.11*** (0.25)	0.63** 0.28	0.93*** (0.26)
<i>Cash</i>	0.19 (0.36)		0.35 (0.40)	
<i>OCF</i>		1.55*** (0.41)		1.85*** (0.44)
<i>Constant</i>	5.48** (2.54)	4.80** (2.17)	3.87** (1.97)	3.51* (1.84)
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	4,044	4,044	2,740	2,740
R-squared	27.4%	33.2%	29.3%	37.3%

TABLE 10. Value Relevance and Predictive Value of Deferred Tax Assets and Deferred Tax Liabilities -Negative Book Equity Only. This table reports results from an OLS regression of equation (1) for the negative book equity subsample of *PRC* (market value per share) (columns 1 and 2) and equation (3) for three-year and five-year ahead *Earn* replacing *nDT* with *DTA* (deferred tax assets per share) and *DTL* (deferred tax liabilities per share) (columns 3 through 6). *DTLs* are entered as a positive number. All remaining variables and specifications are the same as in Table 4.

	DV <i>PRC</i>		DV <i>Three-Year Ahead Earn</i>		DV <i>Five-Year Ahead Earn</i>	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>DTA</i>	0.71*** (0.27)	0.74*** (0.26)	-0.02 (0.10)	-0.03 (0.10)	0.23* (0.12)	0.27** (0.13)
<i>DTL</i>	-1.03*** (0.30)	-0.98*** (0.28)	-0.12 (0.10)	-0.12 (0.09)	-0.25** (0.11)	-0.31*** (0.12)
<i>Earn</i>	0.57*** (0.09)	0.43*** (0.09)	0.03* (0.02)	0.02 (0.02)	0.06 (0.06)	0.08 (0.07)
<i>BVE</i>	-0.06 (0.06)	-0.06 (0.06)	-0.01 (0.01)	-0.02* (0.01)	0.00 (0.01)	0.00 (0.01)
<i>TA</i>	0.21*** (0.04)	0.18*** (0.04)	-0.05*** (0.01)	-0.05*** (0.01)	-0.02 (0.01)	-0.01* (0.01)
<i>Rev</i>	0.00 (0.02)	0.00 (0.02)	0.03*** (0.01)	0.03*** (0.01)	0.01* (0.00)	0.01* (0.00)
<i>RnD3</i>	0.30** (0.13)	0.51*** (0.17)	0.00 (0.02)	0.01 (0.01)	0.03 (0.05)	0.04 (0.04)
<i>Cash</i>	0.23 (0.20)		0.01 (0.06)		0.05 (0.06)	
<i>OCF</i>		0.58** (0.27)		0.15* (0.08)		-0.05 (0.06)
<i>Constant</i>	1.51* (0.89)	1.39 (0.90)	-5.01** (2.49)	-5.18** (2.49)	-2.91* (1.49)	-2.94** (1.48)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,017	7,017	3,813	3,813	2,560	2,560
R-squared	26.0%	27.1%	5.8%	6.8%	4.5%	4.6%