Do differences in financial reporting attributes impair the predictive ability of financial ratios for bankruptcy?

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William H. Beaver[1], Maria Correia[2] & Maureen F. McNichols [1]

Abstract

This study explores the effect of cross-sectional and time-series differences in financial reporting attributes on the predictive ability of financial ratios for bankruptcy. We identify proxies for discretion over financial reporting, the importance of intangible assets, the comprehensiveness of the accounting model and recognition of losses. Each of our proxies for financial reporting attributes is associated with financial ratios that are less informative in predicting bankruptcy. Furthermore, our time-series tests reveal a decline in the predictive ability of financial ratios for bankruptcy and document that this decline is associated with our measures of financial reporting attributes.

Notes

1. McNichols (2000) and Dechow and Schrand (2004) provide reviews of this literature.

2. The effect of expensing intangibles on profitability depends on the growth of the firm. The effect of unrecognized assets unambiguously increases the leverage ratio.

3. Including a measure of persistent losses might improve our ability to predict bankruptcy. Easton et al. (2009) find that persistent losses have a larger association with bond returns than transitory losses. We re-estimated our models including a lagged loss indicator in addition to the loss indicator. We find that this variable is not statistically significant and that its inclusion does not improve the predictive power of the model.

4. A description of these samples is in Shumway (2001) and Chava and Jarrow (2004). We greatly appreciate the generosity of Tyler Shumway, Sudheer Chava and Robert Jarrow in making their samples available to us.

5. 69,845 observations were used in the regression analysis in Beaver et al. (2005). By including NASDAQ firms, we increase sample size to 135,455 observations.

6. We assume there is no tax benefit associated with interest for loss firms. For firms that are profitable, the tax benefit for a given year is calculated based on the maximum statutory tax rate for that year.

7. Woodruff-Sawyer is a full-service insurance brokerage and consulting firm based in San Francisco.

8. Given that our sample period begins in 1962 and therefore that cash flow statement information is not available for most of the sample, we compute current accruals using a balance sheet approach. In particular, current accruals are equal to the change in current assets minus change in current liabilities and in cash plus the change in short term debt (i.e. Compustat Δdata4-Δdata5-Δdata1+Δdata34).

9. Our results are robust to an alternative specification of the accrual model, which includes a proxy for the change in cash flows, following Kasznik (1999).

10. We also repeated the analysis using data for the entire time series available for the firm. The results were essentially the same.

11. We also estimate the basic accounting model developed by Beaver, McNichols, and Rhie (2005), which does not include the loss indicator and does not allow for different slopes for loss firms. The results are similar to those reported in the paper, even though the sample has expanded considerably. Consistent with prior results, all three accounting ratios are significant and have the predicted sign.

12. Similar results are obtained, in untabulated analysis, for the combined model without separate slopes or indicators but with a slightly lower predictive power of 88.57%.

13. We assess the significance of the difference using a χ^2 test. In all further comparisons, we refer to a subsample as having higher or lower predictive ability if the difference is significant with $p < 0.01$.

14. In untabulated analysis we use the “untainted” coefficients to predict the hazard for the entire sample. This doesn’t change our results.

15. In the basic specification that merely includes the BSM score and the annual bankruptcy rate, both variables have magnitudes that are comparable to Hillegeist et al. (2004). In particular, the coefficient on the BSM score is 0.31 (vs. 0.27) and on the annual rate 0.43 (vs. 0.54)

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Author information

Authors and Affiliations

Graduate School of Business, Stanford University, Stanford, CA, 94305, USA

William H. Beaver & Maureen F. McNichols

London Business School, London, NW1 4SA, UK

Maria Correia

Corresponding author

Correspondence to Maureen F. McNichols.

Appendix

Variable definitions and data sources (Tables 11, 12).

Table 11 Panel A: variable definitions

Table 12 Panel B: data sources for the restatement variable

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