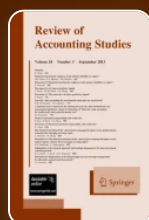


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# Do differences in financial reporting attributes impair the predictive ability of financial ratios for bankruptcy?

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[William H. Beaver](#)<sup>1</sup>, [Maria Correia](#)<sup>2</sup> & [Maureen F. McNichols](#) <sup>1</sup>

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## 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.



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## 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.  $\Delta \text{data4} - \Delta \text{data5} - \Delta \text{data1} + \Delta \text{data34}$ ).

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  $\chi^2$  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)

# References

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Altman, E. (1968). Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *Journal of Finance*, 23, 589-609.

[Article](#) [Google Scholar](#)

Barth, M., Clement, M., Foster, G., & Kasznik, R. (1998). Brand values and capital market valuation. *Review of Accounting Studies*, 3, 41-68.

[Article](#) [Google Scholar](#)

Basu, S. (1997). The conservatism principle and the asymmetric timeliness of earnings. *Journal of Accounting and Economics*, 24, 3-37.

[Article](#) [Google Scholar](#)

Beaver, W. H. (1965). Financial ratios as predictors of failure. Unpublished Ph.D thesis. Graduate School of Business, University of Chicago.

Beaver, W. H. (1966). Financial ratios as predictors of failure. *Journal of Accounting Research*, 4, 71-102.

[Article](#) [Google Scholar](#)

Beaver, W. H. (2002). Perspectives on recent capital market research. *The Accounting Review*, 77, 453-474.

[Article](#) [Google Scholar](#)

Beaver, W. H., & Engel, E. (1996). Discretionary behavior with respect to allowances for loan losses and the behavior of security prices. *Journal of Accounting and Economics*, 22, 177-206.

[Article](#) [Google Scholar](#)

Beaver, W. H., McNichols, M., & Rhie, J. (2005). Have financial statements become less informative? Evidence from the ability of financial ratios to predict bankruptcy. *Review of Accounting Studies*, 10, 93-122.

[Article](#) [Google Scholar](#)

Bharath, S., & Shumway, T. (2008). Forecasting default with the Merton distance to default model. *Review of Financial Studies*, 21, 1339-1369.

[Article](#) [Google Scholar](#)

Bonner, S., Palmrose, Z., & Young, S. (1998). Fraud type and auditor litigation: An analysis of SEC accounting and auditing enforcement releases. *The Accounting Review*, 73, 503-552.

[Google Scholar](#)

Bradshaw, M., & Sloan, R. (2002). GAAP versus the street: An empirical assessment of two alternative definitions of earnings. *Journal of Accounting Research*, 40, 41-66.

[Article](#) [Google Scholar](#)

Brown, S., Lo, K., & Lys, T. (1999). Use of R<sup>2</sup> in accounting research: Measuring changes in value relevance over the last four decades. *Journal of Accounting and Economics*, 28, 83-115.

[Article](#) [Google Scholar](#)

Campbell, J., Hilscher, J., & Szilagyi, J. (2008). In search of distress risk. *Journal of Finance*, 63, 2899-2939.

[Article](#) [Google Scholar](#)

Chava, S., & Jarrow, R. (2004). Bankruptcy prediction with industry effects.

*Review of Finance*, 8, 537-569.

[Article](#) [Google Scholar](#)

Collins, D., Maydew, E., & Weiss, I. (1997). Changes in the value-relevance of earnings and book values over the past forty years. *Journal of Accounting and Economics*, 24, 39-67.

[Article](#) [Google Scholar](#)

Collins, D., Pincus, M., & Xie, H. (1999). Equity valuation and negative earnings: The role of book value of equity. *The Accounting Review*, 74, 29-61.

[Article](#) [Google Scholar](#)

Dechow, P., & Schrand, C. (2004). *Earnings quality*. Charlottesville, VA: The Research Foundation of the CFA Institute.

[Google Scholar](#)

Dechow, P., Sloan, R., & Sweeney, A. (1995). Detecting earnings management. *The Accounting Review*, 70, 193-225.

[Google Scholar](#)

Easton, P., Monahan, S., & Vasvari, F. (2009). Initial evidence on the role of accounting earnings in the bond market. *Journal of Accounting Research*, 47, 721-766.

[Article](#) [Google Scholar](#)

Financial Accounting Standards Board (FASB). (2001). Accounting for the impairment or disposal of long-lived assets. *FASB statement no. 144*. Stamford, CT: FASB.

Francis, J., & Schipper, K. (1999). Have financial statements lost their relevance? *Journal of Accounting Research*, 37, 319-352.

[Article](#) [Google Scholar](#)

Francis, J., Schipper, K., & Vincent, L. (2002). Expanded disclosures and the increased usefulness of earnings announcements. *The Accounting Review*, 77, 515-546.

[Article](#) [Google Scholar](#)

Francis, J., LaFond, R., Olsson, P., & Schipper, K. (2004). Cost of equity and earnings attributes. *The Accounting Review*, 79, 967-1010.

[Article](#) [Google Scholar](#)

Francis, J., LaFond, R., Olsson, P., & Schipper, K. (2005). The market pricing of accruals quality. *Journal of Accounting and Economics*, 39, 295-327.

[Article](#) [Google Scholar](#)

Franzen, L., Rodgers, K., & Simin, T. (2007). Measuring distress risk: The effect of R&D intensity. *Journal of Finance*, 57, 2931-2967.

[Article](#) [Google Scholar](#)

Givoly, D., & Hayn, C. (2000). The changing time-series properties of earnings, cash flows and accruals: Has financial reporting become more conservative? *Journal of Accounting and Economics*, 29, 287-320.

[Article](#) [Google Scholar](#)

Graham, B., & Dodd, D. (1934). *Security analysis*. New York, NY: McGraw Hill.

[Google Scholar](#)



Hayn, C. (1995). The information content of losses. *Journal of Accounting and Economics*, 20, 125-153.

[Article](#) [Google Scholar](#)

Hillegeist, S., Keating, E., Cram, D., & Lundstedt, K. (2004). Assessing the probability of bankruptcy. *Review of Accounting Studies*, 9, 1573-7136.

[Article](#) [Google Scholar](#)

Hribar, P., & Nichols, D. C. (2007). The use of unsigned earnings quality measures in tests of earnings management. *Journal of Accounting Research*, 45(5), 1017-1053.

[Article](#) [Google Scholar](#)

Kasznik, R. (1999). On the association between voluntary disclosure and earnings management. *Journal of Accounting Research*, 37, 57-81.

[Article](#) [Google Scholar](#)

Landsman, W., & Maydew, E. (2002). Has the information content of quarterly earnings announcements declined in the past three decades? *Journal of Accounting Research*, 40, 797-808.

[Article](#) [Google Scholar](#)

Lev, B. (2001). *Intangibles: Management, measurement, and reporting*. Washington, D.C.: Brookings Institution Press.

[Google Scholar](#)

Lev, B., & Sougiannis, T. (1996). The capitalization, amortization, and value-relevance of R&D. *Journal of Accounting and Economics*, 21, 107-138.

[Article](#) [Google Scholar](#)

Lev, B., & Zarowin, P. (1999). The boundaries of financial reporting and how to extend them. *Journal of Accounting Research*, 37, 353-386.

[Article](#) [Google Scholar](#)

McNichols, M. (2000). Research design issues in earnings management studies. *Journal of Accounting and Public Policy*, 19(2000), 313-345.

[Article](#) [Google Scholar](#)

Merton, R. (1974). On the pricing of corporate debt: The risk structure of interest rates. *Journal of Finance*, 29, 449-470.

[Google Scholar](#)

Ohlson, J. (1980). Financial ratios and the probabilistic prediction of bankruptcy. *Journal of Accounting Research*, 18, 109-131.

[Article](#) [Google Scholar](#)

Shumway, T. (2001). Forecasting bankruptcy more accurately: A simple hazard model. *Journal of Business*, 74, 101-124.

[Article](#) [Google Scholar](#)

Wahlen, J. (1994). The nature of information in commercial bank loan loss disclosures. *The Accounting Review*, 69, 455-478.

[Google Scholar](#)

Watts, R., & Zimmerman, J. (1990). Positive accounting theory: A ten year perspective. *The Accounting Review*, 65, 131-156.

[Google Scholar](#)

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## Author information

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### 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

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

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**Table 11 Panel A: variable definitions**

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**Table 12 Panel B: data sources for the restatement variable**

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