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A Diagnostic for Earnings Management Using Changes in Asset Turnover and Profit Margin*

IVO PH. JANSEN, SUNDARESH RAMNATH, TERI LOMBARDI YOHN

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A Diagnostic for Earnings Management Using Changes in Asset Turnover and Profit Margin*

IVO PH. JANSEN, *Rutgers University–Camden*

SUNDARESH RAMNATH, *University of Miami*

TERI LOMBARDI YOHN, *Indiana University*

1. Introduction

Identifying earnings management is important for financial statement users to assess current economic performance, to predict future profitability, and to determine firm value. However, it is often difficult and time-consuming to identify earnings management, especially in generic settings where an obvious incentive to manage earnings is absent. While academic research has used numerous proxies for (or diagnostics of) earnings management, most recent studies use accruals models to decompose total accruals into a normal, economics-driven component and an abnormal, earnings management component.[1] McNichols (2000) points out, however, that there is limited theory about how accruals should behave in the absence of discretion, and Fields, Lys, and Vincent (2001) argue that the use of existing accruals models may lead to serious inference problems.

In DuPont analysis, a firm's return on assets is decomposed into asset turnover (ATO, the ratio of sales to net operating assets) and profit margin (PM, the ratio of operating income to sales), and financial statement analysis textbooks broadly advocate making this decomposition when investigating profitability and changes in profitability (see, e.g., White, Sondhi, and Fried 2003; Palepu, Bernard, and Healy 2004; Penman 2007; Stickney, Brown, and Wahlen 2004; Lundholm and Sloan 2004). In this study, we propose a simple diagnostic of earnings management that relies on the widely held notion underlying DuPont analysis that sales is a fundamental driver of a firm's investment and income, and that net operating assets on the balance sheet and net operating income on the income statement should vary directly with sales. In other words, *changes* in ATO or PM warrant further investigation in quality of earnings analyses. Moreover, we note that changes in ATO and PM *in opposite directions* could signal earnings management. We base this observation on the articulation of the income statement and balance sheet, which ensures that earnings management affects operating income and net operating assets in the same direction, and thus causes ATO and PM to move in opposite directions. For example, for a given level of sales, if a firm manages earnings upward by understating bad debt expense, both net income relative to sales and the net realizable value of accounts receivable relative

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1. See, for example, Healy 1985; DeAngelo 1986; Jones 1991; Dechow, Richardson, and Tuna 2003; and Kothari, Leone, and Wasley 2005.

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Barton, J., and P. Simko. 2002. The balance sheet as an earnings management constraint. *The Accounting Review* **77** (Supplement): 1–27.

Web of Science® | Google Scholar

Bernard, V. L., and D. J. Skinner. 1996. What motivates managers' choice of discretionary accruals? *Journal of Accounting and Economics* **22** (1): 313–25.

Web of Science® | Google Scholar

Burgstahler, D., and M. Eames. 2006. Management of earnings and analysts' forecasts to achieve zero and small positive earnings surprises. *Journal of Business, Finance and Accounting* **33** (5-6): 633–52.

Web of Science® | Google Scholar

Cheng, Q., and T. D. Warfield. 2005. Equity incentives and earnings management. *The Accounting Review* **80** (2): 441–76.

Web of Science® | Google Scholar

Cheong, F., and J. Thomas. 2009. Surprising absence of scale for forecast error and forecast dispersion distributions. Working paper, Yale University.

Google Scholar

Cohen, D., A. Dey, and T. Lys. 2008. Real and accrual-based earnings management in the pre-and post-Sarbanes-Oxley periods. *The Accounting Review* **83** (3): 757–87.

Web of Science® | Google Scholar

DeAngelo, L. 1986. Accounting numbers as market valuation substitutes: A study of management buyouts of public stockholders. *The Accounting Review* **61** (3): 400–20.

Web of Science® | Google Scholar

Dechow, P., and I. Dichev. 2002. The quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review* **77** (Supplement): 35–59.

Web of Science® | Google Scholar

Dechow, P. M., S. A. Richardson, and I. Tuna. 2003. Why are earnings kinky? An examination of the earnings management explanation. *Review of Accounting Studies* **8** (2): 355–84.

Web of Science® | Google Scholar

Dechow, P. M., and D. Skinner. 2000. Earnings management: Reconciling the views of accounting academics, practitioners, and regulators. *Accounting Horizons* **14** (2): 235–50.

Google Scholar

Dechow, P. M., R. G. Sloan, and A. P. Sweeney. 1995. Detecting earnings management. *The Accounting Review* **70** (2): 193–225.

Web of Science® | Google Scholar

DeFond, M. L., and J. Jiambalvo. 1994. Debt covenant violation and manipulation of accruals. *Journal of Accounting and Economics* **17** (1-2): 145–76.

Web of Science® | Google Scholar

DeLong, E. R., D. M. DeLong, and D. L. Clarke-Pearson. 1988. Comparing the areas under two or more correlated receiver operating characteristic curves: A nonparametric approach. *Biometrics* **44** (3): 837–45.

CAS | PubMed | Web of Science® | Google Scholar

Fairfield, P., R. J. Sweeney, and T. Yohn. 1996. Accounting classification and the predictive content of earnings. *The Accounting Review* **71** (3): 337–55.

Web of Science® | Google Scholar

Fairfield, P., and T. Yohn. 2001. Using ATO and PM to forecast changes in profitability. *Review of Accounting Studies* **6** (4): 371–85.

Google Scholar

Fields, T. D., T. Z. Lys, and L. Vincent. 2001. Empirical research on accounting choice. *Journal of Accounting and Economics* **31** (1): 255–307.

Web of Science® | Google Scholar

Freeman, R., J. Ohlson, and S. Penman. 1982. Book rate-of-return and the prediction of earnings changes. *Journal of Accounting Research* **20** (2): 639–53.

Web of Science® | Google Scholar

Gong, G., H. Louis, and A. Sun. 2008. Earnings management, lawsuits, and stock-for-stock acquirers' market performance. *Journal of Accounting and Economics* **46** (1): 62–77.

Web of Science® | Google Scholar

Healy, P. M. 1985. The effect of bonus schemes on accounting decisions. *Journal of Accounting and Economics* **7** (1-3): 85–107.

Web of Science® | Google Scholar

Healy, P. M., and J. Wahlen. 1999. A review of the earnings management literature and its implications for standard setting. *Accounting Horizons* **13** (4): 365–83.

Google Scholar

Hildebrand, D. K., R. L. Ott, and J. B. Gray. 2005. *Basic statistical ideas for managers*, 2nd ed. Belmont, CA: Thomson Brooks/Cole.

Google Scholar

Jones, J. 1991. Earnings management during import relief investigations. *Journal of Accounting Research* **29** (2): 193–229.

Web of Science® | Google Scholar

Kedia, S. 2003. Do executive stock options generate incentives for earnings management? Evidence from accounting restatements. Working paper, Harvard Business School.

Google Scholar

Koh, K., D. Matsumoto, and S. Rajgopal. 2008. Meeting or beating analyst expectations in the post-scandals world: Changes in stock market rewards and managerial actions. *Contemporary Accounting Research* **25** (4): 1067–98.

Web of Science® | Google Scholar

Kothari, S. P., A. Leone, and C. Wasley. 2005. Performance matched discretionary accrual measures. *Journal of Accounting and Economics* **39** (1): 163–97.

Web of Science® | Google Scholar

Lundholm, R. J., and R. G. Sloan. 2004. *Equity valuation and analysis*. New York: McGraw-Hill/Irwin.

Google Scholar

Matsumoto, D. A. 2002. Management's incentives to avoid negative earnings surprises. *The Accounting Review* **77** (3): 485–514.

Web of Science® | Google Scholar

McNichols, M. F. 2000. Research design issues in earnings management studies. *Journal of Accounting and Public Policy* **19** (4-5): 313–45.

Google Scholar

Moehrle, S. 2002. Do firms use restructuring charge reversals to meet earnings targets? *The Accounting Review* **77** (2): 397–414.

Web of Science® Google Scholar

Palepu, K. G., V. L. Bernard, and P. M. Healy. 2004. *Business analysis and valuation: Using financial statements*. Cincinnati, OH: South-Western Publishing.

Google Scholar

Penman, S. 2007. *Financial statement analysis and security valuation*, 3rd ed. New York: McGraw-Hill/Irwin.

Google Scholar

Rajan, M., S. Reichelstein, and M. Soliman. 2007. Conservatism, growth and return on investment. *Review of Accounting Studies* **12** (2-3): 325–70.

Web of Science® Google Scholar

Richardson, S., I. Tuna, and M. Wu. 2002. Predicting earnings management: The case of earnings restatements. Working paper, University of Pennsylvania.

Google Scholar

Stickney, C., P. Brown, and J. Wahlen. 2004. *Financial reporting and statement analysis: A strategic perspective*. Cincinnati, OH: Thomson South-Western.

Google Scholar

Subramanyam, K. R. 1996. The pricing of discretionary accruals. *Journal of Accounting and Economics* **22** (1-3): 249–81.

Web of Science® Google Scholar

Vuong, Q. H. 1989. Likelihood ratio tests for model selection and non-nested hypotheses. *Econometrica* **57** (2): 307–33.

Web of Science® Google Scholar

White, G. I., A. G. Sondhi, and D. Fried. 2003. *The analysis and use of financial statements*. New York: Wiley.

Google Scholar

Xie, H. 2001. The mispricing of abnormal accruals. *The Accounting Review* **76** (3): 357–73.

CAS | Web of Science® | Google Scholar

Zhao, U., and K. Chen. 2008. Staggered boards and earnings management. *The Accounting Review* **83** (5): 1347–81.

Web of Science® | Google Scholar

Citing Literature