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Earnings Quality

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Abstract

This review lays out a research perspective on earnings quality. We provide an overview of alternative definitions and measures of earnings quality and a discussion of research design choices encountered in earnings quality research. Throughout, we focus on a capital markets setting, as opposed, for example, to a contracting or stewardship setting. Our reason for this choice stems from the view that the capital market uses of accounting information are fundamental, in the sense of providing a basis for other uses, such as stewardship. Because resource allocations are *ex ante* decisions while contracting/stewardship assessments are *ex post* evaluations of outcomes, evidence on whether, how and to what degree earnings quality influences capital market resource allocation decisions is fundamental to understanding why and how accounting matters to investors and others, including those charged with stewardship responsibilities. Demonstrating a link between earnings quality and, for example, the costs of equity and debt capital implies a basic

economic role in capital allocation decisions for accounting information; this role has only recently been documented in the accounting literature.

We focus on how the precision of financial information in capturing one or more underlying valuation-relevant constructs affects the assessment and use of that information by capital market participants. We emphasize that the choice of constructs to be measured is typically contextual. Our main focus is on the precision of earnings, which we view as a summary indicator of the overall quality of financial reporting. Our intent in discussing research that evaluates the capital market effects of earnings quality is both to stimulate further research in this area and to encourage research on related topics, including, for example, the role of earnings quality in contracting and stewardship.

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1

Introduction

This discussion review aims to provide insights on earnings quality. We describe and analyze several determinants and measures of earnings quality, and we discuss both research which uses those determinants and measures and research which provides evidence on the capital markets consequences of earnings quality. In discussing earnings quality research, we focus both on the question addressed and the researcher's design choices. In our view, an examination of earnings quality and its determinants or consequences must address crucial research design issues, including the definition and measurement of both earnings quality itself and the construction of tests for its capital market effects (such as the cost of capital).

Our perspective, which is described in more detail in Section 2, can be summarized as follows. First, we associate earnings quality with precision, in the sense that higher quality earnings are more precise with respect to an underlying valuation-relevant construct that earnings is intended to describe. Differences in the construct chosen as the benchmark for earnings quality imply differences in the research question posed, and therefore also imply differences in how earnings quality is measured. Researchers have proposed distinct constructs against which earnings quality is measured,[1] as well as different approaches to measurement. Second, we take a capital allocation view of earnings quality, as opposed to a contracting or stewardship view, and therefore we are concerned with the capital market consequences of earnings quality. Third, we view earnings quality as comprising both an innate, relatively stable component that is driven by factors intrinsic to business models and operating environments and a relatively more discretionary and fluctuating component that is driven or influenced by management's financial reporting decisions. We do not view earnings quality as only, or even primarily, the outcome of a period-by-period management choice; rather, we view the precision of earnings as arising from both reporting decisions and long-run strategic decisions about, for example, what should be the firm's lines of business.

Earnings quality is of considerable interest to participants in the financial reporting process, including standard setters, preparers, auditors, regulators, analysts, and financial press commentators. It is also of interest to accounting educators and accounting researchers. As evidence of this interest, we point to several analyses of earnings quality, including Dechow and Schrand (2004), Schipper and Vincent (2003), and the 2002 special issue of *The Accounting Review* devoted to research on earnings quality. These analyses vary in the benchmark construct that earnings is presumed to capture or describe, and in the evidence on earnings quality that is presented or discussed. Our review is intended to complement and extend the insights available from these analyses.

Dechow and Schrand (2004) analyze earnings quality from a financial analysis perspective. They take the view that earnings are of high quality if they "accurately annuitize the intrinsic value of the firm" (p. 5). They identify this annuitizing-of-value attribute with reporting a normalized, sustainable or representative earnings number that corresponds to permanent earnings and they describe such an earnings

[1] For example, research has used, as measures of earnings quality, the value relevance of earnings (as reflected by the mapping of earnings into stock returns), timeliness, conservatism, accruals quality, persistence, and predictability, among other measures. As discussed in Section 4, fundamental differences among these measures likely make them differentially effective at capturing the multi-dimensional construct of earnings quality.

number as being of high quality because it has three attributes: it accurately reflects current performance; it indicates future performance; and it is a useful summary for assessing firm value. Our perspective complements that taken by Dechow and Schrand in that we associate earnings quality with precise (that is, low variance) information about a construct that earnings is intended to describe; in the context of Dechow and Schrand's discussion, this construct would be permanent earnings. However, as discussed in Section 4, researchers have also posited other constructs. Our analysis of alternative measures of earnings quality distinguishes between accounting-based constructs (such as cash flows) and market-based constructs (such as the information summarized in returns) that earnings might be intended to capture.

In contrast, Schipper and Vincent (2003) consider earnings quality both from a decision usefulness perspective, following the Financial Accounting Standards Board's (FASB) conceptual framework, and from a Hicksian income perspective, following the idea that accounting earnings should faithfully represent changes in wealth. Applying our perspective to their paper, the construct that is captured with precision by high quality earnings would be wealth changes (which would probably not correspond to the normalized or sustainable earnings number proposed by Dechow and Schrand). While Schipper and Vincent discuss some of the same earnings quality measures that we analyze in Section 4, they do not consider the capital market consequences of earnings quality, one of the main purposes of our discussion review.

Finally, the American Accounting Association-sponsored conference on Quality of Earnings resulted in a special issue of *The Accounting Review* (2002) that contains six papers and related discussions that consider earnings quality from a balance sheet perspective, from a measurement perspective, from an auditor independence perspective, from an international perspective, from an analyst expertise perspective, and from an earnings management perspective. Our discussion review complements these papers by relating some of them to the earnings quality measures, determinants, and consequences that we consider. We note that the reviews in this special issue were not intended to encompass all, or even a particular subset of, the possible approaches to research pertaining to earnings quality.

Those with interests in earnings quality also tend to be interested in a related concept, earnings management. We do not attempt to describe the voluminous literature on earnings management.[2] This research tends not to consider the capital market consequences of that activity, particularly for broad samples of firms, while one of our main objectives is to discuss how research can provide evidence on the extent to which differences in earnings quality are reflected in capital market outcomes, such as the cost of capital. Our precision-based perspective on earnings quality is related to earnings management because management's financial reporting decisions are one of several determinants of earnings quality. In this regard, we note that the effect of earnings management on the precision of earnings as a descriptor of an underlying construct is likely to be highly context specific. For example, incentives to increase idiosyncratic returns volatility would be expected to encourage earnings management that decreases precision.[3]

The rest of this review proceeds as follows. In Section 2, we describe our perspective on earnings quality and place earnings quality in the context of overall capital market information quality. In Section 3, we discuss the determinants of earnings quality, broadly separated into intrinsic determinants that derive from business models and operating environments and reporting determinants that derive from the management's implementation decisions in financial reporting process *per se*. In Section 4, we describe and compare 12 measures of earnings quality, provide examples of research which uses these measures, and, for some measures, offer some views about which measures are preferable in a given context. Section 5 discusses research design issues, and research findings, pertaining to the capital market consequences of earnings quality, in particular, its association with expected returns (or the cost of capital) and unexpected (abnormal) returns. Section 6 concludes the review.

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[2] Surveys of earnings management research include, for example, Healy and Wahlen (1999) and Dechow and Skinner (2000). In addition, Dechow and Schrand (2004) discuss aspects of earnings management, and related research, as these pertain to their perspective on earnings quality.

[3] These incentives could arise if call options comprise a significant portion of management's compensation because, other things equal, the value of a call option is increasing in total volatility of the underlying shares; for additional discussion see Francis et al. (2007b).

Throughout the review, we use examples of research to illustrate earnings quality concepts, theories, measures, and results. These examples are not intended to provide a survey of published and unpublished research on earnings quality. Because research on earnings quality continues to evolve, we do not attempt to make our examples exhaustive, nor do we view our discussions or summaries of existing research work as definitive.

References

Aboody, D., J. Hughes, and J. Liu (2005), 'Earnings quality, insider trading, and cost of capital'. *Journal of Accounting Research* **43**, 651–673.

Ali, A., L.-S. Hwang, and M. Trombley (2003), 'Arbitrage risk and the book-to-market anomaly'. *Journal of Financial Economics* **69**, 355–373.

Amihud, Y. and H. Mendelson (1986), 'Asset pricing and the bid-ask spread'. *Journal of Financial Economics* **17**, 233–249.

Aslan, H., D. Easley, S. Hvidkjær, and M. O'Hara (2006), 'The determinants of informed trading: Implications for asset pricing'. Working paper, University of Houston, Cornell University and University of Maryland.

Ball, R., S. P. Kothari, and A. Robin (2000), 'The effect of international institutional factors on properties of accounting earnings'. *Journal of Accounting and Economics* **29**, 1–51.

Barone, G. (2003), 'Perceptions of earnings quality and their association with the cost of equity capital'. Working paper, University of Texas.

Barth, M., W. Beaver, and W. Landsman (2001), 'The relevance of the value relevance literature for financial accounting standard setting: Another view'. *Journal of Accounting and Economics* **31**, 77–104.

Barth, M., Y. Konchitchki, and W. Landsman (2006), 'Cost of capital and financial statement transparency'. Working paper, Stanford University, University of Southern California and University of North Carolina.

Bartov, E., D. Givoly, and C. Hayn (2002), 'The rewards to meeting or beating earnings expectations'. *Journal of Accounting and Economics* **33**, 173–204.

Bartov, E. and P. Mohanram (2004), 'Private information, earnings manipulations, and executive stock-option exercise'. *The Accounting Review* **79**, 889–920.

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

Beasley, M. S. (1996), 'An empirical analysis of the relation between the board of director composition and financial statement fraud'. *The Accounting Review* **71**, 443–465.

Becker, C., M. DeFond, J. Jiambalvo, and K. R. Subramanyam (1998), 'The effects of audit quality on earnings management'. *Auditing: A Journal of Practice and Theory* **15**, 1–24.

Bedard, J. and S. F. Biggs (1991), 'Pattern recognition, hypotheses generation, and auditor performance in an analytical task'. *The Accounting Review* **66**, 622–642.

Berger, P., H. Chen, and F. Li (2006), 'Firm specific information and the cost of equity capital'. Working paper, University of Chicago, University of British Columbia and University of Michigan.

Bhattacharya, N., H. Desai, and K. Venkataraman (2007a), 'Earnings quality and information asymmetry: Evidence from trading costs'. Working paper, Southern Methodist University.

Bhattacharya, N., F. Ecker, P. Olsson, and K. Schipper (2007b), 'Direct and mediated associations among earnings quality, information asymmetry and the cost of equity'. Working paper, Southern Methodist University and Duke University.

Bhattacharya, U., H. Daouk, and M. Welker (2003), 'The world pricing of earnings opacity'. *The Accounting Review* **78**, 641–678.

Black, F. (1972), 'Capital market equilibrium with restricted borrowing'. *Journal of Business* **45**, 444–455.

Bonner, S. and B. Lewis (1990), 'Determinants of auditor expertise'. *Journal of Accounting Research* **28**(Supplement), 1–2.

Botosan, C. (1997), 'Disclosure level and the cost of equity capital'. *The Accounting Review* **72**, 323–349.

Botosan, C. and M. Plumlee (2005), 'Assessing alternative proxies for the expected risk premium'. *The Accounting Review* **81**, 21–53.

Brav, A. and J. B. Heaton (2002), 'Competing theories of financial anomalies'. *Review of Financial Studies* **15**, 575–606.

Brav, A., R. Lehavy, and R. Michaely (2005), 'Using expectations to test asset pricing models'. *Financial Management* **34**, 31–64.

Bushman, R., Q. Chen, E. Engel, and A. Smith (2004), 'Financial accounting information, organizational complexity and corporate governance systems'. *Journal of Accounting and Economics* **37**, 167–201.

Campbell, J. and R. Shiller (1988), 'The dividend-price ratio and expectations of future dividends and discount factors'. *Review of Financial Studies* **1**, 195–228.

Chaney, P., B. Cooil, and D. Jeter (2007), 'A latent class model of earnings attributes'. Working paper, Vanderbilt University.

Chen, L., D. Dhaliwal, and M. Trombley (2007a), 'The effect of fundamental risk on the market pricing of accruals quality'. Working paper, University of Arizona.

Chen, S., T. Shevlin, and Y. Tong (2007b), 'What is the information content of dividend changes? A new investigation of an old puzzle'. *Journal of Accounting Research* **45**, 1–40.

Claus, J. and J. Thomas (2001), 'Equity premia as low as three percent? Evidence from analysts' earnings forecasts for domestic and international stock markets'. *Journal of Finance* **56**, 1629–1666.

Cohen, D. (2006), 'Does information risk really matter? An analysis of the determinants and economic consequences of financial reporting quality'. Working paper, New York University.

Cohen, D., A. Dey, and T. Lys (2005), 'The Sarbanes Oxley Act of 2002: Implications for compensation structure and risk-taking incentives of

CEOs'. Working paper, New York University, University of Chicago and Northwestern University.

Collins, D. and S. P. Kothari (1989), 'An analysis of intertemporal and cross-sectional determinants of earnings response coefficients'. *Journal of Accounting and Economics* **11**, 143–181.

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

Core, J., W. Guay, and R. Verdi (2007), 'Is accruals quality a priced risk factor?'. *Journal of Accounting and Economics* (forthcoming).

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.

Dechow, P. and C. Schrand (2004), *Earnings quality*. CFA Institute.

Dechow, P. and D. Skinner (2000), 'Earnings management: Reconciling the views of accounting academics, practitioners, and regulators'. *Accounting Horizons* **14**, 235–250.

Dechow, P., R. Sloan, and A. Sweeney (1996), 'Causes and consequences of earnings manipulation: An analysis of firms subject to enforcement actions by the SEC'. *Contemporary Accounting Research* **13**, 1–36.

Diamond, D. and R. Verrecchia (1991), 'Disclosure, liquidity, and the cost of capital'. *Journal of Finance* **46**, 1325–1359.

Easley, D., S. Hvidkjær, and M. O'Hara (2002), 'Is information risk a determinant of asset returns?'. *Journal of Finance* **57**, 2185–2221.

Easley, D., N. Kiefer, and M. O'Hara (1996), 'Cream-skimming or profit-sharing? The curious role of purchased order flow'. *Journal of Finance* **51**, 811–833.

Easley, D. and M. O'Hara (2004), 'Information and the cost of capital'. *Journal of Finance* **59**, 1553–1583.

Easton, P. (2004), 'PE ratios, PEG ratios, and estimating the implied expected rate of return on equity capital'. *The Accounting Review* **79**, 73–95.

Easton, P. and M. Zmijewski (1989), 'Cross-sectional variation in the stock market response to accounting earnings announcements'. *Journal of Accounting and Economics* **11**, 117–141.

Ecker, F. (2006), 'Information risk and long-run performance of initial public offerings'. Working paper, Duke University.

Ecker, F., J. Francis, I. Kim, P. Olsson, and K. Schipper (2006), 'A returns-based representation of earnings quality'. *The Accounting Review* **81**, 749–780.

Ecker, F., J. Francis, P. Olsson, and K. Schipper (2005), 'Comparing total and current accruals quality'. Working paper, Duke University.

Fama, E. and K. French (1993), 'Common risk factors in the returns on stocks and bonds'. *Journal of Financial Economics* **33**, 3–56.

Fama, E. and K. French (1997), 'Industry costs of equity'. *Journal of Financial Economics* **93**, 153–194.

Fan, J. and T. J. Wong (2002), 'Corporate ownership structure and the informativeness of accounting earnings in East Asia'. *Journal of Accounting and Economics* **33**, 401–425.

Francis, J., A. Huang, S. Rajgopal, and A. Zang (2008a), 'CEO reputation and reporting quality'. *Contemporary Accounting Research* (forthcoming).

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

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

Francis, J., R. LaFond, P. Olsson, and K. Schipper (2007a), 'Information uncertainty and post-earnings-announcement-drift'. *Journal of Business, Finance and Accounting* **34**, 403–433.

Francis, J., D. J. Nanda, and P. Olsson (2008b), 'Voluntary disclosure, earnings quality, and cost of capital'. *Journal of Accounting Research* **46**, 53–99.

Francis, J., P. Olsson, and K. Schipper (2007b), 'Call options and accruals quality'. Working paper, Duke University.

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

Francis, J., K. Schipper, and L. Vincent (2002), 'Earnings announcements and competing information'. *Journal of Accounting and Economics* **33**, 313–342.

Francis, J., K. Schipper, and L. Vincent (2005b), 'Earnings and dividend informativeness when cash flow rights are separated from voting rights'. *Journal of Accounting and Economics* **39**, 329–360.

Frankel, R., M. Johnson, and K. Nelson (2002), 'The relation between auditors' fees for nonaudit services and earnings management'. *The Accounting Review* **77**(Supplement), 71–105.

Gebhardt, W., C. Lee, and B. Swaminathan (2001), 'Toward an implied cost of capital'. *Journal of Accounting Research* **39**, 135–176.

Gode, D. and P. Mohanram (2003), 'Inferring the cost of equity using the Ohlson-Jüttner model'. *Review of Accounting Studies* **8**, 399–431.

Gray, P., P.-S. Koh, and Y. Tong (2007), 'Accruals quality, information risk and cost of capital: Evidence from Australia'. Working paper, University of Queensland, Hong Kong University of Science and Technology and Nanyang Technological University.

Guay, W. (1999), 'An empirical analysis of the convexity between stock price and CEO's wealth'. *Journal of Financial Economics* **53**, 43–71.

Guay, W., S. P. Kothari, and R. Watts (1996), 'A market-based evaluation of discretionary accrual models'. *Journal of Accounting Research* **34**(Supplement), 83–105.

Gul, F. and L. K. Wah (2002), 'Insider entrenchment, board leadership structure and informativeness of earnings'. Working paper, City University of Hong Kong.

Hanlon, M., T. Shevlin, and S. Rajgopal (2003), 'Are executive stock options associated with future earnings'. *Journal of Accounting and Economics* **36**, 3–43.

Healy, P. (1996), 'Discussion of "A market-based evaluation of discretionary accrual models"'. *Journal of Accounting Research* **34**(Supplement), 107–115.

Healy, P. and J. Wahlen (1999), 'A review of the earnings management literature and its implications for standard setting'. *Accounting Horizons* **13**, 365–383.

Holthausen, R. and R. Verrecchia (1988), 'The effects of sequential information releases on the variance of price changes in an inter-temporal asst multi-asset market'. *Journal of Accounting Research* **26**, 82–106.

Holthausen, R. and R. Watts (2001), 'The relevance of the value relevance literature for financial accounting standard setting'. *Journal of Accounting and Economics* **31**, 3–75.

Huang, R. and H. Stoll (1996), 'Dealer versus auction markets: A paired comparison of execution costs on NASDAQ and NYSE'. *Journal of Financial Economics* **41**, 313–357.

Huang, R. and H. Stoll (1997), 'The components of the bid-ask spread: A general approach'. *Review of Financial Studies* **10**, 995–1034.

Hughes, J., J. Liu, and J. Liu (2007), 'Information asymmetry, diversification and cost of capital'. *The Accounting Review* **82**, 705–729.

Hunt, A., S. Moyer, and T. Shevlin (2000), 'Earnings volatility, earnings management and equity value'. Working paper, University of Washington.

Indjejikian, R. (2007), 'Discussion of "Accounting information, disclosure, and the cost of capital"'. *Journal of Accounting Research* **45**(Supplement), 421–426.

Jiang, G., C. Lee, and Y. Zhang (2005), 'Information uncertainty and expected returns'. *Review of Accounting Studies* **10**, 185–221.

Johnson, V., I. Khurana, and J. Reynolds (2002), 'Audit tenure and the quality of financial reports'. *Contemporary Accounting Research* **19**, 637–660.

Jones, J. (1991), 'Earnings management during import relief investigations'. *Journal of Accounting Research* **29**, 193–228.

Kim, M. and J. Ritter (1999), 'Valuing IPOs'. *Journal of Financial Economics* **53**, 409–437.

Klein, A. (2002), 'Audit committee, board of director characteristics, and earnings management'. *Journal of Accounting and Economics* **33**, 375–400.

Kothari, S. P., A. Leone, and C. Wasley (2005), 'Performance matched discretionary accrual measures'. *Journal of Accounting and Economics* **39**, 163–197.

Krishnan, G. (2003), 'Does Big 6 auditor industry expertise constrain earnings management?'. *Accounting Horizons* **17**(Supplement), 1–16.

Krishnan, G., B. Srinidhi, and L. Su (2008), 'Inventory policy, accruals quality and information risk'. *Review of Accounting Studies* (forthcoming).

Lambert, R., C. Leuz, and R. Verrecchia (2007a), 'Accounting information, disclosure, and the cost of capital'. *Journal of Accounting Research* **45**(Supplement), 385–420.

Lambert, R., C. Leuz, and R. Verrecchia (2007b), 'Information asymmetry, information precision, and the cost of capital'. Working paper, University of Pennsylvania and University of Chicago.

Lang, M. and R. Lundholm (1996), 'Corporate disclosure policy and analyst behavior'. *The Accounting Review* **71**, 467–492.

Larcker, D. and S. Richardson (2004), 'Fees paid to audit firms, accrual choices and corporate governance'. *Journal of Accounting Research* **42**, 625–658.

Leuz, C., D. J. Nanda, and P. Wysocki (2003), 'Earnings management and investor protection: An international comparison'. *Journal of Financial Economics* **69**, 505–527.

Lev, B. (1989), 'On the usefulness of earnings and earnings research: Lessons and directions from two decades of empirical research'. *Journal of Accounting Research* **27**(Supplement), 153–192.

Lev, B. and R. Thiagarajan (1993), 'Fundamental information analysis'. *Journal of Accounting Research* **31**, 190–215.

Lintner, J. (1965), 'The valuation of risk assets and the selection of risky investments in stock portfolios and capital budgets'. *Review of Economics and Statistics* **47**, 13–37.

Lipe, R. (1990), 'The relation between stock returns and accounting earnings given alternative information'. *The Accounting Review* **65**, 49–71.

Liu, M. and P. Wysocki (2007), 'Cross-sectional determinants of information quality proxies and cost of capital measures'. Working paper, Penn State and MIT (version: July 2007).

Loughran, T. and J. Ritter (1995), 'The new issues puzzle'. *Journal of Finance* **50**, 23–51.

Mashruwala, C., S. Rajgopal, and T. Shevlin (2006). 'Why is the accrual anomaly not arbitraged away?' *Journal of Accounting and Economics* **42**, 3–33.

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

McNichols, M. (2002), 'Discussion of 'The quality of accruals and earnings: The role of accrual estimation errors''. *The Accounting Review* **77**(Supplement), 61–69.

Mendenhall, R. (2004), 'Arbitrage risk and post-earnings announcement drift'. *Journal of Business* **77**, 875–894.

Merton, R. (1987), 'A simple model of capital market equilibrium with incomplete information'. *Journal of Finance* **42**, 483–510.

Morck, R. and B. Yeung (2002), 'The puzzle of the harmonious stock prices'. *World Economics Journal* **3**, 105–119.

Morck, R., B. Yeung, and W. Yu (2000). 'The information content of stock markets: Why do emerging markets have synchronous stock price movements?' *Journal of Financial Economics* **58**, 215–260.

Myers, J., L. Myers, and T. Omer (2003). 'Exploring the term of the auditor-client relationship and the quality of earnings: A case for mandatory auditor rotation?' *The Accounting Review* **78**, 779–799.

Nichols, C. (2006), 'Fundamental or information risk? An analysis of the residual accrual volatility factor'. Working paper, Cornell University.

Ogneva, M. (2007), 'Accrual quality and expected returns: The importance of controlling for cash flow shocks'. Working paper, University of Southern California.

Ohlson, J. and B. Jüttner-Nauroth (2005), 'Expected EPS and EPS growth as determinants of value'. *Review of Accounting Studies* **10**, 349–365.

Palmrose, Z., V. J. Richardson, and S. Scholz (2004), 'Determinants of market reactions to restatement announcements'. *Journal Accounting and Economics* **37**, 59–89.

Peasnell, K., P. Pope, and S. Young (2005). 'Board monitoring and earnings management: Do outside directors influence abnormal accruals?' *Journal of Business Finance and Accounting* **32**, 1311–1346.

Penman, S. and X.-J. Zhang (2002), 'Accounting conservatism, the quality of earnings and stock returns'. *The Accounting Review* **77**, 237–264.

Pontiff, J. (1996), 'Costly arbitrage: Evidence from closed-end funds'. *The Quarterly Journal of Economics* **111**, 1135–1151.

Pontiff, J. (2005), 'Costly arbitrage and the myth of idiosyncratic risk'. *Journal of Accounting and Economics* **42**, 35–52.

Rajgopal, S. and T. Shevlin (2002), 'Empirical evidence on the relation between stock option compensation and risk taking'. *Journal of Accounting and Economics* **33**, 145–171.

Rajgopal, S. and M. Venkatachalam (2006), 'Information risk and idiosyncratic return volatility over the last four decades'. Working paper, University of Washington and Duke University.

Schipper, K. and L. Vincent (2003), 'Earnings quality'. *Accounting Horizons* **17**(Supplement), 97–110.

Sharpe, W. (1964), 'Capital asset prices: A theory of market equilibrium under conditions of risk'. *Journal of Finance* **19**, 425–442.

Shleifer, A. and R. Vishny (1997), 'The limits of arbitrage'. *Journal of Finance* **52**, 35–55.

Sloan, R. (1996). 'Do stock prices fully reflect information in accruals and cash flows about future earnings?' *The Accounting Review* **71**, 289–315.

Subramanyam, K. R. (1996), 'The pricing of discretionary accruals'. *Journal of Accounting and Economics* **22**, 249–281.

Teoh, S. and T. J. Wong (1993), 'Perceived auditor quality and the earnings response coefficient'. *The Accounting Review* **68**, 346–366.

Tufano, P. (1996), 'Who manages risk? An empirical examination of risk management practices in the gold mining industry'. *Journal of Finance* **51**, 1097–1137.

Verrecchia, R. (1990), 'Information quality and discretionary disclosure'. *Journal of Accounting and Economics* **12**, 365–380.

Warfield, T., J. Wild, and K. Wild (1995), 'Managerial ownership, accounting choices and informativeness of earnings'. *Journal of Accounting and Economics* **20**, 61–91.

Watts, R. (2003), 'Conservatism in accounting, Part 1: Explanations and implications'. *Accounting Horizons* **17**, 207–221.

Wright, A. and S. Wright (1997), 'An examination of factors affecting the decision to waive audit adjustments'. *Journal of Accounting, Auditing and Finance* **12**, 15–36.

Wurgler, J. and E. V. Zhuravskaya (2002). 'Does arbitrage flatten demand curves for stocks?' *Journal of Business* **75**, 583–608.

Xie, H. (2001), 'The mispricing of abnormal accruals'. *The Accounting Review* **76**, 357–373.

Yee, K. (2006), 'Earnings quality and the equity risk premium: A benchmark model'. *Contemporary Accounting Research* **23**, 833–877.

Yeo, G., P. Tan, K. Ho, and S. Chen (2002), 'Corporate ownership structure and the informativeness of earnings'. *Journal of Business, Finance and Accounting* **29**, 1023–1046.

Zhang, F. (2006), 'Information uncertainty and stock returns'. *Journal of Finance* **61**, 105–136.