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The changing time-series properties of earnings, cash flows and accruals: Has financial reporting become more conservative? ☆

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Abstract

This paper documents changes in the patterns of earnings, cash flows and accruals over the last four decades. In the absence of a generally accepted definition of conservatism, a number of measures of reporting conservatism are identified and examined. These measures rely on the accumulation of nonoperating accruals, the timeliness of earnings with respect to bad and good news, characteristics of the earnings distribution and the market-to-book ratio. The patterns are consistent with an increase in conservative financial reporting over time. The findings have implications for accounting standard setting, regulation of financial information and financial statement analysis.

Introduction

In a steady state and over a sufficiently long period, accounting-based measures of performance of the firm are expected to converge to the 'true' economic performance as measured by the cash flows from operations. In particular, any departure of accounting earnings from cash flows from operations is temporary and mean reverting. This expectation, which underlies the interpretation and analysis of financial statements (see, for example, Carslaw and Mills, 1991), has been conceptually articulated in a valuation framework by Ohlson (1995) and Feltham and Ohlson (1995).

Recent studies provide indications that certain shifts in the economics-accounting mapping do, however, occur over time. For example, the earnings response coefficient (ERC) has been found to decline over recent years (see, for example, Barth et al., 1998; Collins and Kothari, 1989; Collins et al., 1997; Easton and Harris, 1991; Francis and Schipper, 1999; Hayn, 1995; Lev and Zarowin, 1998; Rayburn, 1986). Further, a continuous shift in emphasis from earnings to the book value of equity has been documented (see Barth et al., 1998; Collins et al., 1997).

This study extends this body of research by analyzing the relation between earnings and cash flows to identify structural changes in the accounting reporting system. In particular, we examine whether the changes in the time-series properties of earnings, cash flows and accruals are consistent with increased reporting conservatism.

Anecdotal evidence suggests that financial reporting has become more conservative in recent years. This evidence includes the numerous FASB pronouncements that have the effect of an earlier recognition of expenses and losses, or a deferral of revenue recognition.[1] It also includes the increasingly litigious environment[2] that has led management to adopt a more conservative reporting stance,[3] and auditors to be more careful in client selection and less willing to accommodate management reporting objectives.[4]

The issue of whether the time-series properties of accounting numbers have changed over time and, in particular, whether accounting in the U.S. has become more conservative is important for investors, researchers and regulatory bodies. If a change in the structural relation between earnings, cash flows and accruals has occurred, financial statement analysis should recognize it. For example, if the degree of reporting conservatism has increased over time, a time-series analysis of the financial statements is not meaningful unless there is an adjustment for the varying levels of conservatism. Indeed, the need for such an adjustment to account for cross-country differences in the degree of conservatism is suggested by researchers of international accounting (Gray, 1980; Joos and Lang, 1994; Harris et al., 1994; Ball et al., 1999; Pope and Walker, 1999). Further, it appears that financial analysts are already making this type of adjustment when comparing financial statements of companies in different countries (French and Poterba, 1991; Speidel and Bavishi, 1992).

The issue of conservatism is tied to the debate about whether the current level of stock prices represents a ‘bubble’. Those who contend that the U.S. stock markets today are artificially inflated often support their claim citing as evidence the historically high earnings multiples and market-to-book values.[5] However, if financial reporting by U.S. companies is indeed more conservative, the time-series comparison of these valuation measures may be misleading.

From a research perspective, a finding of increased conservatism will add another dimension to the research examining managers’ opportunistic behavior in financial reporting. Specifically, such a finding would suggest that the relative weight of reporting considerations such as political costs, compensation incentives and the capital market response vary over time (Watts and Zimmerman, 1986).

Despite the fact that the conservatism phenomenon is important and has, indeed, attracted some attention from analysts,[6] accounting standard setters[7] and regulators,[8] the empirical findings regarding the extent of, and, in particular, the trend in, conservatism are scant. Stober (1996), using the market-to-book ratio as a proxy for the degree of conservatism, finds a conservative bias in accounting book values relative to market values. Leftwich (1995) examines the content of the history of the FASB pronouncements and agenda decisions. He concludes that they manifest a conservative tilt and a predominant concern by the FASB that management is more likely to use its measurement discretion and disclosure options to report higher earnings and net worth over some horizon.

Basu (1997) devises several empirical measures of conservatism, among them a stronger association of stock price movements and earnings in periods of bad news. His results are consistent with the presence of reporting conservatism and with the level of conservatism varying with changes in auditors’ legal liability exposure. Holthausen and Watts (2000), employing Basu's methodology, provide indications of conservative accounting even in the pre-standard setting era and an increase in its degree during the FASB's regime. Similar market-based measures are used by Ball et al. (1999) and by Pope and Walker (1999) to assess cross-country differences in conservatism. Results that could be interpreted as indicating reporting conservatism are also reported by McNichols (1988). She finds that returns during earnings announcement periods are skewed more negatively than non-announcement returns, which is consistent with earnings reflecting bad news in a more timely manner than good news.

The studies cited above, with the exception of Holthausen and Watts (2000), have not focused on the intertemporal variations in the degree of conservatism. This study extends this line of research by addressing the variation in conservatism over time. Further, rather than relying primarily on market-based measures of conservatism (such as the market-to-book ratio), this paper recognizes that conservatism is essentially an issue of the timing and sequencing of revenues and expenses relative to the associated cash flows. Therefore, both time-series and distributional properties of earnings, cash flows and accruals are examined.

The findings show persistent, non-trivial changes in the relation between earnings, cash flows and accruals. In line with the results of previous studies (e.g., Hayn, 1995; Jan and Ou, 1994; Collins et al., 1997), we find that reported profitability over the last four decades has generally declined. More revealing, however, is the finding that this decline is not accompanied by a corresponding decline in cash flows. In particular, the evidence points to a massive accumulation of negative nonoperating accruals over this period. In addition, the earnings distribution has become more dispersed and negatively skewed relative to that of cash flows. The evidence also suggests a more timely recognition of ‘bad news’ relative to ‘good news’. These results are consistent with an increase over time in the degree of reporting conservatism.

The findings have implications for financial statement analysis, accounting standard setting, securities regulation and research. The changes in the time-series patterns of earnings and cash flows suggest that an analysis of financial statements should take into account this trend rather than relying on historical benchmark ratios. In particular, the indications of a greater conservatism in financial reporting suggest that the higher earnings multiples and market-to-book ratios of recent years do not necessarily imply equity overpricing. The results also call into question the assumption, often made by researchers and regulatory bodies, regarding management's motivation to accelerate earnings.

The remainder of the paper is organized as follows. Section 2 discusses the nature of conservatism and introduces measures to assess its extent. The data and sample are described in Section 3. Section 4 contains the findings concerning conservatism, based on the measures introduced in Section 2. Section 5 provides a summary and concluding remarks.

Section snippets

Definition and measurement of reporting conservatism

Conservatism is an important convention of financial reporting. It implies the exercise of caution in the recognition and measurement of income and assets. However, despite its central role in accounting theory and practice, no authoritative definition of conservatism exists. The only ‘official’ definition is that offered in the glossary of Statement of Concepts No. 2 of the FASB, namely, that conservatism is 'a prudent reaction to uncertainty to try to ensure that uncertainty and risks…

Sample

The sample consists of all firms on the 1999 Compustat database contained in the primary, secondary and tertiary, full coverage and research files. The resulting sample, referred to as the 'full sample', spans the 49-year period from 1950 to 1998. Since this paper addresses patterns in the relation between accounting numbers and cash flows over time, regulated firms (i.e., utilities) for which this relation is affected by unique institutional and regulatory factors were excluded from the…

Time series properties of earnings, cash flows and accruals

In this section, we provide descriptive statistics on the time-series patterns of earnings and cash flows over the last 49 years. While not directly bearing on the issue of conservatism, these statistics are helpful in interpreting some of the findings reported later in the paper. To allow for a cross-sectional aggregation, we deflate all of the flow variables (earnings, cash flows) for each year by the total assets at the beginning of that year. Statistics based on alternative deflators are…

Summary and conclusions

The paper provides evidence on the change in the time-series properties of earnings, cash flows and accruals, suggesting that the relation between accounting earnings and the economic performance of firms is not stable over time. In particular, the results of a series of tests are consistent with a trend of increased reporting conservatism. While each of these tests has limitations, when considered as a whole the results suggest more conservative financial reporting in the last two decades. The …

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