Advances in Accounting xxx (xxxx) xxx–xxx

Contents lists available at ScienceDirect

Advances in Accounting

journal homepage: www.elsevier.com/locate/adiac

Accounting conservatism: A life cycle perspective

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ARTICLE INFO

Keywords:
Accounting conservatism
Conditional conservatism
Unconditional conservatism
Firm life cycle

JEL classification:
M21
M41

ABSTRACT

This paper investigates whether a firm's life cycle stage affects its reporting conservatism in the cross-section. We use two measures of reporting conservatism used in Givoly and Hayn (2000): the level of non-operating accruals and the market-to-book ratio (unconditional conservatism); and the conservatism measure suggested by Basu (1997) (conditional conservatism). Firms are classified annually into life cycle stages using procedures proposed by Dickinson (2011). We find that *unconditional* reporting conservatism decreases over life cycle stages, but do not find evidence that *conditional* reporting conservatism is associated with life cycle stages. Our findings complement Givoly and Hayn (2000) and have implications for financial statement analysis and future research on accounting conservatism.

1. Introduction

This paper investigates whether a firm's life cycle stage affects its reporting conservatism in the cross-section.[1] Our inquiry is motivated by and closely related to Givoly and Hayn (2000) in which they document that financial reporting in the U.S. has become more conservative in the past four decades based on four sets of empirical measures of accounting conservatism that they develop. We argue that reporting conservatism not only can vary over time as documented in Givoly and Hayn (2000) but it can also vary in the cross-section in any given year. More specifically, we examine the cross-sectional variation in reporting conservatism in this paper from a life cycle perspective, and thus complement Givoly and Hayn's (2000) time-series evidence on reporting conservatism.

The life cycle theory of firms prescribes that firms evolve through several distinct life cycle stages. Firms in different life cycle stages exhibit different financial characteristics and require different management skills, priorities and strategies. In particular, the life cycle theory prescribes that a firm should maximize revenue growth early in its life cycle stages in order to create permanent demand or cost advantages over its competitors, which implies that firms would show different cash flow patterns across their life cycle stages. For example, a firm would have negative cash flows from investing and operating activities in the introduction stage as the firm enters the market. However, as the firm reaches the growth and mature stages, the firm would have a positive cash flow from operating activities. Based on the intuition above, Dickinson (2011) develops a proxy for firm life cycle using a firm's cash flow patterns from operating, investing and financing activities.

Conservatism is a long-standing convention in financial reporting, and a multi-dimensional concept. A variety of definitions and measures of accounting conservatism have been developed. For example, Givoly and Hayn (2000) define conservatism as "a selection criterion between accounting principles that lead to the minimization of *cumulative* reported earnings by slower revenue recognition, faster expense recognition, lower asset valuation, and higher liability valuation." Basu (1997), on the other hand, defines conservatism as an asymmetry in reported earnings that respond more quickly and completely to "bad news" than to "good news."

These measures of accounting conservatism can be categorized into two groups: conditional and unconditional conservatism (Beaver & Ryan, 2005). *Unconditional* conservatism (or news independent) means that at the initial recording of assets and liabilities, the accounting process will lead to expected unrecorded goodwill (e.g. accelerating deprecation of property, plant, and equipment above that of economic depreciation). *Conditional* conservatism (or news dependent) means that under negative conditions book values are written down, but under favorable conditions the book values are not written up (e.g. the use of lower of cost or market in inventory valuation).

Givoly and Hayn (2000) develop four measures of accounting conservatism, and demonstrate that financial reporting in the U.S. has become more conservative in the last four decades. Their evidence, however, cannot explain the cross-sectional variation in reporting conservatism in a given

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[1] See Section 2 of this paper, Beaver and Ryan (2005), and Qiang (2007) for a discussion of *Conditional* vs. *Unconditional* Conservatism.

http://dx.doi.org/10.1016/j.adiac.2017.10.001
Received 17 January 2017; Received in revised form 13 September 2017; Accepted 2 October 2017

year. We hypothesize that life cycle stages of firms affect the degree of *unconditional* reporting conservatism of these firms in the cross-section, but the association between life cycle stages and *conditional* reporting conservatism is unclear. Following Dickinson (2011), we classify firm-years into five different stages of their life cycle: Introduction, Growth, Mature, Shake-out and Decline Stage. Our hypothesis is based on the life cycle theory of firms, which suggests that firms should invest more heavily in early life cycle stages (Introduction and Growth Stage) than late stages (Decline Stage) because the marginal return or the market reward to the investment diminishes over life cycle stages. We, thus, believe that firms in the introduction stage are likely to invest proportionately more heavily in research & development (R & D), human capital, organizational change, and capital expenditures than firms in mature or decline stages to create permanent demand and cost advantages.[2] Current U.S. GAAP requires immediate expensing of expenditures on R & D, human capital, and organizational change. This conservative accounting rule hits firms in the introduction stage more severely than it does firms in the mature or decline stages because firms in the introduction stage invest proportionately more in these items than firms in the mature or decline stages *and* because firms in the introduction stage are more likely to increase their investments in these items whereas firms in mature or decline stages are in a steady or declining state. Thus, the book value of equity of firms in the introduction stage likely will be more severely depressed than that of firms in mature or decline stages.[3]

Based on Givoly and Hayn (2000), we measure accounting conservatism using i) the level of negative non-operating accruals; ii) the market-to-book ratio; and iii) a *conditional* measure used in Basu (1997) (detailed below). We, then, compare annual measures of conservatism for each life cycle stage in the cross-section of firms to examine whether accounting conservatism decreases over the life cycle stages as we hypothesize. In addition to the Dickinson (2011) life cycle stages measure, we use firm age as a robustness check.

We conduct our univariate (multivariate) tests on a large sample of 106,874 (106,577) firm-year observations. Our sample spans 25 years from 1988 to 2012. In Fig. 1, we show the annual cross-sectional mean and median conservatism measures for both non-operating accruals and book-to-market. During our sample period, financial reporting in the U.S. has become more conservative up until the late 1990's as suggested by Givoly and Hayn (2000). We find that the mean and median annual non-operating accruals of all firms in each year are negative. Moreover, the mean and median market-to-book ratios of all firms in each year are steadily increasing up until the late 1990's. However, we do not see an obvious trend since the start of the new millennium. Especially during the dotcom bubble and crash period (1999–2000) and the global financial crisis period (2007–2008), conservatism seems to have decreased. Fig. 1 suggests that the time-series changes of conservatism documented in Givoly and Hayn (2000) cannot fully explain the variation in conservatism.

We compare our measures of *unconditional* conservatism annually between firms in different life cycle stages. We find that the mean and median non-operating accruals of introduction stage firms are more negative than those of mature stage firms, which, in turn, are more negative than those of decline stage firms. Similarly, we find that the mean and median market-to-book ratios of introduction stage firms are larger than those of mature stage firms, which, in turn, are larger than those of shake-out stage firms. However, the market-to-book ratios of decline stage firms are larger than those of mature stage firms.[4] These findings are generally consistent with our hypothesis that the degree of

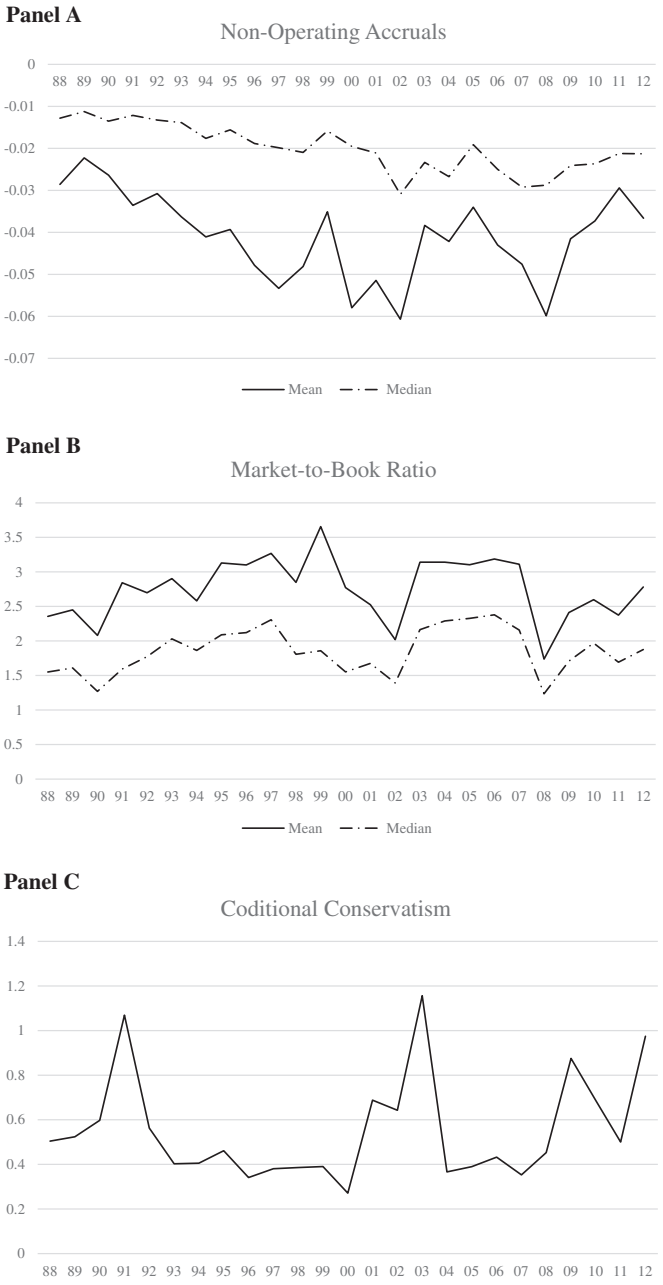

Fig. 1. Intertemporal changes of accounting conservatism.
Panel A: Accounting conservatism measured by non-operating accruals.
Panel B: Accounting conservatism measured by market-to-book ratio over time.
Figures in Panel A and Panel B report conservatism over the sample period from 1988 to 2012. The horizontal axis represents year, and vertical axis represents the mean and median conservatism measured by non-operating accruals (Panel A) and by market-to-book ratio (Panel B).
Panel C: Conditional Conservatism measured by Basu (1997) over time.
The figure in Panel C reports conditional conservatism over the sample period from 1988 to 2012. The horizontal axis represents year, and vertical axis represents the coefficient β_1, a proxy for accounting conservatism, based on the Basu's (1997) following equation:

$$\frac{EPS_{i,t}}{P_{i,t-1}} = \alpha_0 + \alpha_1 {}^{*}DRET_{i,t} + \beta_0 {}^{*}RET_{i,t} + \beta_1 {}^{*}RET_{i,t} {}^{*}DRET_{i,t} + \varepsilon_{i,t}$$

The variables from the equation are defined in Appendix A. The coefficient β_1 measures incremental response to bad news relative to good news. A positive β_1 indicates accounting conservatism. Reported coefficients are cross-sectional regression coefficients for each year.

[2] We omit the comparison for two of the intermediate life cycle stages, growth and shake-out, for brevity and to increase the power of the tests.

[3] A heavy investment in capital expenditures tends to reduce current earnings through depreciation expenses, which in turn reduce current book value of equity.

[4] However, in a multivariate analysis after controlling for other known factors that affect a firm's degree of reporting conservatism, we find evidence supporting an association between a firm's life-cycle stages and conservatism.