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New evidence on the incremental information content of earnings reported using the LIFO inventory method

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ABSTRACT

This study extends prior research by comparing the relative information quality of LIFO earnings and non-LIFO earnings using updated data and methodology. Results suggest LIFO earnings are incrementally informative independent of tax reporting implications. In addition to shedding light on why the results of prior studies present conflicting evidence about the relative information content of LIFO, these findings are important in light of international accounting standards convergence efforts, under which LIFO is currently prohibited.

1. Introduction

The information content of earnings may be assessed according to the impact of its change on stock price, as validated by others in numerous contexts (e.g., Ball & Brown, 1968; Lev, 1989; Nichols, Craig, & Wahlen, 2004; Ohlson, 1995). Financial Accounting Concepts Statement No. 1 states that the objective of financial reporting is to provide decision-useful information to investors (FASB, 1978); hence, the choice of accounting policies for measuring inventory costs and how these choices affect the information content of earnings are important considerations. The Financial Accounting Standards Board (FASB) reports that an important qualitative objective of financial reports is that they should be relevant and timely (FASB, 1980). Since the last-in, first-out (LIFO) cost of goods sold (COGS) reflects more recent input prices, *ceteris paribus*, relative to non-LIFO cost flow assumptions, LIFO net income provides a more timely measure of firm performance.

Several prior studies have investigated this assumption by evaluating the relative earnings quality and information content of the LIFO method of accounting for inventories. Using LIFO note disclosures to recast LIFO into "as if" non-LIFO financial reports, Jennings, Simko, and Thompson (1996) document that LIFO income statements explain more of the cross-sectional variation in equity values than their "as if" non-LIFO counterparts. Carroll, Collins, and Johnson (1991) compare before and after earnings response coefficients (ERCs) for LIFO adopters and find evidence of post-adoption increases, in support of the suggestion that LIFO provides incremental information content. In contrast, Pincus and Wasley (1996) identify post-LIFO adoption decreases in ERCs. Neither of these studies attempt to control for taxes and other factors that have been demonstrated to affect the returns and earnings relation, perhaps contributing to these conflicting findings.

Biddle and Ricks (1988) and Hand (1995) investigate excess returns around earnings announcements dates of LIFO adopters. Biddle and Ricks (1988) document a positive bias in earnings forecasts and report negative two-day excess returns. In contrast, after considering the impact of pre-earnings disclosures, Hand (1995) finds returns are dependent upon where firms are listed and whether earnings forecasts are explicitly LIFO- or FIFO-based. Hand (1995) also reports positive ERCs around adopting firms' earnings announcement dates.

Lee (1988) documents that in spite of the income-reducing effects of LIFO, firms using LIFO tend to have higher earnings-to-price ratios than non-LIFO firms, a result that Dhaliwal, Trezevant, and Wilkins (2000) investigate and find is attributed largely to highly correlated omitted variables, expected growth and firm leverage.

In a follow-up study, Lee (1989) proposes a tax effect hypothesis to assert that in periods of rising prices tax savings under LIFO should have value enhancing consequences. He finds that during the inflationary 1970 to 1980 period, LIFO firms earn excess returns vis-à-vis FIFO firms. There is, however, no significant difference in returns during the low inflation years from 1962 to 1971.

This study contributes to these prior findings by investigating the relative information content of LIFO and non-LIFO earnings using updated data and methodology including additional controls for taxes. In addition to shedding light on why the results of prior studies may conflict, the study's findings are important in light of international accounting standards convergence efforts, under which LIFO is currently prohibited. In her February 2010 press release, Chairwoman Mary Schapiro reaffirmed the Securities and Exchange Commission's (SEC) commitment to the convergence of U.S. Generally Accepted Accounting Principles (GAAP) with International

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Financial Reporting Standards (IFRS-SEC, 2010). Implementation of IFRS could begin as early as 2015.[1]

Results of this study provide evidence that the impact of LIFO earnings changes on stock prices is greater than those for non-LIFO earnings changes. In particular, after controlling for tax benefits and other factors, we document an incremental increase in the slope of the earnings-returns coefficient for LIFO firms, suggesting that LIFO earnings may be incrementally informative. This suggests shareholders benefit from firms' use of LIFO, ergo the prohibition of LIFO under IFRS may be detrimental to shareholders.

This paper is organized as follows. The following section provides background and develops the study's hypotheses. The study's sample selection and methodology are described next, followed by a presentation of results, and a discussion of findings.

2. Background and hypotheses development

Relative to non-LIFO cost flow assumptions, LIFO net income (cost of goods sold — COGS) tends to be lower (higher) when inventory costs rise. Hence, incentives related to correspondingly lower taxes largely motivate firms' use of LIFO. To enhance comparability between LIFO and non-LIFO based financial reports, firms using LIFO must disclose in the notes what ending inventory (and by extension COGS) would have been if the company had used the first-in, first-out (FIFO) method. The difference between LIFO inventory reported on the face of the balance sheet and the "as if" FIFO inventory reported in the note disclosure is described as the "LIFO reserve." Since the difference between LIFO and FIFO inventory directly corresponds (inversely) with the difference between LIFO and FIFO COGS, the LIFO reserve represents the total amount that a firm's net income has been reduced since its adoption.

In juxtaposition with the current international movement towards a global unification of accounting standards, there has also been considerable domestic political debate regarding the potential repeal of LIFO. Arguments for its abolishment include that certain industries with little or no COGS are unable to avail themselves of the potentially favorable tax effects of LIFO; hence, non-LIFO firms are unfairly penalized. Further, by reducing the number of alternative accounting treatments available to firms, eliminating LIFO could enhance financial reporting comparability. The most recent 2012 Budget Proposal from the Obama administration includes the repeal of LIFO. Indeed, this provision has been included in all budgets submitted by the Obama Administration. Although Congress has yet to act on the proposed repeal of LIFO, pressure for its passage may be increasing. The administration projects eliminating LIFO would increase tax revenue by $59 billion over ten years.[2] Opponents assert that the tax effect on certain industries could be unprecedented. Although the arguments for and against LIFO's repeal are compelling on both sides from a tax reporting perspective, an additional consideration is the potential effect that its abolishment would have on the information quality of financial reporting earnings.

One argument supporting the contention of higher LIFO earnings quality is that since COGS reflects recent input prices, LIFO earnings are a more temporally useful measure of firms' economic performance, a contention examined by prior research with conflicting results (e.g., Biddle & Ricks, 1988; Carroll et al., 1991; Dhaliwal, Lee, & Fargher, 1999; Hand, 1995; Lee, 1988; Pincus & Wasley, 1996). Another rationale regarding the choice between LIFO and non-LIFO relates to managers' private operational expectations in juxtaposition with their perceptions of investors' reactions to reported earnings. That is, managers' expectations about future economic performance in conjunction with their sensitivity to perceived investors' reactions to earnings surprises affects the choice between LIFO or non-LIFO. When managers' private operational expectations are low (high), the perceived need to forgo (realize) tax savings and increase (decrease) earnings with non-LIFO (LIFO) accounting is greater, therefore the general tendency to use non-LIFO increases (decreases) with the pessimistic (optimistic) expectations of the manager. In support of this expectation, Brown (1980) documents that companies changing to LIFO have better pre-adoption earnings than non-change companies. On the other hand, Pincus and Wasley (1996) show that while changes to non-LIFO are generally income-increasing, firms' report lower sales and income prior to the switch. They also find that non-LIFO adopters have higher (lower) debt to equity (interest coverage) ratios and argue that managers use non-LIFO accounting to mask poor performance. Of course, a firm's choice of LIFO may simply be intended to reflect the economic substance of its inventory cost flows; prior studies provide evidence that industry membership is associated with the use of LIFO (Hagerman & Senbet, 1976).

Since the use of non-LIFO is costly to the firm in the form of forgone tax benefits, *ceteris paribus*, its choice may connote a negative earnings quality signal.[3] In accordance with the above studies that suggest the motivation for using non-LIFO accounting may be inversely (positively) related to managers' performance expectations, we contend that using FIFO provides an opportunity for firms to manage earnings higher and changes in LIFO earnings may be perceived by the market as more credible than changes in non-LIFO earnings. We test this assertion with the following hypothesis:

H1. Relative to non-LIFO accounting, using LIFO increases the impact of earnings changes on stock returns.

Abdel-Khalik (1992) argues, "We continue to be relatively uninformed about these issues and know little about the real reasons that many firms do not switch to LIFO when it appears that they would benefit by the positive tax savings." Pincus (1997) shows positive abnormal returns for firms having the largest estimated tax benefits subsequent to the implementation of The Revenue Acts of 1938 and 1939. Fields, Lys, and Vincent (2001) state that prior to the 1990s, research regarding the effect of taxes on the choice between LIFO and FIFO was inconclusive. Dhaliwal et al. (2000) provide evidence of a negative relation between the amount of the tax-adjusted value of the LIFO reserve and market value of equity and explain that the LIFO reserve represents a future tax burden. Tax incentives are a potentially significant factor favoring the choice of LIFO, therefore an increase in the LIFO coefficient could merely be the result of built-in tax savings. Since taxes generally correspond with net income levels, the tax effect on the LIFO earnings coefficient should subside for net loss firms; hence, the information content of LIFO is asymmetric comparing income and loss firms. We hypothesize:

H2. For firms reporting net losses, LIFO accounting increases the impact of earnings changes on stock returns.

Generally the Internal Revenue Code permits corporations to carry losses back over either or both of the prior two years.[4] Accordingly, despite reporting current year losses, tax benefits could still exist as LIFO firms realize current period refunds for taxes paid in prior profitable years. Therefore, in addition to our primary test for loss firms we also evaluate the effect of the carry-back provision on our analysis by testing the following hypotheses:

H3. For firms reporting net losses in the current year but positive net income in either or both of the preceding two years, LIFO accounting increases the impact of earnings changes on stock returns.

[1] See http://www.sec.gov/spotlight/globalaccountingstandards/workplanprogress102910.pdf, accessed September 7, 2012.

[2] Available at: http://www.whitehouse.gov/omb/budget/, accessed September 7, 2012.

[3] Our assumption presumes potential non-tax related benefits associated with maintaining non-LIFO accounting vary randomly across firm observations and accordingly, do not impact the study's results.

[4] IRC section 172(b)(1)(A)(i).