

LOWER TAXES OR HIGHER EXECUTIVE BONUSES: HOW INVENTORY VALUATION CHOICES BEST EXHIBIT US CORPORATE GOVERNANCE FAILINGS

Kevin A. Diehl*

Abstract

This research seeks to update and finally determine for the Fortune 500 whether the market values the inventory valuation choice of last-in, first-out (LIFO) over first-in, first-out (FIFO) as some signal of reporting and management quality. The market can adjust LIFO earnings to FIFO earnings. Thus, the only issue then is that companies choosing FIFO pay higher taxes, which shareowners should disfavor. Indeed, only 20 percent of the Fortune 500 utilize LIFO to value any inventory. However, after Spearman correlations and logistic regression, the research statistically significantly shows that investors are willing to give premiums on the price of stock for the choice of LIFO. Thus, companies should choose LIFO to reduce taxes and increase their stock prices.

Keywords: Taxes, Executive Bonuses, Corporate Governance

* Western Illinois University (US), 3561 60th Street, Moline, IL 61265
Tel.: (309) 762-3999, Extension 62297
E-mail: KA-Diehl@wiu.edu

Introduction and Literature Review

This research for the first time seeks to update and finally determine for the Fortune 500 whether the market values the inventory valuation choice of last-in, first-out (LIFO) over first-in, first-out (FIFO) as some signal of reporting and management quality. The choice between FIFO and LIFO inventory valuation has long been troublesome under US GAAP. For financial accounting purposes, the theory is that the choice enables companies properly to match their inventory accounting to the inventory's actual physical movement (Cook *et al.*, 2007). However, in application, the choice of FIFO has become grounds for earnings management (Cook *et al.*, 2007).

Whatever choice is made for financial accounting purposes must also be utilized for tax purposes. In periods of increasing prices, LIFO reports higher cost of goods sold and therein lower net income. However, it also results in lower taxes (Sunder, 1975). In periods of increasing prices, FIFO reports lower cost of goods sold and therein higher net income. Executives and the directors who review their actions should favor LIFO as it generally decreases taxes payable to the government, therein benefiting the companies (Hughes and Schwartz, 1988). In fact, as Hughes and Schwartz (1988) remark, the companies utilizing FIFO are costing themselves billions of dollars annually in total. However, these executives and directors tend to favor FIFO as it generally increases reported earnings and

therein executives' bonuses and directors' equity-based compensation (Morse and Richardson, 1983).

From the reported earnings perspective, the market should not care as required disclosures permit investors to adjust LIFO earnings to FIFO earnings (Biddle and Lindahl, 1982). However, from the perspective of evaluating the overall management teams, investors should favor companies that select LIFO as it does decrease taxes payable to the government and can be adjusted to FIFO for comparing reported earnings (Biddle and Lindahl, 1982).

The problem is best illustrated through the low percentage of Fortune 500 companies that select LIFO. As this current research pursuit shows, only 20 percent of the Fortune 500 report utilizing the LIFO method for any part of their inventory.

There are some limitations on the choice of LIFO that lead to this low percentage. Because International Financial Reporting Standards (IFRS) do not permit the utilization of LIFO, there is some efficiency benefit from utilizing FIFO for valuing all the inventory of international companies (Fosbre *et al.*, 2010). However, the higher tax cost from not utilizing LIFO for domestic reporting is greater than the cost saved for standardizing global inventory reporting from choosing FIFO.

Companies with higher leverage ratios tend to disfavor LIFO as this method does tend to report lower earnings (Gul, 2002). Creditors establish ratio numbers necessary to stay solvent under the debt contracts (Gul, 2002). Thus, to increase their odds of

satisfying these ratios, companies choose the higher earnings reporting methodology, FIFO, (Gul, 2002). Indeed, staying solvent to remain in business should be an important objective for any company (Gul, 2002). In fact, Hughes and Trezevant (1998) find that companies that move to LIFO begin lowering their debt levels because of the implications of higher cost of goods sold reported under LIFO and its influence on the ease with which debt contracts are satisfied.

Whether investors value the choice of LIFO over FIFO is tested through Spearman correlations and logistic regression with the choice of LIFO designated as 1 and the choice of FIFO designated as 0. The other variables are the number of financial experts on the board of directors, the number of public accounting experience directors, the percentage change in price to earnings per share during the 2004 to 2009 time period, the ln of total assets during those years, and the average debt to equity ratio during the 2004 to 2009 time period. The sample is the Fortune 500, which at least one other prominent researcher has consistently utilized (Yermack, 1997; Yermack, 2004). As various supporting data has to be hand collected, this sample size is efficient but still robust (Yermack, 1997; Yermack, 2004).

The choice of LIFO is shown to be directly statistically significantly correlated to the percentage change in price to earnings per share between 2004 and 2009. This finding supports the hypothesis that investors are willing to give premiums on earnings of companies utilizing LIFO because of the quality of reporting (more conservative earnings reporting choice and therein showing the lack of earnings management in at least this regard) and the quality of the executives and directors in favoring the interests of the company over their own.

However, the choice of LIFO is inversely statistically significantly related to the presence of public accounting experience on the board of directors. This fact is qualified as it is discovered that the public accounting experience on boards tends to be from auditing, not tax, backgrounds. Thus, the public accountants expectedly favor the method that reports higher earnings as it is in their self-interest to the extent of their director equity compensation to report the higher earnings. It is also in keeping with their general experience with the executives of their audit clients who have tended to favor the choice of FIFO for their bonus reasons as well.

The choice of LIFO is also inversely statistically significantly related to average debt to equity during the 2004 to 2009 time period. This fact supports the importance to executives and directors who review their actions of choosing the higher earnings reporting method, FIFO, to make meeting debt contracts easier.

Hypothesis

Investors are willing to give premiums on the price of stock for companies that choose LIFO to report at least some of their inventory.

The measure for this test is whether the choice of LIFO is directly statistically significantly related to the percentage change in price from 2004 through 2009 and is inversely statistically significantly related to the percentage change in earnings per share from 2004 through 2009 decreases. Separating the two variables from the normal price to earnings or earnings to price ratios permits increased evidence of the presence of this investor willingness to pay higher price to earnings per share ratios or lower earnings per share to price ratios, which would signal proof of this hypothesis.

The reason that investors would pay more is because of the higher quality of earnings. LIFO is more conservative than FIFO with regard to earnings. The other reason is that choosing LIFO signals quality executive management and director review of company activities. LIFO does result in lower taxes payable to the government.

The control variables involve the number of financial experts on the board, the number of directors with public accounting experience, the ln of average total assets during 2004 through 2009, and the average debt to equity ratios during 2004 through 2009. As the number of financial experts qualified under Sarbanes-Oxley on the board increases, the expectation is that the choice of LIFO would decrease. The reason is that, better knowing the accounting rules under US GAAP, financial experts would likely emphasize higher reported earnings from FIFO rather than LIFO. Despite investors favoring LIFO, directors still tend to believe the quality of their review of executives' actions is based on whether the respective company is showing growing earnings, which is easier to do under FIFO.

As the number of directors on the board with public accounting experience increases, the same expectation exists that the utilization of LIFO would decrease. The same reasoning is applicable as well. There would be some overlap between financial experts and public accounting experience. However, financial experts would include more individuals. The public accounting experience in particular is included as well to indicate whether the precise knowledge of the auditing process and the accounting rules would lead to greater reluctance to utilize LIFO.

The ln of average total assets acts as the control on whether larger companies tend to select any method in particular compared to smaller companies. The average debt to equity ratios are included as the control on higher leveraged companies tending to disfavor LIFO based on the increased difficulty of satisfying debt contracts.

Methodology and Data Set

Whether investors value the choice of LIFO over FIFO is tested through Spearman correlations and logistic regression with the choice of LIFO designated as 1 and the choice of FIFO designated as 0. The other variables are the number of financial experts on the board of directors, the number of public accounting experience directors, the percentage change in price to earnings per share during the 2004 to 2009 time period, the ln of total assets during those years, and the average debt to equity ratio during the 2004 to 2009 time period.

$$\text{LIFO} = \beta_0 + \beta_1 \text{FinExp} + \beta_2 \text{PubAcct} + \beta_3 \% \text{DPr} + \beta_4 \% \text{DEPS} + \beta_5 \ln \text{Assets} + \beta_6 \text{AveD/E} + \epsilon \quad (1)$$

The sample is the Fortune 500, which at least one other prominent researcher has consistently utilized (Yermack, 1997; Yermack, 2004). As various supporting data has to be hand collected, this sample size is efficient but still robust (Yermack, 1997; Yermack, 2004). For the logistic regression, Fortune 500 companies that utilize LIFO are paired with Fortune 500 companies that do not utilize LIFO. Companies are paired based on standard industrial code (SIC) and then based on ln of total assets within the same SIC.

Results

Tables 1 and 2 show the following information. The choice of LIFO is shown to be directly statistically significantly correlated to the percentage change in price to earnings per share between 2004 and 2009. Spearman correlations have it at .176 statistically significant at the .05 level for %DPr and -.192 statistically significant at the .01 level for %DEPS.

Logistic regression has the same results with 3.120 statistically significant at the .05 level for %DPr and -1.109 statistically significant at the .01 level for %DEPS.

These findings support the hypothesis that investors are willing to give premiums on earnings of companies utilizing LIFO because of the quality of reporting (more conservative earnings reporting choice and therein showing the lack of earnings management in at least this regard) and the quality of the executives and directors in favoring the interests of the company over their own.

However, the choice of LIFO is inversely statistically significantly related to the presence of public accounting experience on the board of directors. Under Spearman, it is -.263 at the .05 level of statistical significance, and, under logistic regression, it is -2.793 at the .05 level of statistical significance.

These results are qualified as the public accounting experience on boards tends to be from auditing, not tax, backgrounds. Thus, the public accountants expectedly favor the method that reports higher earnings as it is in their self-interest to the extent of their director equity compensation to report the higher earnings. It is also in keeping with their general experience with the executives of their audit clients who have tended to favor the choice of FIFO for their bonus reasons as well.

The choice of LIFO is also inversely statistically significantly related to average debt to equity during the 2004 to 2009 time period. This result is shown only through the logistic regression with -2.603 at the .01 level. This fact supports the importance to executives and directors who review their actions of choosing the higher earnings reporting method, FIFO, to make meeting debt contracts easier.

Table 1. Spearman Correlations

	LIFO	FinExp	PubAcct	%DPr	%DEPS	lnAssets	AveD/E
LIFO	1.00						
FinExp	-.105 (.152)	1.00					
PubAcct	-.263** (.030)	.129 (.294)	1.00				
%DPr	.176** (.013)	-.056 (.443)	.004 (.973)	1.00			
%DEPS	-.192*** (.007)	.013 (.856)	.347*** (.004)	.170** (.016)	1.00		
lnAssets	-.013 (.860)	.067 (.364)	.068 (.583)	.121* (.089)	.059 (.405)	1.00	
AveD/E	-.015 (.839)	.003 (.970)	-.180 (.149)	-.077 (.283)	-.119* (.096)	-.060 (.401)	1.00

*** Statistically significant at the .01 level; ** statistically significant at the .05 level; * statistically significant at the .10 level. LIFO stands for choice of LIFO to value any inventory. FinExp represents the number of Sarbanes-Oxley qualified financial experts on the board of directors. PubAcct stands for the number of directors on the board with public accounting experience. %DPr represents the percentage change in price from 2004 through 2009. %DEPS stands for the percentage change in earnings per share from 2004 through 2009. lnAssets represents the ln of total assets on average over those years; AveD/E stands for the average debt to equity ratio during those years.

Table 2. Logistic Regression

Variables	Predicted Signs	Estimated Coefficients (x ²)
Intercept	?	10.428 (5.386)
FinExp	-	-0.637 (2.501)
PubAcct	-	-2.793** (3.966)
%DPr	=	3.120** (5.753)
%DEPS	-	-1.109*** (8.747)
lnAssets	?	-0.208 (.322)
AveD/E	-	-2.603*** (11.066)
Observations		200
Likelihood ratio		47.612
Pseudo R ²		.632

*** Statistically significant at the .01 level; ** statistically significant at the .05 level; * statistically significant at the .10 level. LIFO stands for choice of LIFO to value any inventory. FinExp represents the number of Sarbanes-Oxley qualified financial experts on the board of directors. PubAcct stands for the number of directors on the board with public accounting experience. %DPr represents the percentage change in price from 2004 through 2009. %DEPS stands for the percentage change in earnings per share from 2004 through 2009. lnAssets represents the ln of total assets on average over those years; AveD/E stands for the average debt to equity ratio during those years.

Implications

To get to 100 percent compliance with the LIFO choice domestically for valuing inventory, shareowners should propose for vote at each company's annual meeting that the board be required to enforce executives' choice of LIFO over FIFO as it enhances the value of the company. The choice of LIFO does so through reduction of taxes payable to the government.

Boards on their own should implement the requirement that executives' compensation be based on numbers adjusted to LIFO, therein encouraging executives to take on LIFO and simultaneously denying any benefit to bonuses from the choice of FIFO to show higher earnings.

Likewise, boards and executives should lobby government or the financial industry itself to have financial ratios in debt contracts be based on LIFO numbers. As such, the financial industry should be willing to give greater leeway in the ratios as the LIFO method is more conservative in reporting.

In the end then, the choice of LIFO is more efficient for companies. Thus, compensation and debt contracts should be based on LIFO numbers.

References

- Biddle, G. C., and Lindahl, F. W. (1982), "Stock price reactions to LIFO adoptions: the association between excess returns and LIFO tax savings," *Journal of Accounting Research*, 20, pp. 551-588.
- Cook, K., Huston, G. R., and Kinney, M. (2007), "Managing earnings by manipulating production: the effects of cost structure and inventory valuation method," Working Paper, Texas.
- Fosbre, An., Fosbre, Pa., and Kraft, E. (2010), "Roadblock to US adoption of IFRS is LIFO inventory valuation," *Global Journal of Business Research*, 4, pp. 41-49.
- Gul, F. (2002), "Free cash, debt-monitoring, and managers' LIFO/FIFO policy choice," *Journal of Corporate Finance*, 7, pp. 475-492.
- Hughes, P. J., and Schwartz, E. S. (1988), "The LIFO/FIFO choice: an asymmetric information approach," *Journal of Accounting Research*, 26, supplement, pp. 41-58.
- Hughes, P. J., and Trezevant, R. (1998), "The capital structure and LIFO/FIFO choices: tests of cash signaling and tax-shield substitution," Working Paper, California.
- Sunder, S. (1975), "Stock price and risk related to accounting changes in [the] inventory valuation," *The Accounting Review*, 50, pp. 305-315.
- Yermack, D. (1997), "Good timing: CEO stock option awards and company news announcements," *Journal of Finance*, 52, pp. 449-476.
- Yermack, D. (2004) "Remuneration, Retention, and Reputation Incentives for Outside Directors," *Journal of Finance*, 59, pp. 2281-308.