SHOULD LAST IN FIRST OUT INVENTORY VALUATION METHODS BE ELIMINATED?

Peter Harris, New York Institute of Technology

ABSTRACT

The Last in First out Method (LIFO) is presently under severe scrutiny from the financial community which may soon culminate in its repeal as an acceptable accounting method. There are pressures from the SEC in conjunction with the International Financial Accounting Standards Board to standardize accounting standards worldwide. In addition, there is political pressure imposed by the US Obama administration to raise additional revenues. Both groups strongly oppose LIFO, raising a strong possibility that's its complete elimination as an accounting method will occur by as early as 2014. Are these groups correct in their negative assessment of LIFO? This paper examines critically the many disadvantages of LIFO. Ultimately, the author theorizes that these negatives may collectively explain the observed research findings of the inverse relationship between LIFO adoption and firm value/stock price. The elimination of LIFO which seems imminent may result in a win-win situation for all; as the negative and added costs of LIFO may well exceed its tax advantage, resulting in greater cash flow for the firm, while allowing for the standardization of worldwide accounting standards and raising additional tax revenue for the US government.

JEL: M4, M40, M41, M48, M49.

KEYWORDS: GAAP, IFRS, LIFO, LIFO, LIFO Conformity LIFO Reserve, FIFO.

INTRODUCTION

The Last in First out (LIFO) method has been an acceptable, popular accounting method since its inception in 1939. Since then, many have and continue to argue against LIFO as a viable, economic, realistic accounting method. At present, LIFO faces a strong and real possibility of its elimination by the year 2014, as political forces coming from the International Financial Accounting Standards Board and the Obama administration strongly oppose this method. The International Financial Reporting Standards (IFRS) prohibit LIFO as an acceptable accounting method, and the Obama administration has proposed in its 2010 budget to repeal LIFO altogether in the future. Part 2 will present a literature review and empirical findings, Part 3 will address the issues associated with LIFO Valuation .An overview of the three accounting methods are presented ,followed by the current state of LIFO .The disadvantages of LIFO are then reviewed in detail ,in support of its eliminations, and include: the "tax loophole" only aspect of LIFO, lax LIFO conformity requirements, faulty inventory asset management decision making processes ,covenant agreement compromises ,possible income manipulation, added administration cost requirements, lack of internal uses of LIFO, balance sheet and income statement limitations along with fictitious inventory flow assumptions, political and international opposition, and finally, the reasons for the observed negative relationship between LIFO adoption and stock price behavior. Part 4 will review the future of LIFO and with recommended tax strategies, and Part 5, the conclusion section will also address the limitations of this paper and recommended areas for future research.

LITERATURE REVIEW

The tax advantages associated with LIFO have been documented by tax laws, research, literature and Congress. Internal Revenue Code (IRC) 472 allows for the Last in First Out method of inventory since its inception date in 1939. Computationally, as the price of inventory increases, lower income will result

under LIFO when compared to all other inventory methods, resulting in a lower tax payment. This tax advantage has led to the criticism of LIFO resulting in an unfair tax loophole advantage for a few beneficial industries, leading to poor and inefficient management of inventories and finally flawing the balance sheet presentation.

Plesko (2006), has labeled LIFO as a "tax holiday" for the few. While, Sondhi and White (2008), state that due to the tax advantages associated with LIFO resulting in greater cash flows, the choice of inventory method should point towards LIFO. Shackelford and Sheulin (2001) have documented the tax motivated effect of LIFO. Dopuch and Pincur (1988) found that the taxation effect was the primary reason a company chose LIFO.

Many question as why a company would choose a method other than LIFO if there is a tax benefit potential. Biddle (1980) "found surprising that many firms potentially paid tens of thousands of dollars by continuing to use FIFO rather than switching to LIFO". The accounting review, editorial comments section (1992) stated: "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 positive tax savings". White, Sondhi and Fried, (2008), theorize that perhaps management does not accept the Efficient Market Hypothesis theory, as the major explanation for not adopting LIFO.

Congressman Charles Rangel (2007) has called for the repeal of tax loopholes citing LIFO as a material culprit in this area. The US government estimates a loss of over $100 billion of tax revenue over the next ten years if LIFO is not repealed. Further, Secretary Paul O'Neill and Edmund Jerkins reported in 2001 that the LIFO conformity requirement was not in practice taking place, thereby allowing these LIFO companies to obtain both; a tax benefit as well as a financial statement presentation benefit.

The tax advantages of LIFO are dependent on inventory additions or buildups, known as reserves at increasing prices. This has resulted in poor inventory asset management and suboptimal business behavior. Trackel and Trezevant (1994) examined year end purchasing decisions by firms as a function of their inventory methods and concluded that firms using LIFO make additional year end purchases which appear to be for tax reasons leading to inventory management inefficiencies.

Lastly, LIFO is not balance sheet friendly and can and will result in a gross understatement of balance sheet value given the tax motivated behavior. Romeo (2009) observed that most oil companies report inventory purchased before World War II on their balance sheet. Kieso, Waygandt and Warfield illustrate the shortcomings of LIFO, as the inventory value reported on the balance sheet does not represent its current replacement value. The result is that a LIFO presented balance sheet cannot, and should not be used for financial statement analysis purposes.

The literature studying the effects of LIFO adoption and stock price effects is inconsistent. Ricks (1974) concluded that LIFO adaptors suffered negative abnormal return performance during the period surrounding the annual earnings announcement. Kang, (1993) concluded that there is no indicator of LIFO adoption related abnormal returns and the size of potential nominal tax savings. Stevenson (1987) however found that firms which adopt LIFO experience an increase in stock value. Biddle and Linadl (1985) found that stock price reactions to LIFO adoption are inconclusive. Note should be made that the Ricks study is the largest of companies made to date (over 400 during the 1974-1975 period)and most of the literature points to an inverse relationship between LIFO adoption and stock price effects.

Issues Associated with LIFO Valuation

Presently, there are three acceptable inventory methods under U.S. Generally Accepted Accounting Principles (GAAP) and include: Last in First out (LIFO), First in First out (FIFO) and the weighted

average or average cost methods. Under international Financial Reporting Standards (IFRS), LIFO is not a permissible method. LIFO assumes that the last or most recent purchases of inventory are sold first. FIFO assumes that the first inventory purchases are sold first and the weighted average method weights the entire inventory on the basis as one unit cost in its inventory valuation base. (See Appendix 1 for an illustration of the inventory methods).

LIFO is facing pressures from both: the International Reporting Standards Board in cooperation with the SEC and the U.S. Congress for its possible complete elimination by the year 2014. On November 15, 2007, the Securities and Exchange Commission (SEC) exempted foreign firms from including reconciliation from International Financial Reporting Standards (IFRS) to U.S Generally Accepted Accounting Principles, (U.S. GAAP) when filing on U.S. Stock exchanges. Foreign public firms are now permitted to file using the International Financial Reporting Standards (IFRS) without reconciliation to U.S. GAAP as previously required. This move has created a mandate to converge IFRS and U.S. GAAP and financial statement requirements (SEC, 2007)

On June, 18, 2008 the SEC issued a press release stating that the world's securities regulators are uniting to increase their oversight of international accounting standards. There are plans set forth by the SEC and the IFRS to standardize accounting standards, on a worldwide basis with a target date set for periods ending after December 31, 2014. Under IFRS rules, LIFO is not a permitted acceptable accounting method. IFRS is balance sheet oriented and on this basis, disallows LIFO as an inventory method. The use of LIFO disrupts the theoretical foundation of the IFRS and if plans proceed as expected, complete phase out of LIFO will occur in the near future.

More importantly is the current tax position on LIFO. The Obama Administration has proposed in its 2010 budget to repeal LIFO altogether in an attempt to generate greater tax revenues. Given the ongoing and increasing international opposition to LIFO, coupled with the current spiraling US federal deficit, its support base is very unstable. Below, we address the many limitations of LIFO.

Tax Loophole

The primary reason LIFO is adopted by companies is the tax advantage inherent in this method (Dopuch and Pircus, 1988). In inflationary periods, a common scenario, LIFO will produce the lowest income when compared to other inventory methods, resulting in the lowest tax payment. The problem here is that very few can benefit from this tax advantage. To obtain the tax benefit, two elements have to be satisfied. First, increasing inventory prices and second, a build up or increase in inventory, known as a LIFO reserve. This will result in expensing the most current higher cost inventory purchases against revenues, resulting in the lowest possible income total. The question is; who are these beneficiaries?

Oil and gas producers, commodities firms, such as steel and chemical companies, plastic and specialty retailers such as fabric related and drug stores are the biggest beneficiaries of LIFO. Industries possessing inventories which are obsolete in nature and/or sold quickly (high turnover) and/or perishable, cannot benefit from LIFO adoption. The chip, computer, software and other high tech industries are such examples, so they choose either FIFO or the weighted average method.

Exxon – Mobil is the most profitable company in the world and possesses by far the highest level of LIFO reserve. LIFO reserve is the difference between the values of FIFO inventory over the reported LIFO amount. Exxon-Mobil's LIFO reserve is over $25 Billion, which in effect results in a tax postponement or tax loophole of approximately $9 Billion ($25 Billion x 35 tax rate) .Of the top LIFO reserve companies, most are oil and gas producers, while Sunoco for example has a LIFO reserve in excess of its Stockholders Equity Value (Compustat) . Another observation is that the LIFO reserve totals have been increasing over time since its inception in 1939. Clearly, the tax benefits are being realized in a more

profound manner. Cushing and Le Clere (1992) found that the tax advantage is the primary reason for LIFO, and Dopuch and Pircus (1988) found: "that the long term FIFO firms in our sample have not been forgoing significant tax savings in which case remaining on that method is certainly consistent with FIFO being an optional tax choice, given other considerations. In contrast, long-term LIFO firms would have forgone significant tax savings".

The argument that is made then is that the very few benefit from the LIFO tax advantage, and as stated above the beneficiaries are the most profitable industries, at the expense of many. The US government has estimated that presently only about 4% of publically traded companies use LIFO and that the corporate tax rate of 35% can be reduced to 30.5% if all of the corporate tax loopholes such as LIFO were eliminated.

Another problem with LIFO use in the oil industry is its inherent assumption does not match the true physical flow of goods. LIFO assumes that the last units are sold first. This is not true for the oil or commodities industries where the true physical flow of goods is on a weighted average basis. The economics flow of oil products contradicts the tax method, as well as the accounting method which leads to the argument that the presentation of financial data by the oil industry is flawed, and not indicative of economic reality.

Tax Conformity Rule and Its Easing Requirements

In an effort by Congress to counteract the tax benefit inherent in LIFO, the LIFO conformity rule was passed upon inception, requiring users of LIFO for tax purposes to also adopt LIFO for financial statement purposes, effectively showing lower income amounts in their financial reporting.

The problems with this requirement is first ,by virtue of the Efficient Market Hypothesis, which has been supported and documented by research (Fama, 1970), a poorer financial reporting scenario based solely on an accounting method, does not hurt or negatively impact a company's stock price. The major reason for this is that if a financial user can adjust one method to another and understand its impact on the financial statements, then a choice of overstating income based on a choice of accounting methods is simply cosmetic, and not real. Stock prices are impacted on real events and not cosmetic as would be the case of higher earnings reporting solely by choosing FIFO over LIFO.

Adjustments from LIFO to FIFO

A company reporting under the LIFO method is required under the U.S. GAAP to disclose a "LIFO reserve" amount. The LIFO reserve is simply the difference of FIFO inventory valuation over LIFO (See Appendix 4). As an example, in year 1 if a company uses LIFO and its income before tax is $200, and its ending inventory is $600, and given a $10 LIFO reserve total, then the presentation of a financial statement on a FIFO basis is quite simple and is based on the following calculation: FIFO = LIFO + LIFO reserve. FIFO will result in a $10 greater inventory total as well as a $10 pretax total as disclosed by the LIFO reserve. Consequently, pretax income under FIFO would be $110 and the ending inventory under FIFO would be $610. The conversation from LIFO to FIFO is simple, and by virtue of this, the difference in income between the LIFO and FIFO method is cosmetic and easily calculated. However, the tax advantage of LIFO use is real, as the cash amount will be greater due to a lower tax payment. The result here is that the LIFO conformity rule does not negatively affect a company or its stock price while retaining the "real" tax benefit.

Lax Tax Conformity Application

A second problem with the LIFO conformity rule is that it has become lax in its application over time. The result is the creation of a tax conformity loophole by LIFO users In an April 13, 2001 letter to Secretary Paul H. O'Neill, Edmund Jenkins, then serving on the Financial Accounting Standards Board, argued for repealing LIFO conformity because conformity was not, in practice, taking place. Specifically, Mr. Jenkins stated. The level of conformity that is in fact achieved may well be illusory. The background section of Accounting Series Release (ASR 293) reports the following:
"On January 13, 1981, the IRS published amended regulations concerning the LIFO conformity rule. For many years, the IRS strictly enforced the conformity rule and required companies to apply LIFO in most cases identically for books and tax purchases and did not permit companies to disclose supplemental information about alternative methods of inventory pricing. The Commission considers two aspects of the IRS amendments to be significant: (1) companies may apply LIFO differently for book purposes than for tax purposes as long as they use an acceptable form of LIFO; and (2) companies may provide supplemental non – LIFO disclosures if they are not presented on the face of the income statement" (Plesko, 2006).

FAULTY BUSINESS MAKING CRITERIA AND INCOME MANIPULATION POTENTIAL

Increasing physical inventory totals lead to added costs, which results in poor inventory management. Carrying costs such as storage, insurance, maintenance, interest and obsolescence are associated with high levels of inventory. LIFO by virtue of its inherent tax advantage encourages buildup in inventory amounts which results in higher cost and poor asset management decisions criteria.

Frankel and Trezevant (1994) examined the year-end purchasing decisions of firms as a function of their inventory accounting methods and tax status and report "(1) high-tax LIFO firms are more likely to purchase extra inventory at year-end than low-tax LIFO firms, (2) LIFO firms are more likely to purchase extra inventory than FIFO firms, and, by contrast, (3) FIFO firms do not show differences in purchasing that are related to their tax status. The authors concluded based on their findings "that additional year-end LIFO inventory purchases appear to be made for tax reasons suggests that permitting the LIFO methods to be used for tax purposes leads to inventory management inefficiencies."

The ability to control purchases leads to the possibility of income manipulation. Build up of inventory will result in lower profit under LIFO (assuming rising prices) and conversely, liquidation of inventory will lead to higher profit. Consequently, a company can use LIFO to manipulate multiple years' profit simply by altering its year end purchases pattern. The research is inconclusive as to whether companies do behave in this pattern, however, this possibility exists and its simplicity is well documented.

Just In Time (JIT) inventory methods which require inventory purchases only when needed ,is the most efficient and cost effective method of inventory management. LIFO opposes a JIT system as there would be no tax benefit if imposed. Kinney and Wempe (2004) have documented that firms using LIFO are less likely to adopt JIT as an inventory management system because of the tax consequences of LIFO liquidations. "Additionally firms with a history of managing their reported earnings were also less likely to adopt JIT. As a result, LIFO does indeed cause inefficient, costly inventory management". (White, Sondhi, Fried, 2008)

Covenant Agreement Compromise

The use of LIFO can also disrupt a company's financial policies as directed by bond covenant agreements LIFO will produce more conservative, lower income, asset and shareholders' equity values than FIFO, resulting in lower liquidity, working capital, leverage and profitability ratios (See Appendix 3). This may

create forced prepayment of bonds due to a failure to must legal financial requirements. As an example, if a bond covenant requires a company to maintain a minimum current ratio, and a maximum debt ratio (see appendix 3), then LIFO will result in worse ratios when compared to FIFO. The term debt hypothesis theory applies when a company foregoes LIFO because its effect on the debt ratios and covenant are greatly compromised. Hunt (1985), did find support for the debt hypothesis theory especially with respect to debt ratios, and found a threshold level of divided payout ratios above which firms are reluctant to use LIFO.

Lack of Internal/Managerial Uses of LIFO Other than for Tax Purposes

If LIFO is a legitimate accounting method, one would expect its use for other purposes in addition to tax reporting. Is LIFO used for internal revenue making purposes such as for pricing decisions? Is LIFO used as a basis to judge management performance? Is LIFO used as a basis for bonus purposes? To answer these questions, if the use of LIFO was primarily motivated by management rather than solely tax considerations, then we would expect LIFO to be an integral part of firms internal operations, but this

does not appear to be the case: Many companies use LIFO for tax and external reporting purposes but maintain a FIFO, average cost, or standard cost system for internal reporting purposes. There are several reasons to do so: (1) Companies often base their pricing decisions on a FIFO, average, or standard cost assumption, rather than on a LIFO basis. (2) Record keeping on some other basis is easier because the LIFO assumption usually does not approximate the physical flow of the product. (3) Profit-sharing and other bonus arrangements are often not based on a LIFO inventory assumption. Finally, (4) the use of a pure LIFO system is troublesome for interim periods, for which estimates must be made of year-end quantities and prices. (Kieso, Weygandt, and Warfield, 2005).

"Note in particular that if profit-sharing and management bonuses are not based on LIFO the implication is that company does not consider LIFO to be a cost assumption appropriate in measuring a firm's performance. If proponents of LIFO believe its use is necessary to ensure that income is properly reported, it seems they should advocate a requirement that all firms use LIFO for tax and financial accounting purposes, or, at a minimum, that an electing firm be required to use LIFO exclusively, rather than permit a business to use LIFO for a portion of inventories and another method (or methods) for their remaining inventory." (Plesko, 2006)

Added Administrative Costs

LIFO use is costly from an administrative view point as companies employing LIFO for tax and GAAP purposes will have yet another set of records for internal use, as discussed above. Additionally, LIFO reserve requirements are necessary, further compounding its accounting cost. The use of LIFO then is costly from both; an asset management, including covenant compromise position, as well as an administrative viewpoint, while allowing for the potential of income manipulation.

Balance Sheet and Income Statement Presentation

Since LIFO expenses its most recent inventory acquisitions to cost, the ending inventory balance presentation is composed of the oldest inventory purchases, making the balance sheet potentially and practically very inaccurate. From a non tax aspect, this is the most viable argument against LIFO. An example will illustrate this shortcoming: if Exxon- Mobil purchased 20,000 barrels of oil in 1939 for $5 per barrel, and the 20,000 barrels remained in the accounting records as ending inventory in 2010, when the cost per barrel is $100, an assumption which is easily satisfied assuming an increasing inventory trend, then the LIFO balance sheet total for inventory in 2010 is materially misstated. Under LIFO, ending inventory in 2010 is 20,000 barrels x $5 = $100,000(1939 prices), whereas the more accurate

valuation which would be reflected under FIFO is 20,000 barrels x $100 = $2,000,000(most current prices), resulting in an understatement of $1, 9000,000 or 95% of asset value. LIFO produces unrealistic Balance Sheet Inventory totals when compared to economic reality. LIFO is too conservative and yields unrealistic financial totals for inventory, current assets, total assets, net income and Shareholders' Equity. LIFO is contradictory to FASB 157, a fair market valuation for certain assets which aims at a truer financial statement presentation. LIFO is too conservative and goes too far to understate inventory value, resulting in a balance sheet presentation of very limited usefulness to the financial user. Note also, that this company has gained a tax advantage of $1,900,000 x the tax rate over the years.

The result is that LIFO has no real application to the balance sheet, and any type of analysis from this is not viable. FIFO on the other hand, is depictive of the true inventory values as it expenses the earliest inventory and maintains it's most current inventory for balance sheet presentation. In our example, FIFO would reflect an ending inventory of 20,000 barrels X $100 or $2,000,000, an amount reflective of the true economic picture. FIFO then is balance sheet friendly and any type of ratio analysis involving Balance Sheet Inventory valuation should use FIFO as its base. As the following examples illustrate, if we wanted to calculate Return on Assets = EBIT/Assets, the asset base should include inventory on the FIFO basis. In term of debt ratio = Liabilities/Assets, the asset base again should include inventory on the FIFO basis (see appendix 2). The use of LIFO in asset, including inventory type ratios is not correct and the adjustment to FIFO via the LIFO reserve should be made prior to calculating, interpreting and commenting on balance sheet related ratios.

Romeo (2009) has noted that Exxon Mobil and most oil producers have inventory purchases made before World War II presented on their Balance Sheet. Additionally, many of these firms also have a material amount of LIFO reserves when compared to total assets and stockholders Equity, making the older inventory historical cost presentation of LIFO inapplicable.

The greatest defense for LIFO is the appropriateness of its use to derive a true economic income statement. Since LIFO expenses its most current purchase to cost of sales, it effectively matches current cost to current income, thereby making the income statement representative of economic reality. While true, there are potential flaws in this argument.

LIFO Liquidation

The first flaw is in the case of liquidating inventory. If inventory liquidates, then the cost of goods sold expense total (cost of sales) will include current inventory purchases in addition to "older" inventory purchases. As such, current revenue will be matched not only with current inventory purchases, but also with much older, predated purchases. If this were to occur, the income statement depiction of inventory would be incorrect. As an example, if Corp X had the following:

Beginning Inventory	10 Units	@ $10 per unit	=	$100
Purchase	90 Units	@ $20 per unit	=	$1,800
Total	100 Units			$1,900

If ending inventory is 15 units, i.e. 85 units sold @ $30 per unit, we have a "correct" LIFO income statement as follows:

Sales	[$2,550]	(85 units X$30)
Cost of Goods Sold	($, 1700)	(85 units X $30)
Gross Profit	($850	(1) Gross Profit %=Sales-Cost of Sales Sold)/Sales=33%

This is the correct income statement as there is a buildup/maintenance of inventory. Current revenue is matched only with current purchases. However, in the case of liquidation, if for example ending inventory is 2 units, i.e. 98 units sold, we are expensing current purchases of $20 each plus older purchases of $10 each against revenue. The Income Statement now is not reflective of economic reality. The result using LIFO is as follows:

Sales		$2,940	(98 units x $30)
Cost of Goods Sold		$1,880	(2)
Gross Profit		$1,060	
(2) (90 x$20)	=	$1,800	
+ (8x $10)	=	80	
		$1,880	

The Gross Margin Profit %(Sales – Cost of Goods Sold/Sales) here is $1060/2940 = 36% substantially higher than the reality of 33 %(1), resulting in an unreal income statement.

FIFO Presentation

Second, FIFO if used, would not give an exact, perfect presentation of the Income statement, but assuming a low to a modest inflation rate (a realistic assumption), would result in a very realistic income statement. The only shortcoming of FIFO is to expense beginning inventory, which is usually the last inventory purchases of the prior period, plus the current year's purchase, but not all of the most current purchases as reflected by ending inventory.

Thus the difference in obtaining a correct income statement is to reconcile the difference between this year's most current ending inventory costs with the beginning, last year's most current inventory costs. Mathematically, this difference approximates the inventory inflation rate times Beginning Inventory= ∏ x Beginning Inventory.

An example will illustrate this application: Assume Company Y has the following:

Beginning Inventory	100	units	@	=	$1,000
Purchases	500	units	@	=	$5,075
Purchases	500	units	@	=	$5,150
Total Available for Sale	1100	units			$11,225

Assume further that the ending inventory remains at 100 units. Under FIFO, the cost of goods sold is $11,225 less ending inventory of $1,030=$10,195. Under LIFO, the most correct presentation in this scenario, as we have non -liquidating inventory; cost of goods sold is $11,225-ending inventory of $1,000=$10,225, resulting in a difference of $30.

The difference of $30 results because the ending inventory cost is 3% greater than the beginning inventory cost. ∏=$10.3 - $10/$10=3% x Beginning Inventory of $1,000=$30.

Note that this difference is not material, as it represents a difference of 30/10,225 or .29% of the total cost. Rather this difference is minute, and the argument made is although not perfect, FIFO is a close and material indicator of income statement reality. Coupled with the best balance sheet presentation, FIFO is clearly the much superior overall inventory method from a financial and economic perspective when compared to LIFO.

International Reporting Standards

As stated earlier, IFRS does not allow LIFO as an accounting method. This creates several problems: A) The standardization of one single set of accounting standards as proposed by the US Congress may be conditional upon the elimination of LIFO. LIFO is in a politically bad situation.

B) Equally important, cross country comparisons of financial statements will be difficult if LIFO is still maintained. LIFO is a US phenomenon, and the rest of the world does not use it. Comparing a European firm using LIFO to a US company using LIFO makes financial analysis and comparability difficult. Much of the blame of the current worldwide crisis is being pinned on financial statement manipulation. World standardization of financial reporting will greatly alleviate the problem of accounting engineering.

C) Difficulty of Adjustments from FIFO to LIFO. : Adjusting LIFO to FIFO, as discussed earlier is relatively easy by use of the LIFO reserve disclosure. However, the adjustment form FIFO to LIFO is quite complex and difficult. Given that 96% of US companies and 100% of non US companies does not use LIFO, adjusting the 4% of US companies using LIFO to a FIFO basis for inter and intra Company comparisons may not be possible. Comparisons of LIFO use companies to non LIFO use companies will remain a paradox, compounding the problems of financial statement comparability.

D) Other LIFO methods: Dollar value LIFO is yet another offspring of LIFO, adding to its complexity. Additionally, if one uses a perpetual inventory method, LIFO will be require greater record keeping and yield different and multiple financial inventory totals when compared to the periodic inventory method, adding yet another layer of financial statement difficulty

Inverse Relationship: Stock Price and Adoption of LIFO

Jennings, Sinko and Thompson (1996) found a negative relationship between firm value/ stock price and the adoption of LIFO. This is consistent with pervious findings by Guenther and Trombley (1994), which showed empirically a negative relationship between firm value and the magnitude of the LIFO reserve. Their rationale is that if firms cannot pass on input price increase to their customer, an increase in LIFO reserve indicates lower future profitability. Jennings observed: As the elasticity of output prices with respect to input prices fall, the LIFO to FIFO reserve components of non-LIFO inventory have increasing by different implications for future net resource inflows, and loss of information through aggregation increase. LIFO adoption is most prevalent with increasing inflation as the tax benefit is maximized. A lot of the studies were done for firms that switched to LIFO in the early 1970's, a time of double digit inflation. Another possibility is that the negative relationship may a have resulted, as a market signal for an increasing inflation scenario, leading to a higher cost of capital, and resulting in a lower stock price. Another explanation offered is the deferred tax, FASB 109 theory. Dhaliral Trezevant and Wilkins (2000), argue that the LIFO reserve indicates a deferral in tax liability; a timing difference. The market perceives this LIFO reserve as a future cash obligation, payable when the inventory is sold or liquidated.

Finally, Biddle and Ricks (1988) also confirmed negative excess market returns for the firms adopting LIFO in 1974. They explain the paradox as part of the analyst forecasting errors for the 1974 LIFO adopters. Analyst overestimated the earnings of their companies as they did not anticipate the impact of inflation in their estimates. Actual results were lower than estimated earnings, causing a decrease in stock value. Perhaps the real reason for this negative relationship is that the additional costs of LIFO adoption exceed the tax benefit, resulting in a decrease in firm value and stock price.

The added cost due to carrying inventory reserves, the added administrative costs inherent with LIFO use, more unfavorable bond covenant results, causing a potentially higher interest rate and cost of capital, the prospect of income manipulation which is seen very negatively by the market, coupled with the tax

deferred rather than the tax exempt aspect of the LIFO reserve, may be seen by the market as a greater sum total when compared to the tax savings. So the tax benefit of LIFO may be lower than the other added costs associated with its use, causing lower firm cash flow and resulting in lower company value and stock price.

The Future of LIFO and Recommendations

There are four possibilities of LIFO going forward, and illustrated as follows:

Case	Financial Reporting	Tax Rules
1	Yes	Yes
2	No	Yes
3	Yes	No
4	No	No

In case 1, LIFO would continue as present. Given extreme dual resistance from IFRS and Congress, this result seems most unlikely. The fact that LIFO users continue to decrease, is a good indication that most believe that its repeal is eminent. Furthermore, resistance to the abolishment of LIFO will greatly and potentially hinder the goal of uniform financial reporting going forward.

In case 2, allowing LIFO for tax purposes and not for financial reporting purchases represents the best of both world, as a company report the highest income for financial reporting purposes and pay the least amount of tax. The scenario would effectively eliminate the LIFO conformity requirement. The likelihood of this happening is most unlikely and not feasible.

In case 3, the worst of both worlds for a company; that is, the lowest income for financial reporting and the highest tax payment. This scenario is also not feasible.

Case 4 represents the complete elimination of LIFO. I believe that this will occur. If LIFO is eliminated at the tax level then it will be eliminated for financial reporting purposes as the advantage for business purposes, would not exist. Given the huge U.S. budget deficit, the few select beneficiaries of LIFO use which include some of the most profitable industries such as the oil produces, and the movement to a uniform worldwide accounting reporting standard whose passage is dependent on the abolishment of LIFO, make LIFO's future pale. I believe that LIFO is on its last footing, and will be eliminated in the near future. It is possible that its elimination may be delayed for a few years, possibly to year 2015, but its termination is in my belief, inevitable.

Assuming the repeal of LIFO by the Obama administration for the period ending after tax year 2011, what are some of the tax planning opportunities available to taxpayers?

1.Section 481(a) Adjustment Period: Under current tax rules, if a taxpayer charges its accounting period form LIFO to another acceptable method, and it results in a higher inventory value, the difference in additional tax is payable over a period of four years. Under the current Obama Administration's 2010 Budget Proposal, which would eliminate LIFO, the difference would be spread to taxable income and payable over eight years. Consequently, the termination of LIFO would be mitigated as the resulting extra tax would be payable to the tax authorities over an eight year period.

2.Lowering Ending Inventory: A zero ending balance will result in the same income under any inventory method. A low inventory amount will mitigate any tax advantages between LIFO and FIFO, and as described earlier, there are additional non-tax advantages with maintaining low inventory levels.

3.Net Operating Loss: Given the current recession, a company may have encountered losses in the last two years. Under current U.S. tax rules, such losses can be used to offset in part or in full, past profits for the last 2 years and/or future profit for the next 20 years; known as the 2/20 rule. A change from LIFO to FIFO will result in a higher income amount in the year of adoption, but this added income may be offset by past net operating losses, minimizing the tax effect of LIFO repeal.

CONCLUSION

This paper addressed the many disadvantages of LIFO in support for its repeal. Given LIFO's extreme political opposition, the probability for it's elimination as an acceptable accounting method is real and most likely in the near future. The probable repeal of LIFO however should be viewed as favorable. First; it will pave for the convergence of standardizing International Financial Standards; second; it will raise additional sums of tax revenue for the US government; third: the extra cost savings of non LIFO adoption may very well exceed its tax benefit, resulting in greater cash flows and greater value for the firm; and fourth: there are also various tax planning opportunities available to help ease the transition from LIFO. The limitations of my research is that the negative relationship between LIFO adoption and firm value is based on 400 firms who changed to the LIFO method in the early 1970's ,a time of double digit inflation.

It is possible that this relationship does not hold absent high inflation environments? Further research should be done to quantity in dollar terms the costs of the disadvantages of LIFO adoption addressed in this paper. What is the dollar cost of inventory inefficiencies caused by inventory reserves? What are the additional administrative dollar costs of LIFO adoption? When all the costs discussed in this paper are totaled (See Appendix 2), do they exceed the tax benefit realized by LIFO? The effect of stock prices for companies who opted out of LIFO should be empirically tested to see the results. For these companies, was there a change in stock price resulting from the change, and if so, was this significant, and in which direction? The research should focus on companies making this adjustment in recent years and in non inflationary periods.

Additionally, research should be done on the manipulation income effects of LIFO. Do companies in practice liquidate reserves in bad times to reduce losses? Do companies increase their reserves in good times to reduce profits and their income tax liability? What impact does this behavior if observed, have on stock price? This is interesting, as there is an added tax / cash benefit potential if practiced, which would be negated by income manipulation practices.

APPENDIX

Appendix 1: Accounting Inventory Methods

Suppose Company X in its first year of operation purchases inventory as follows: (Rising prices or inflationary trend)

Month	Units	Cost/Unit	Total Cost
January 15	100	$10	$,1000
March 15	100	$10.20	$1020
June 15	100	$10.40	$1,040
December 15	100	$10.60	$1,060
Total	400		$4,120

At year end, an inventory count reveals 20 units in its ending inventory.The following costs of goods sold would result under the following three methods of accounting (FIFO, LIFO and weighted average):

	FIFO	**LIFO**	**Weighted Average**
Beginning Inventory	0	0	0
(+) Purchases	$4,120	$4,120	$4,120
Total Available for Sales	$4,120	$4,120	$4,120
Less Ending Inventory	(212)[1]	(200)[2]	(206)[3]
Cost of Goods Sold	$3,908	$3,920	$3,914

FIFO: The ending inventory is represented by the last purchases made at $10.60 each. (20 x $10.60 = $212)
LIFO: The ending inventory is represented by the first purchases made at $10 each. (20 x $10.00 = $200)

Weighted average: The ending inventory is represented by the weighted average cost: Total cost/total units = $4120/400 = $10.30 per unit

The above illustrates the three common accounting methods and its differences in an inflationary environment. LIFO will result in a $12 higher cost then FIFO by virtue of inflation. This will result in a pretax lower income of $12 and a tax savings of $6 lower than the tax rate. Assuming a 40% tax bracket, LIFO will result in a lower tax payment of 40% x 12 or $4.80 and a lower new income of $12-$4.80 or $7.20. FIFO will result in a higher pretax income of $12, a higher tax payment of $4.80 and a higher new income of $7.20. (The weighted average method results will be between the LIFO and FIFO method.

Appendix 2: Summary of Advantages/Disadvantages of LIFO and FIFO

		LIFO	**FIFO**
1	Tax Advantage	Yes	No
2	Effective Inventory Management	No	Yes
3	J.I.T Adoption	No	Yes
4	Potential for Income Manipulation	Yes	No
5	Bond Covenant Advantage	No	Yes
6	Internal Uses of Method	No	Yes
7	Added Administrative Costs	Yes	No
8	IFRS Consistent	No	Yes
9	Balance Sheet Oriented	No	Yes
10	Income Statement Oriented	Yes	Yes

The above items represent a comparison of the advantages and disadvantages of LIFO when compared with FIFO. Beyond the tax advantage (#1), LIFO is a costly method of accounting choice. FIFO possesses advantages for items # 2 to 9, while both methods satisfy item 10.

Appendix 3: Selected Financial Ratios

I Liquidity 1 Current Ratio: $\frac{\text{Current Assets}}{\text{Current Liabilities}}$

Working Capital= Current assets-Current Liabilities

II. Leverage 2 Debt Ratio: $\frac{\text{Total Liabilities}}{\text{Total Assets}}$

III.	Profitability	3	Gross Profit Ratio:	$\frac{\text{Sales – Cost of Goods Sold}}{\text{Sales}}$
		4	Operating Income Ratio:	$\frac{\text{Earnings Before Interests and Tax}}{\text{Sales}}$
		5	Net Income Ratio:	$\frac{\text{Net Income}}{\text{Sales}}$
IV.	Activity	6	Asset Turnover:	$\frac{\text{Sales}}{\text{Average Total Assets}}$
		7	Return on Assets:	$\frac{\text{Earnings Before Interests and Tax}}{\text{Average Total Assets}}$
		8	Return on Stockholders' Equity:	$\frac{\text{Net Income}}{\text{Average Stockholders' Equity}}$

FIFO will provide better financial ratios for all of the above, except for Assets Turnover, #6. The above ratios measure liquidity ratios, Debt ratios, Profitability ratios and Activity ratios of companies. These represent common ratios and are not representative of an exhaustive list of all the relevant ratios. The result is that FIFO will provide better financial ratios for all of the above, except for Asset Turnover, #6.

Appendix 4: LIFO to FIFO Balance Sheet and Cost of Goods Sold Calculation

Balance Sheet: FIFO= LIFO+ LIFO Reserve

Income Statement: Cost of Goods Sold FIFO= Cost of Goods Sold LIFO + ΔLIFO Reserve
ΔLIFO Reserve=LIFO Reserve, end of period-LIFO Reserve, beginning of period

The above formulae convert LIFO inventory methods to a FIFO basis Balance Sheet and Income Statement. LIFO reserve represents the difference between FIFO valuation of inventory less LIFO valuation of inventory and this amount needs to be disclosed in the notes of the financial statements.

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BIOGRAPHY

Peter Harris is an Associate Professor of Accounting and Finance at the New York Institute of Technology, and is the Chair of the Accounting and Finance Department. He can be reached at: New York Institute of Technology, School of Management, 16 West 61st Street, Room 817, NYC, NY, 10023, Telephone 516-695-6707, and Email address: PHARRIS@NYIT.Edu or NYITPHARRIS@aol.com.