

Deferred Taxes in the Context of the Unit Problem

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Abstract

This article examines the theory underlying the current accounting and reporting standards for deferred taxes and concludes that using the flow-through accounting approach is a better fit for reporting this financial statement item than the asset-liability approach currently required by the Financial Accounting Standards Board (FASB). The authors propose that the underlying issue in accounting for deferred taxes is the unit problem as presented by Carl Devine. To obtain a perspective on the magnitude and behavior of the deferred tax account balances reported by firms, 2,100 firms in 20 industries were observed approximately over a ten-year period (1997-2006). Most firms appear to postpone deferred tax reversals by utilizing tax planning strategies, allowing them to defer indefinitely the requirement to pay tax on earlier timing differences. Therefore, net deferred tax liability balances can be thought of as possible or remote contingencies rather than probable liabilities. To illustrate the financial consequences of using the approach where the tax expense is equal to the statutory tax liability instead of the expense reported under the current rules, the change in the debt-to-equity (DTE) ratios was computed for the firms in the sample by eliminating the net deferred tax balances from liabilities and adding them to equities.

Keywords: Deferred taxes, the unit problem, flow-through method, asset-liability method.

Introduction

For decades critics have raised several concerns about accounting for deferred taxes promulgated in Statement of Financial Accounting Standards No. 109 (S109). They have criticized the: (1) inconsistent treatment of the deferred tax asset and liability; (2) FASB's failure to allow for discounting of the deferred tax liability; (3) method's complexity and potential lack of usefulness; (4) FASB's failure to deal with temporary differences that are permanently deferred; (5) method's potential negative impact on stock options; and (6) lack of relevance of deferred tax amounts under full recognition approach (both discounted and undiscounted) in predicting stock returns, market value of firms, discounted value of asset-level reversals of deferred tax balances, and future profitability of firms in the U.K. where partial recognition method was replaced with the S109 approach. Many of these concerns have not been fully addressed by the Financial Accounting Standards Board (FASB).

The FASB has long struggled with the controversy of changing the reporting requirements for deferred taxes first promulgated in Accounting Principles Board (APB) Opinion #11 (AICPA, 1967). Finally, the FASB issued S109 to bring closure to this issue (FASB, 1992). However, the continuing controversies regarding the final pronouncement and the delays in implementing the final standard attested to the complexity of the issue. Currently, the FASB Interpretation No. 48 (FIN 48) concerning accounting for uncertain tax positions has caused much controversy (FASB, 2006). The impact of FIN 48 on tax reserves that are set up to mitigate challenges by tax authorities and auditing the balances of deferred tax and the allowance accounts has been well documented. The accounting academics have generally supported the approach taken by FIN 48 since its accounting and reporting standards recognize tax assets and liabilities based on the likelihood that they will be recognized by tax authorities (AAA, 2007). Finally, international standards concerning inter-period tax allocation (IAS 12) promulgated in 1996 and S109 have divergent accounting and reporting requirements that must be addressed to achieve convergence (IASB, 1996).

Purpose

This study examines the theory underlying the current accounting and reporting standards for deferred taxes. The authors propose that the underlying issue in accounting for deferred taxes is the unit problem as presented by Devine (1985). In an earlier work, the behavior of net deferred tax liability balances for 1,571 companies in 23 industries were observed over a five-year period (1978-1982) where less than three percent of the companies experienced a decrease in their deferred tax balances (Rue and Volkan, 1985). In this study, the net deferred tax liability balances of approximately 2,085 firms in 20 industries are examined over a ten-year period (1997-2006). In addition, the financial consequences of using the flow-through (where tax expense is equal to the statutory tax liability) versus the asset-liability method of accounting for deferred taxes is illustrated. This objective was achieved by computing the change in the debt-to-equity (DTE) ratios of the sample companies when net deferred tax balances are eliminated with corresponding adjustments in the total liability and stockholders equity balances.

The Unit Problem

The controversy over the accounting for income taxes will not subside until the FASB reconsiders S109 and adequately addresses the unit problem. The unit problem involves the selection of either the individual perspective or the aggregate perspective for applying measurement and recognition conventions to the phenomenon of interest. The positions taken by both proponents and opponents of S109 are affected by whether one views income tax accounting as an issue of accounting for individual events or accounting for aggregate activity. While the FASB generally views deferred taxes from an individual perspective, the nature of taxation is an aggregate phenomenon. In addition, the unit problem addresses the selection of appropriate attributes for characterizing the event for which one wishes to account. The accounting process involves the identification, grouping and measurement of what are believed to be relatively homogeneous events. If events are not strictly homogeneous, however, a problem can arise in selecting attributes of the group or class portrayed by the accounting process.

Some may take a specific or individual perspective that examines the attributes of one member of the group and assume that those attributes may be generalized to the other members. Others may take an aggregate perspective that attempts to identify attributes relevant to the accounting process by examining the behavior of the group taken as a whole rather than focusing on individual members. For example, warranty obligations qualify as a liability only from an aggregate perspective. It is unlikely that a warranty obligation will arise from a given sales transaction (individual perspective), since the probability that a particular product is defective is small. However, experience with aggregate sales and related warranties suggests that some sales will require warranty claims. Thus, the existence of a warranty obligation makes sense only when the evaluation is made from an aggregate perspective. Another area where the FASB took an aggregate perspective in developing accounting standards is financial reporting for post-employment benefits. The authors argue that the aggregate perspective is applicable to deferred taxes.

The FASB's position is that tax consequences of an individual event are separable from aggregate taxable income. S109 indicates that individual temporary differences become taxable or deductible when the related asset is recovered or the related liability is settled. The FASB's discussion of the basis for their conclusions also clearly indicates the individual event perspective that they take. For example, in response to advocates of partial allocation (an aggregate perspective), the FASB states that the deferred tax consequences of a depreciation difference for a particular depreciable asset ordinarily will result in a sacrifice in future years. There will be a future sacrifice because a new individual difference resulting in a taxable amount will be used to offset a reversing taxable amount.

Based upon this individual event perspective, S109 required the adoption of the asset-liability approach of accounting for inter-period income tax allocation. This line of reasoning assumes that the tax consequences of earning income or incurring losses and expenses in future years are not anticipated for purposes of recognition and measurement of a deferred tax liability or asset. Since this view is not defensible in many situations, S109 modifies this requirement in case of deferred tax assets by considering future events to assess the likelihood that future tax consequences will be affected by events recognized in the current financial statements. Thus, the FASB creates an inconsistency in accounting for deferred tax assets and deferred tax liabilities

by considering future events to promulgate accounting procedures for the former but not for the latter.

Arguments Underlying Non-Allocation

Deferred tax accounting is based on the concept that income taxes are expenses. The authors contend that the question of whether to allocate taxes between periods depends on whether the income tax provision for a period is an expense or simply a redistribution of wealth. Although it could be argued that the expenses can be allocated, income distributions should not be allocated among periods. Income distributions should be charged to the period in which they occur. In other words, the tax provision should equal the taxes payable if taxes are income distributions. Thus, business should only be concerned with recognizing income taxes in the period where the related taxable income occurs. Taxes are a function of government fiscal and monetary policies, and they are not functionally related to financial reporting of companies. While the authors believe that taxes are a redistribution of wealth, this study yields to the prevailing theory that recognizes taxes as expenses.

Even when one agrees that taxes are expenses of doing business, one can maintain that the amount of income tax expense reported on a company's income statement should be the same as the income taxes payable for the accounting period as determined by the income tax return. Whether or not the company has accounting income is irrelevant and matching income taxes with accounting income does not provide relevant information. The allocation of income taxes in a manner similar to other expenses is not relevant. While expenses measure the cost of generating revenue, income taxes generate no revenues. They are neither incurred in anticipation of future benefits nor are they expirations of costs. In addition, income taxes are not levied on individual items of revenue and expense. Therefore, there can be no temporary differences related to these items.

Finally, income tax allocation entails a forecast of future profits. To incorporate such forecasts into accounting measures is inconsistent with the principles of accounting. There is no present obligation for the potential or future tax consequences of past transactions because there is no contract (as it is the case with employee benefits and leases) and no legal liability to pay taxes until an actual tax return is prepared.

The Question of Asset–Liability Recognition

While the arguments presented also apply to deferred tax assets, for the sake of brevity only the liability issue is addressed. In the FASB's view, the deferred tax balances meet the definition of a liability that is the probable future sacrifice of economic benefits that arise from present obligations of a particular entity to transfer assets or provide services to other entities in the future as a result of past transactions or events (FASB, 1985, par.35). In support of its conclusions in S109, the FASB argues that temporary differences will become taxable amounts in future years as a result of events whose occurrence is already inherently assumed and no other future events need occur. While the enterprise might be able to delay settlement of a tax obligation by delaying the events that give rise to taxable amounts, a contention that those events will never occur would contradict assumptions inherent in the statement of financial position since tax obligations are incurred when temporary differences originate.

It can be demonstrated that these arguments may be contrary to the individual event perspective used by the FASB. If one takes an individual event perspective, the characteristics of a liability resulting from depreciating an individual asset using different depreciation methods are present only if the temporary differences between taxable income and financial statement income that result in future net taxable amounts can be recovered through the use of sufficient future taxable income. Thus, from an individual event perspective, the resource transfer is dependent upon a future event, namely future income. Meanwhile, liability recognition resulting from an individual transaction depends upon aggregate future events, that is, future operational decisions regarding depreciable assets.

Another question is whether a present obligation exists. Unlike all other liabilities recognized for financial reporting purposes, there is no explicit or implicit contract between the reporting entity and the creditor. At any point in time in the life of the entity, the government does not have a claim to the entity's assets for the deferred tax liability. The only time the claim arises is in the future when sufficient taxable income is reported. While the recovery of the asset through use or sale has a high probability of occurrence in a going concern, the incidence of tax depends on the occurrence of future events that together determine whether taxable income exists.

The third aspect of the liability definition is that future sacrifices are a result of past transactions or events. While depreciation is described as an internal event in S109 (FASB, 1992, par. 138), temporary differences between taxable income and financial statement income are not caused by the event of depreciation. The differences occur because of the use of alternative methods of depreciation. Since the law allows alternative allocation schemes, the resulting taxable income and accounting income are caused by different allocation methods and estimates of residual value. They are not the result of past transaction or events since estimates of useful life and residual values must reflect future usefulness.

Finally, the long-term deferred tax liability is the only non-current liability that is exempt from discounting, violating the FASB standards and concepts related to the measurement of liabilities and the requirements to use present values. S109 (FASB, 1992, par. 199) essentially declines to address this issue. If the trends in the size and nature of deferred tax balances were examined to determine appropriate discount periods, the process of discounting could reduce the reported deferred tax amounts to zero or to a very small number (Rayburn, 1987). One of the arguments against the use of discounting is that since the government does not recognize the existence of a liability and there are no other contractual counter-parties, the discount rate is zero. However, this argument serves just the opposite of its intended purpose, strengthening our contention that flow-through approach should be used in accounting for taxes.

Net Deferred Tax Liability Balances: An Aggregate View

The following example illustrates how the growth in deferred tax liability supports the aggregate events perspective. Assume that a company acquires a machine with a residual value of \$80,000, a useful life of 5 years, and a cost of \$1,000,000 every year. The company uses double declining balance depreciation for tax purposes and straight-line depreciation for financial reporting. The tax rate is 34%. The effect of these assumptions on the deferred tax liability is illustrated in Table 1.

Table 1 shows that the liability reaches a constant level after five years. The resulting tax liability will not be paid unless the company fails to replace a machine as it is worn out. On the

other hand, the deferred tax liability is likely to increase as the company expands and adds more machines. Further, if it is assumed that the firm is holding its productive capacity stable, it will continue to acquire new machines. These additional machines will probably cost more and lead to an increased deferred tax liability. The liability is reduced only if the firm discontinues its capital investment in new machinery and starts to curtail operations. However, there are very few industries where such an outcome is probable at the aggregate level.

Thus, the choice of perspective from which to evaluate accounting phenomenon should be based on our understanding of their underlying nature. The act of taxation is an aggregate phenomenon and the tax to be paid in a period is based on taxable income of the period. Individual transactions or events are not taxed. Recognizing tax expenses, assets, and liabilities on individual events is not representationally faithful. The FASB has acknowledged the aggregate nature of income tax determination by allowing companies to utilize tax-planning strategies when considering the future years' effects of temporary differences. Thus, the FASB recognized that one objective of corporate tax policies is to minimize the annual tax obligations and that it is possible that all or a portion of a deferred tax obligation will not be paid.

Table 1 - Illustration of Growth in Aggregate Deferred Tax Liability

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
Increase Due to Purchase in Current Year (t)	73.4	73.4	73.4	73.4	73.4
Increase Due to Purchase in Prior Year (t-1)		19.0	19.0	19.0	19.0
Decrease Due to Reversal From Year (t-2)			(13.6)	(13.6)	(13.6)
Decrease Due to Reversal From Year (t-3)				(33.2)	(33.2)
Decrease Due to Reversal From Year (t-4)					(45.6)
Total Increase	73.4	92.4	78.8	45.6	--
Liability Balance	73.4	165.8	244.6	290.2	290.2

A Contingent Liability Approach

The International Financial Reporting Standard 12 (IASB, 1996) recognizes that it is difficult for firms to determine the amount of future income tax that may result from temporary differences. The standard requires deferred tax procedures be used and assets and liabilities be recognized except for those temporary differences where future reversals are not probable. Consequently, a large portion of deferred tax liabilities may not be recorded since most timing differences related to depreciation will not reverse in the future because of the capital replacement policies most firms employ (see Table 1 above for an illustration). Thus, the policies adopted by the FASB and IASB to achieve global convergence and harmonization of accounting standards present an opportunity for the critical review of the asset-liability approach and the adoption of a different (e.g., the flow-through) method.

From an aggregate prospective, deferred taxes are contingencies since future payment of the deferrals require future income. In addition, as illustrated in Table 1, tax planning policies may result in continuing postponement of any payments. A growing company is likely to continue to buy capital assets in the future as its business grows. Mature companies will continue to buy capital assets to replace worn out assets. As prices to acquire capital assets increase, simple replacement of assets will cost more, thus deferrals increase over time.

Thus, the FASB's deferred tax requirements run contrary to either the individual event perspective or the aggregate perspective. The FASB should revise the method of accounting for

income taxes to ensure that the taxes payable equals tax expense unless it is probable that aggregate amounts in a given deferred tax category will reverse. The effect of timing differences of tax deferrals could be disclosed using the existing standards for contingencies with the amount reported in the footnotes to financial statements when aggregate reversals are possible.

Methodology

If net deferred tax positions were no longer reported on the balance sheet, and the flow-through method of accounting for income taxes was used, what impact would it have on a company's financial position? To answer this question, approximately 2,085 companies reporting a deferred tax position from 1997 to 2006 in 20 industries were studied. The deferred tax balances were used for the selected firms reported in the CS Active data set in the COMPUSTAT database. The COMPUSTAT variable used is TXDB, representing the net accumulated tax deferrals on the balance sheet due to timing differences between the reporting of revenues and expenses for financial reporting and tax purposes, including the effects of investment tax credits. Since this variable is not available for banks and insurance companies, these firms are excluded from our analysis.

This study focuses on the change in the debt-to-equity (DTE) ratio assuming that net deferred tax assets and liabilities are not reported on the balance sheet. Of course, many financial ratios are affected if the flow-through method is used, but the DTE ratio is a significant measure of a company's financial position. The DTE is a primary determinant of risk, and indicates the ability of a company to access capital markets.

The first step in our study is to adjust the balance sheets of companies by eliminating the net deferred tax position represented by the COMPUSTAT data item TXDB that sums all deferred tax asset and liability amounts reported in the balance sheet. The analysis of the database shows that all net deferred tax positions have credit balances. The TXDB is deducted from total liabilities and add it to owners' equity because if the deferred taxes had not been recorded, cumulative income from previous years would have been higher. Next, the DTE ratio was determined under the current method (DTED) and the flow-through method advocated in this paper (DTEF) for each company. Each year, DTEs of twenty (20:1) or higher are eliminated to remove outliers. In addition, companies with negative total equity in a given year are excluded from the analyses carried out in that year. To observe the behavior pattern of the TXDB balances, the net deferred tax was divided by total assets to remove size bias.

The statistical analysis is carried out at two levels: all observations for the entire sample each year and each industry each year. In addition, overall averages were computed for each industry and the entire sample over the ten-year period. To improve clarity and reduce excessive detail, Tables 2 and 3 show only the overall average results. Differences of means was tested in this study to determine significance. The test statistic is the ratio of the difference of the means of the DTE ratios to the standard error and one-tailed t-test is used since the DTE ratios were expected to decline. When the sample sizes are small (Personal Services for all ten years and in three other occasions – 13 out of 400-plus tests), the nonparametric Wilcoxon Signed Ranks (WSR) test is used. Since both un-weighted and weighted averages show the same pattern of change in the DTE ratios and other results, only un-weighted results are reported.

Results

The number of raw observations was 21,964. After adjusting for DTE ratios over 20:1 and negative equity amounts, 20,849 observations were used, a five percent decrease. The number of observations in a given industry from one annual period to the next increased when new firms were added and decreased as existing firms merged or went out of business.

Table 2 presents the weighted average results of our study for the 1997-2006 period based on the entire sample and each year. The number of observation included in the analysis range from a low of 1846 in 2002 to a high of 2,470 in 1997. The weighted average annual ratio of net deferred tax balances to total assets remains stable around 5.1 percent for the overall sample, moving within a range of 4.8 in 2000 to 5.4 percent in 1997. Thus, the overall behavior of the ratio of deferred tax balances to total assets, while showing small fluctuations from year to year, stays remarkably stable, matching the pattern demonstrated in the Table 1. Since it is logical to assume that total assets grow over time, companies must have a policy of acquiring assets on a continuing basis to stop deferrals from reversing and keeping net deferred tax balances at a level commensurate with the growth in total assets.

Table 2 – Weighted Average Total Sample and Annual Results for All Industries Combined

Year	Total Number of Observations	DTED	DTEF	DIFF	Percent Decrease in DTE (*)	Percent of TXDB to Total Assets
All Years	20,849	1.81	1.40	.41	22.4%	5.1%
1997	2,470	1.68	1.32	.36	21.2	5.4
1998	2,340	1.78	1.42	.36	20.4	5.2
1999	2,236	1.86	1.47	.39	21.1	5.0
2000	2,122	2.00	1.55	.45	22.6	4.8
2001	1,943	1.93	1.49	.44	22.9	5.0
2002	1,846	1.85	1.42	.43	23.3	5.2
2003	1,920	1.81	1.38	.43	23.6	5.0
2004	2,024	1.80	1.37	.43	23.9	4.9
2005	2,017	1.73	1.34	.39	22.7	5.0
2006	1,931	1.66	1.29	.37	22.3	5.2

(*) All decreases are statistically significant with $p < .001$

While the average DTED ratio for the overall sample for the 1997-2006 period ranges from a low of 1.66 in 2006 to a high of 2.00 in 2000, the average DEF ranges from a low of 1.32 in 1997 to a high of 1.55 in 2000. The DTE ratios decline a weighted average of 22.4 percent when the flow-through method is used, but remain within the range of 21.1 percent in 1999 to 23.9 in 2004. In addition, both the t-tests and the WSR tests show that the declines are statistically significant for the total sample and each year with a 99.9 confidence level or better.

Table 3 presents the weighted average results of our study for the 1997-2006 period based on the entire sample and each industry. The number of observations included in the analysis ranged from a low of 120 in Personal Services industry to a high of 5,201 in Machinery. The average annual ratio of net deferred tax balances to total assets ranged from a

low of 2.0 percent in Electronics to a high of 10.9 percent in Utilities. As expected, this ratio is quite high in Mining, Petroleum and Natural Gas, and Transportation. The low ratio of deferred tax balances to total assets in the Construction industry can be explained by the required use of percentage-of completion method for both accounting and tax reporting purposes. While the annual results for each industry are not shown separately, the year to year change in the ratio of net deferred tax balances to total assets in each industry is minimal, except in Mining, Petroleum and natural gas, and Printing and publishing.

Table 3 – Average Total Sample and Industry Results for 1997-2006

Industry	Total Number of Observations (*)	DTED	DTEF	DIFF	Percent Decrease in DTE (**)	Percent of TXDB to Assets
All Industries	20,849	1.95	1.51	.44	18.0%	4.4%
Chemicals	329	2.45	1.82	.63	19.0	4.6
Construction	269	2.38	2.08	.30	9.7	2.3
Drugs & Med. Eq.	732	1.03	0.88	.15	14.5	3.2
Electronics	941	1.05	0.92	.13	10.3	2.0
Food Prod.	1,073	2.01	1.52	.49	18.8	4.5
Household Goods	264	1.98	1.39	.59	12.4	3.1
Machinery	5,201	1.42	1.22	.20	10.9	2.3
Mining	413	1.20	0.85	.35	29.8	6.9
Motor Vehicles	501	2.88	2.39	.49	12.5	2.4
Personal Services	120	2.78	1.90	.88	19.1	3.9
Petrol. & Nat. Gas	1,431	1.38	0.99	.39	28.4	7.7
Printing and Publ.	487	2.06	1.54	.52	19.9	4.9
Retailers	1,709	1.66	1.43	.23	10.8	2.5
Rubber & Plastics	328	2.34	1.90	.44	14.9	3.3
Steel	1,100	1.75	1.45	.30	16.2	4.0
Textiles	470	1.62	1.33	.29	14.5	3.5
Transportation	1,172	2.18	1.59	.59	28.7	7.9
Utilities	2,365	2.71	1.66	1.05	37.4	10.9
Wholesalers	998	2.06	1.75	.31	12.3	3.0
Wood & Paper	946	2.09	1.63	.46	19.3	5.0

(*) The average number of firms in each industry each year is one-tenth of this number

(**) All decreases are statistically significant with $p < .001$

While the average DTED ratio for the 20 industries ranges from a low of 1.03 in Drugs & Medical Equipment to a high of 2.88 in Motor Vehicles, the average DTEF ranges from a low of 0.85 in Mining to a high of 2.39 in Motor Vehicles. Overall, the DTE ratio declined an average of 18 percent when the flow-through method was used. In addition, both the one-tailed t-test and the WSR tests show that the decreases in the DTE ratios are statistically significant for the total sample and in each industry with a 99.9 confidence level or better.

Thus, the implementation of the flow-through method will result in significant changes in a key ratio that is used in the financial evaluation of most companies. Conversely, the debt-to-

equity ratios used at present in the financial evaluation of companies are flawed because the net deferred tax balances are included in liabilities, when it is clear that these accounts do not meet the liability criteria specified in accounting theory.

Conclusions and A Call for Action

The current reporting requirements for deferred taxes are too complex and costly to apply. The ever-increasing net deferred tax liability position for many firms does not appear to be reversing, and questions concerning whether taxes are an expense and whether the required method of accounting for deferred taxes is helpful in assessing future cash flows are still not resolved. The simultaneous use of incompatible unit perspectives by S109 is the basis of the disagreements most critics have. The FASB adopted both individual and aggregate event perspectives, thus arguing both sides of the coin simultaneously and drawing insupportable conclusions regarding the recognition of liabilities and assets. This study concludes that income taxation is an aggregate phenomenon and an aggregate perspective is required, making the flow-through method of accounting the obvious choice.

The flow-through method of accounting for taxes results in significant decreases in the debt-to-equity ratio for most firms, improving their financial position. The flow-through method represents a logical approach in accounting for taxes as long as taxation is viewed as a transaction occurring between the private and public sectors. That is, taxation is the act of transferring a portion of the periodic increase in an entity's net worth (computed using the tax law) to a government entity for the privilege of conducting business in that government's jurisdiction. This method results in the equality of the tax provision for a period to the required cash outflow for taxes for that period, and deferred tax assets and liabilities are eliminated.

Deferred taxes represent contingencies since most firms have tax policies that allow them to defer taxes at the aggregate level indefinitely making it probable that temporary difference will not reverse in the foreseeable future. Where the reversal of some deferred taxes is probable, it is appropriate to report those amounts in the financial statements with the remaining balances that may possibly reverse being disclosed in the footnotes. In this manner, global convergence and harmonization of accounting for inter-period tax allocation will be achieved.

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Acknowledgement

We appreciate the help of Tony Malik who gathered data for the study while serving as a graduate research assistant in the Richards College of Business.

