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# An Investigation Of Deferred Income Taxes During A Recessionary Period

Darroch Aitkens Robertson

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AN INVESTIGATION OF DEFERRED INCOME TAXES DURING  
A RECESSIONARY PERIOD

by  
Darroch A. Robertson

School of Business Administration

Submitted in partial fulfilment  
of the requirements for the degree of  
Doctor of Philosophy

Faculty of Graduate Studies  
The University of Western Ontario  
London, Ontario  
April, 1987

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## ABSTRACT

Utilizing a random sample of 80 Canadian public companies, this thesis establishes that a significant increase in the number and magnitude of deferred income tax drawdowns occurred in the recessionary period of the early 1980s. The behaviour of deferred income tax expense is then investigated to determine if the observed increase in drawdowns related to a reduction in fixed asset additions or was the result of accounting losses.

The existing literature on deferred income taxes implicitly assumes that drawdowns are the result of involuntary reversals of timing differences that result in a sacrifice of economic resources. However, the data gathered from financial statements leads one to believe that many drawdowns, and in particular the larger ones, are the result of accounting losses.

It was not possible to determine the exact proportion of drawdowns resulting from losses as current Canadian accounting standards do not require that the reason for a drawdown be provided. For this reason, the researcher contacted management of 13 of the companies experiencing drawdowns in the early 1980s. The result was a substantiation of the belief that losses were a very important fac-

tor underlying the increase in drawdowns. It is believed that this has the potential to mislead a financial statement reader as a company's consolidated financial statements can indicate a profit, yet the drawdown can relate to losses in one or more subsidiaries. This is due to a Canadian requirement that each legal entity file its own separate tax return and therefore each separate legal entity in the consolidated group must individually determine its deferred income tax.

In addition, a review of companies notes relating to loss carryforwards indicated potential departures from the CICA Handbook and a lack of data that the researcher believes is necessary for a user to make an assessment of the potential benefit that may be associated with these loss carryforwards.

Partial tax allocation, using the deferral method, is recommended for rapid write-off assets such as Class 29 assets, but the critical recommendations relate to disclosure. Current Canadian accounting standards do not require disclosure of the reasons for changes in deferred income taxes, yet the data analyzed shows that it is not possible to make accurate inferences about this behaviour from companies' financial statements. The recommendations on disclosure are designed to rectify this problem.

## ACKNOWLEDGEMENTS

The time required to complete a Ph.D is often filled with periods of loneliness and self-imposed isolation. To travel this road requires support from individuals and organizations at three different levels: intellectual, financial and emotional.

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I received considerable encouragement and support from friends and family and wish to acknowledge their kindness

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Unquestionably. No person could ask for more in their parents and I am sure no person has ever received more from their parents than I have.

The happiness that these and other people felt when this thesis was successfully defended was very soon displaced with the news of my nephew's death. As a tribute to Jeremy Jones and those who helped me throughout my doctoral studies I wish to dedicate the work that went into this document to him.

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## CHAPTER ONE

### OVERVIEW AND DEFINITION OF TERMS

#### INTRODUCTION


The primary purpose of this study is to determine whether the apparent increase in the number and dollar amount of deferred income tax drawdowns observed in 1982 (Lanfranconi and Robertson, 1984) was consistent with the traditional involuntary reversal argument or whether they may have resulted from the recognition of accounting losses.

The existing literature on deferred income taxes implicitly assumes that deferred income tax drawdowns are the result of an involuntary reversal of timing differences accompanied by a current cash impact for income taxes. In the case of timing differences on fixed assets this would arise if, while remaining profitable, a company was required to claim less tax depreciation than depreciation recorded for financial statement purposes. However, preliminary investi-

gation suggested that many drawdowns were not the result of involuntary reversals but rather due to losses and the flexibility in the Canadian Income Tax Act on claiming tax depreciation. Therefore, there is no cash impact in the year the drawdown occurs.

The distinction between these two explanations for deferred income tax drawdowns is believed to be important for two reasons. First, the reason for the occurrence of a deferred income tax drawdown has implications as to the appropriateness and theoretical justification for recording deferred income taxes in the first place. This entails a comparison between the arguments put forward by supporters of the comprehensive tax allocation method of accounting for income taxes and supporters of the flow through method, as well as the factors that each group would predict would be associated with a drawdown. Second, the distinction is important as each type of drawdown may provide a different signal to financial statement readers as to the extent, timing and uncertainty of future after-tax cash flows.

It would be possible to argue that the distinction between these two explanations is trivial provided adequate disclosure was available for financial statement readers to determine the reason for the behaviour of deferred income taxes. However, Canadian accounting standards do not re-





quire disclosure of the reasons for the behaviour of the deferred tax account. This potential problem is compounded in Canada as companies are required to file tax returns and thus determine deferred income taxes on a legal entity basis, yet issue financial statements on a consolidated basis.(1)(2) This leads to the potential for the signal conveyed to financial statement readers to be garbled by the consolidation of other legal entities. Therefore, an additional objective of this research is to determine whether it is possible to identify each type of drawdown from the financial statements and to assess the extent of each type of drawdown.

-----

1 In the United States, companies are permitted to file consolidated tax returns, which would suggest that fewer drawdowns would be observed during recessionary periods if drawdowns are largely a function of losses. This is because, in the U.S., a loss in one subsidiary can be offset against the profits of another and not require a drawdown to provide for the benefit associated with losses.

2 It is possible for deferred income taxes to arise due to the consolidation process when there is a need to eliminate inter-company profits.

IMPORTANCE OF TIME PERIOD FOR RESEARCH

The period of the early 1980s was a time of severe economic downturn never encountered since the advent of deferred income tax accounting. It has been suggested that such an economic climate would result in a significant increase in the number of income statement drawdowns in deferred income tax because companies would reduce their fixed asset additions. Lanfranconi and Robertson (1984), using a sample of 34 companies, investigated the behaviour of deferred income taxes during the recessionary period from 1980 through 1982 and found that the number and dollar amounts of drawdowns did increase for their sample. The 1983 edition of Financial Reporting in Canada also provides data showing a large increase in the number of drawdowns. While both of these documents establish that the quantity of drawdowns increased during the recessionary period of the early 1980s, they did not provide an explanation for the increase.

Three, non-mutually exclusive, explanations exist for the apparent increase in drawdowns in 1982. First, early in the 1980's, North America fell into the grips of a severe recession and for the first time since at least 1972 there was a decrease in fixed asset expenditures, an event traditionally believed to have the potential to cause drawdowns

TABLE 1-1

QUARTERLY ECONOMIC INDICATORS

QUARTER	% CHANGE GNE/GNP (CONSTANT PRICES)	% CHANGE NON-RESIDENTIAL FIXED INVESTMENT	% CHANGE CORPORATE PROFITS BEFORE TAX
1980			
2	-3.9	5.0	-15.6
3	0.9	27.0	3.6
4	6.8	20.3	7.5
Year	1.1	19.2	10.8
1981			
1	8.8	29.4	-4.3
2	4.0	20.2	-18.9
3	-4.0	7.7	-45.7
4	-3.1	15.1	-41.5
Year	3.3	20.2	-13.4
1982			
1	-8.8	-5.4	-56.1
2	-4.3	-14.6	-26.9
3	-2.8	-13.0	-4.8
4	-3.6	4.8	69.2
Year	-4.4	-1.1*	-35.3
1983			
1	8.4	-25.6	144.1
2	7.3	-13.4	55.1
3	7.5	0.8	48.7
4	5.4	8.5	10.9
Year	3.3	-10.7*	54.8
1984			
1	4.1	5.8	39.0
2	3.0	1.3	2.7
3	6.7	3.1	1.0
4	3.4	3.0	19.3
Year	5.0	3.0	21.2

\* First yearly declines since at least 1972.

Source: Bank of Canada Review, August 1984 and October 1985 (Table 1)

(Table 1-1). Second, in November, 1981, the Canadian government changed the tax law regarding Capital Cost Allowance (CCA),(3) allowing a corporation to deduct only one half of the CCA otherwise available in the year of purchase. As this law was not effective until November, 1981, the impact of the change would not be fully felt until fiscal years beginning after this date. This change is also a plausible explanation for the increase in drawdowns of deferred tax that were observed.(4) A third explanation is that companies drew down accumulated deferred taxes in order to recognize the tax effect of accounting losses incurred during the year. This is a plausible explanation as

-----

3 The federal and provincial governments in Canada do not permit depreciation expense as an expense for income tax purposes. In its place a taxpayer is allowed to claim CCA which typically is equivalent to a declining balance method of depreciation.

4 Assume a company at steady state (nominal dollars) and all depreciable assets falling into the same class for tax purposes. In this case the amount of the drawdown resulting from the change in the tax law, can be computed by the use of the following formula:

$$\text{Draw-down} = \frac{\text{Assets Acquired}}{2} \times \text{CCA Rate} \times \text{Tax Rate}$$

This is the first year effect. For Class 29 assets a drawdown of the same size would occur in the second year and then the company would return to a steady state. With classes using the declining balance method the drawdown would continue indefinitely, but would become smaller each year.

in addition to a decline in fixed asset purchases, the recession would lead to lower profits and even losses.

The severity of the 1982 recession and the impact of the first full year of the government's decision to limit CCA in the year of asset acquisition, provides an unique opportunity to examine deferred tax behaviour and to test the appropriateness and financial statement impact of current accounting standards in a severe recession.

#### ORIGIN OF THE ISSUE

Accounting for deferred income taxes had its genesis when companies were first allowed to record depreciation for income tax purposes at a rate different than for accounting purposes.<sup>(5)</sup> This gave rise to timing differences between accounting and taxable income. Due to concern regarding the reversal of timing differences in the future with the potential for additional tax payments, and to reduce income manipulation and increase inter-firm and intra-firm compar-

-----

5 Dopuch and Sunder (1980) note that the issue of deferred taxes first appeared in 1942.

ability, accounting bodies in Canada and the U.S. mandated that these timing differences be recognized as deferred credits on the balance sheet. One result of these accounting standards has been the creation of an accumulated deferred tax account which has tended to have a credit balance that has increased over time. The debit side of the entry has resulted in a deferred tax expense account which in general has tended to lower and smooth income relative to the flow through method.

#### Two Schools of Thought

The supporters of comprehensive tax allocation would suggest that a drawdown implies that a company is not capable, despite its level of income, of claiming more CCA than depreciation recorded in the accounts. If the company is in a taxable position this will result in a drawdown in deferred income taxes and a corresponding increase in current income tax expense and therefore, a current cash outflow. If the company does not purchase additional assets in the future this reversal of timing differences and increase in current tax expense will continue in future years at an accelerating rate. Therefore, an involuntary reversal is

consistent with the arguments of the full allocation advocates and would signal that the payment for accumulated deferred income taxes is "coming due" and the present value of accumulated deferred income taxes is relatively high. The present value of the outflow could be reduced by the purchase of additional assets in the subsequent year.

If, however, a drawdown arises due to a loss in the current year, the company may claim little or no CCA as well as re-filing its prior year's tax return to eliminate its CCA claim for that prior year.<sup>(6)</sup> This means that the company will be able to claim this CCA in future years. Drawdowns of this type would lend support to flow-through advocates and would imply that the total tax shield available for future years and its present value is higher than in the case of an involuntary drawdown.

If it is found that the drawdowns relate to the recognition of accounting losses, the appropriateness of the current accounting treatment will be considered and recommendations presented. If, however, it is found that drawdowns are al-

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6 In the United States, corporations do not have the same flexibility in claiming depreciation for tax purposes. If a company does not claim tax depreciation it can not save it to claim in later years. Therefore, one would expect that a U.S. company would claim tax depreciation and have a larger loss carryforward than in Canada.

most entirely a function of inadequate fixed asset additions and thus involuntary drawdowns, strong empirical support would be provided to the theoretical arguments used by advocates of current deferred tax accounting. Never-the-less it would still be useful in light of the anticipated re-examination of this area by the Canadian Institute of Chartered Accountants (CICA) to evaluate current financial accounting standards on this issue. This is particularly true when there is reason to believe that recent behaviour of deferred income taxes is considerably different from past empirical data and also different from data that has been published on the U.S. experience during the recession.

#### REASONS FOR THE RESEARCH

The importance of studying drawdowns was clearly stated by Dirksen and Chew (1980).

"This [their observation] is not inconsistent with previous authors who found reversals in deferred taxes to be small in amount and infrequent in occurrence. Such observations suggest that there is no need to report deferred taxes on financial statements, and that the reporting policy initially set forth in APB Opinion 11 should be rescinded. However, four percent of the firms in our sample showed



significant downward trends in accumulated deferred taxes over the twelve year period studied. And until the reasons behind such decreases are understood, as well as the extent to which they are associated with actual paybacks to the government, it seems premature to argue for removal of deferred tax reporting requirements." (p.96) (emphasis added)

As indicated by the quote, investigations of deferred income tax behaviour prior to 1980 indicated that drawdowns or reversals were infrequent in number and small in dollar amount. However, in 1982, the dollar amount and number of drawdowns for Canadian companies appears to have increased dramatically.(7) Therefore, a critical research question is what explanation(s) are consistent with this change in deferred tax behaviour and the increase in drawdowns.

The most detailed Canadian study of deferred income taxes was conducted by Thomas Beechy (1983) and covered the 13 year period ending in 1980. In the conclusions to his research study he stated:

"It might be argued that extension of this study for a few more years may reveal a greater incidence of drawdowns due to the severity of the current economic slowdown. It does not seem likely, however, that significant reversals will occur even then. What the

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7 American data provided by Davidson, Rasch and Weil (1984) indicated only a marginal increase in the percentage of companies having drawdowns in 1982 relative to prior years.

evidence of the individual companies does suggest is that when a company is suffering economically, reversals tend to occur either through a write-down of CCA/depreciation tax deferrals in loss years or through CCA recapture when assets are sold. Neither of these causes is the type of occurrence that full-allocation advocates cite in support of their position. While it certainly can be argued that the current recession is more severe than we have seen for several decades, it does not follow that reversals will necessarily occur in the manner envisaged by full-allocation advocates. The evidence suggests that many companies will experience losses, and that the losses will be reduced by writing off CCA tax deferrals, with no need to pay taxes thereon. While some companies may welcome the opportunity to use deferred taxes to reduce accounting losses, it is difficult to justify this result of full allocation as an accurate portrayal of the economic impact of taxes on the corporation." (p.122)

Beechy did anticipate an increase in drawdowns during the recession, however, even he did not predict the extent and magnitude of the drawdowns that apparently occurred. Although it is anticipated that Beechy's explanation of losses causing the drawdowns is the most consistent with the actual data, it is not possible to rule out the two other competing explanations without actually conducting the research proposed in this study. It is vital to future standard setting that we know or at least can estimate the relative influences of the three potential explanations.

The FASB in Statement of Financial Accounting Concepts No.1 suggested that a primary objective of financial reporting was to provide financial statement users with information

that would enhance their ability to assess the amounts, timing and uncertainty of future cash flows.

"Financial reporting should provide information to help present and potential investors and creditors and other users in assessing the amounts, timing, and uncertainty of prospective cash receipts..." (paragraph 37)

As one of the primary user groups identified were shareholders, this would imply concern about future after-tax cash flows.

As mentioned previously, a drawdown due to an involuntary reversal -- where the corporation is unable to claim sufficient CCA to offset the depreciation recorded -- would imply that deferred income taxes are "coming due" and that future after-tax cash flows will be reduced unless the corporation acquires sufficient fixed assets in the future to offset this trend. On the other hand, if the drawdown results from a loss, the corporation does not have to use the tax shielding potential of their fixed assets, and if the loss is sufficiently large the corporation may refile its prior year's tax return and have a tax loss carryforward. This type of drawdown has a different future after-tax cash flow impact on the corporation as the loss has permitted the corporation to delay the use of its undepreciated capi-

tal cost(8) and possibly increase the available tax shields in the future.

As these two causes for a drawdown can convey different signals, a reason for the research is to determine if it is possible to separate drawdowns by cause based on financial statement data.

On the professional side, the CICA and the Financial Accounting Standards Board (FASB) initiated independent reviews of their respective country's financial accounting standards in the area of corporate income taxes. During 1983 the CICA issued a research study and the FASB issued a discussion memorandum and research report dealing with accounting for corporate income taxes.(9) The issuance of these documents and the continuing study of this area by

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8 Undepreciated capital cost is the tax term used to describe that portion of an assets capital cost that still remains to be claimed for tax purposes in future years.

9 These publications are Beechy, Accounting for Corporate Income Taxes: Conceptual Considerations and Empirical Analysis, Research Study, Canadian Institute of Chartered Accountants, Toronto, 1983. Financial Accounting Standards Board. Discussion Memorandum, An Analysis of Issues Related to: Accounting for Income Taxes, FASB 1983. Béresford et al, FASB Research Report, Accounting for Income Taxes: A Review of Alternatives, FASB 1983.

the standard setters provides evidence of interest and concern on the part of the accounting profession for greater knowledge in the area of accounting for corporate income taxes. (10)

The existence of deferred taxes rests on a premise that a company will eventually have an involuntary reversal of timing differences that leads to an outflow of resources. It is anticipated that past research looking at the extent of drawdowns in deferred tax credits has often over estimated the number of reversals that have resulted in the giving up of economic resources. Losses and particularly loss carry-forwards can create drawdowns that may well be interpreted as evidence that cash flowed out of the business (or some other sacrifice occurred), and thus, provide justification for the setting up of deferred taxes where such justification is unwarranted.

Table 1-2 shows the behaviour of quarterly deferred income tax expense on a macro scale from the first quarter of 1980 to the last quarter of 1984. Given that prior research has shown that deferred tax drawdowns are infrequent, this table reveals an unusual situation and raises the question of

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10 The CICA has suspended its study of deferred income taxes pending the release of FASB's recommendations.

TABLE 1-2

Quarterly Deferred Tax Expense For Selected Industries  
(in million of dollars)

	ALL INDUSTRIES	TOTAL MANUFACTURING	PAPER AND ALLIED IND. AND FORESTRY	METAL FABRICATING INDUSTRIES	COMMUNICATION INDUSTRIES
1980					
1	831	366	104	15	43
2	850	442	113	12	51
3	763	368	76	8	52
4	<u>746</u>	<u>309</u>	<u>-1</u>	<u>16</u>	<u>38</u>
TOTAL	<u>3,190</u>	<u>1,485</u>	<u>292</u>	<u>51</u>	<u>184</u>
1981					
1	814	390	77	1	50
2	890	489	88	6	51
3	564	209	14	1	55
4	<u>400</u>	<u>115</u>	<u>62</u>	<u>7</u>	<u>57</u>
TOTAL	<u>2,668</u>	<u>1,203</u>	<u>241</u>	<u>15</u>	<u>213</u>
1982					
1	520	233	13	3	39
2	375	228	23	-	45
3	258	28	-60	2	32
4	<u>-46</u>	<u>-201</u>	<u>-44</u>	<u>-14</u>	<u>43</u>
TOTAL	<u>1,107</u>	<u>288</u>	<u>-68</u>	<u>-9</u>	<u>159</u>
1983					
1	137	-97	-78	-6	31
2	579	322	-15	3	35
3	585	282	-15	-2	34
4	<u>346</u>	<u>102</u>	<u>-13</u>	<u>-6</u>	<u>21</u>
TOTAL	<u>1,647</u>	<u>609</u>	<u>-121</u>	<u>-11</u>	<u>121</u>
1984					
1	394	164	-39	4	27
2	517	244	30	5	36
3	565	252	59	4	32
4	<u>199</u>	<u>-136</u>	<u>-1</u>	<u>-3</u>	<u>19</u>
TOTAL	<u>1,675</u>	<u>524</u>	<u>49</u>	<u>10</u>	<u>114</u>

Source: Quarterly data for 1981 through 1984 were taken from Statistics Canada Catalogue 61-003 Quarterly, Fourth Quarter, 1984. The 1980 data were taken from Fourth Quarter, 1983.

why the significant change in deferred tax behaviour occurred and also raises the question of whether it is likely to re-occur? These data indicate that the early part of

the 1980's, specifically 1982 and 1983, was an unusual time for deferred tax behaviour, and one that requires an investigation if we are to set appropriate accounting standards in this area.

#### DIVERGENCE OF OBJECTIVES

Accounting for the impact of income taxes has been an area of controversy for at least three decades. Perhaps the main factor underlying this controversy has been the growing divergence between the rules for the computation of income for external reporting and the rules for the computation of income for the purpose of taxation. This divergence has led to differences in the computation of income and assets under the two measurement systems. Accounting for the impact of corporate income taxes is based on a presumption that some form of measurement of these differences should be reflected in corporate financial statements. Presumably this accounting is necessitated not only to evaluate the current financial position of the company and to assess its past performance, but also, to enhance the prediction of the amount, timing, and uncertainty of future cash flows.

Beresford, Best and Weber (1984) considered the differences in objectives between the two measurement systems and suggest that the growing divergence has renewed interest in the allocational aspects of accounting for income taxes.

"The flow-through method has received renewed attention in recent years because of the growing diversity of objectives between financial reporting and income taxation. The objective of financial reporting is to help financial statement users make decisions about a company, whereas the objectives of income taxation are to raise revenue and to achieve various economic, political and social goals (p.74).

While one may debate whether the objectives themselves have become more divergent over time, there is unlikely to be much debate about an increased divergence in the rules for computing income under each measurement system. The creation of Class 29 assets which allows a tax write-off over three years for certain manufacturing equipment is an example of this increased divergence.<sup>(11)</sup> Such an expansion in the computational differences between the two income measurement systems may well lead to a significant change in the magnitude and the behaviour of deferred income taxes.

The differences between the external financial accounting measurement system and the income tax measurement system

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11 Prior to the November, 1981 budget, Class 29 assets could be deducted over a two year period, at a maximum rate of 50% of cost.



created by these computational differences can be separated into two components: permanent differences and timing differences.(12) The accounting questions in this area are whether accountants should continue the attempt to reconcile the growing differences in the two measurement systems and if so, how should this be done? Therefore, as with many financial accounting issues, we have two primary issues: measurement and disclosure. There is no doubt that the two issues are inter-related, however, in this research the measurement issue will predominate until the conclusions, at which time the inter-relationship will be considered.

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- 12 APB Opinion No. 23 creates a third type of difference between accounting and taxable income. These are similar in nature to timing differences except that the timing of the reversal is considered to be indefinite, as managerial decisions will dictate the time of the reversal. Only the following items can be accorded the indefinite reversal treatment:
1. "Undistributed earnings of subsidiaries and corporate joint ventures
  2. "General reserves" of stock savings and loan associations
  3. Amounts designated as "policyholders' surplus" by stock life insurance companies." (Beresford et al, 1983)

## DEFINITIONS

### Permanent Differences

Permanent differences arise in two situations. First when a revenue or expense is included in the computation of accounting income but will never be reflected in the computation of taxable income. An example would be dividends received from a taxable Canadian corporation that is accounted for by the cost method. This is because Canadian companies effectively receive dividends from other taxable Canadian corporations on a tax free basis. The second situation is the mirror image, a revenue or expense is included in the computation of taxable income but will never be reflected in the computation of accounting income. A common Canadian example of this situation was the three percent inventory allowance that became effective in 1977. The three percent inventory allowance was removed by the 1985 federal budget. Prior to its removal from Canadian tax law, corporations were permitted to claim as a tax deduction three percent of their opening inventory. As this deduction was not considered an expense in the computation of financial statement income, it gave rise to a permanent difference. Appendix A provides a more detailed discussion of permanent differences and an illustration of how perma-

nent differences influence the computation of tax expense for the year.

#### Timing Differences

For timing differences, which result in deferred income taxes, to exist one of the following events must have occurred.

1. An amount must have gone through the income statement either as a revenue or an expense, prior to the period it is expected to be included in income for tax purposes.
2. An amount must have gone through the company's income statement for tax purposes, either as a revenue or an expense, prior to the period it is expected to be included in financial accounting income.

Table 1-3, provides a framework for considering both permanent and timing differences that exist between asset and income measurement for accounting and tax purposes. Although the emphasis of this research is on timing differ-

TABLE 1-3

Summary of Differences Between Accounting  
and Tax Measurement Systems

	Permanent Differences	Timing Differences	Net Differences
Balance Sheet	No separate nota- tion required. Net of tax approach is adopted. Some companies disclose this difference on 85(1) rollover.	Represented (proxied) by accumulated deferred taxes on the balance sheet.	Total difference between book value of net assets and their tax value at any point in time
Income State- ment	Adjusts the total tax expense for the year. Recent requirement that the individual differences be disclosed in the notes.	Does not influence the tax expense for the year, only the current tax due. Disclosure of net figure only is required. Beechy suggests disclosure of individual items.	Total difference between what income tax would be at the statutory tax rate and income tax actually payable for the year.

ences, it is believed that it is useful for the reader to understand that the accumulated balance of timing differences does not necessarily reflect the net difference between book and tax values at any point in time, as permanent differences may also be present.

### Drawdown

A drawdown will be defined as a credit entry for deferred taxes on the income statement before extraordinary items. Thus, the debit side of the entry can lead to a decrease in an accumulated deferred tax credit balance, or an increase in an accumulated deferred tax debit. The disadvantage of this approach is its failure to identify drawdowns relating to extraordinary items. Because extraordinary items, by definition, are not expected to re-occur, this exclusion is believed to be appropriate. Section 3470 of the CICA Handbook requires disclosure of the current years deferred tax in either the notes, the statement of changes in financial position, or the income statement, therefore, this figure will be available. When there is an option, the deferred tax figure will be taken from the income statement as the statement of changes in financial position may only include the non-current portion of deferred income tax if a company used working capital as its definition of funds.

There are two justifications for using an income statement approach for defining a drawdown, rather than a balance sheet approach. First, Schwartz (1983) in the U. S. and Lanfranconi and Robertson (1984) in Canada both found that accumulated deferred income tax figure could not be recon-

ciled from year to year using data available in the financial statements. Second, Canadian accounting standards permit the addition of accumulated deferred income taxes of a newly acquired subsidiary to be added to the accumulated deferred taxes of the consolidated entity. Therefore, the balance sheet approach would be confounded by factors that are not of primary interest to this research.

#### Statement, Accounting, and Taxable Income

Table 1-4, adapted from Lanfranconi and Robertson (1983), provides an overview of how permanent differences and timing differences affect the reporting of income tax expense for the current year. An efficient way to consider this area is by defining three different income figures: pre-tax financial statement (PTFS) income, accounting income and taxable income. PTFS income is the company's income before tax and extraordinary items as reported in its financial statements. Accounting income is defined as PTFS income with the appropriate adjustment for permanent

TABLE 1-4

## OVERVIEW OF ACCOUNTING FOR INCOME TAXES

PRETAX FINANCIAL			ANTICIPATED TAX EXPENSE
STATEMENT INCOME			
		T	
± PERMANENT DIFFERENCES		A	± PERMANENT TAX VARIATIONS
		T X	
= ACCOUNTING INCOME		I	= EFFECTIVE TAX EXPENSE
		M R	
± TIMING DIFFERENCES		E A	± DEFERRED INCOME TAX EXPENSE
		S T	
= TAXABLE INCOME		E	= CURRENT INCOME TAX EXPENSE

differences. (13) For example, the three percent inventory tax allowance would be subtracted from PTFS income to determine accounting income.

Accounting income is the basis currently used to compute total income tax expense appearing on the financial statements. Under current standards, the total tax expense for

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13 Some may find the term accounting income inappropriate in this context, but footnote 1 of CICA Handbook Section 3470 defines accounting income as income before tax after adjustment for permanent differences. Therefore, the author is simply adopting the authoritative legal source for the profession's terminology.

the company is accounting income times the composite tax rate of the firm. As the researcher anticipates that drawdowns are often a function of negative accounting income and since accounting income is seldom disclosed by corporations in their annual reports, it will be necessary to develop an operational definition for this figure. The approach will be more fully described in a later chapter.

Taxable income, also a figure rarely disclosed in annual reports, is the income figure that the company reports to the government for the purpose of determining taxes actually payable for the year. It is computed by adjusting accounting income for the effect of timing differences that were created during the current year. The net timing differences, times the composite tax rate, generates the deferred income tax expense for the year and taxable income, times the tax rate, gives rise to taxes currently payable for the year. With this framework in mind, it is possible to consider the present accounting for, and disclosure of corporate income taxes.



Statutory Tax Rate

The statutory tax rate will be defined as the combination of the federal and provincial income tax rates applicable to corporations for that year. The CICA Handbook refers to this as the 'basic income tax rate' (par.3470.31). If we assume that a corporation's provincial tax rate is 14% and use the current federal tax rate of 46% we would compute the statutory tax rate as follows.

Federal Tax Rate	46%
Less: Provincial abatement	(10%)
	36%
Plus: Provincial Rate	14%
Statutory Tax Rate	50%
	=====

As discussed in Appendix A, this rate will vary depending on which province and which year the income is earned, but would be expected to be some where in the range of 45-52%.

Effective Tax Rate

The effective tax rate will be defined along the lines of Accounting Series Release (ASR) no. 149. Therefore, the following calculation will be used:

$$\text{Effective Tax Rate} = \frac{\text{Income Tax Expense}}{\text{Pre-tax Financial Statement Income}}$$

- Income tax expense is defined to include both current income tax expense and deferred income tax expense.

Nature of Income Taxes

This study uses the definition that income taxes are an expense and not a distribution of income such as dividends (see Barton (1970) for the various arguments). This is based on a realization that the expense approach is embodied in current accounting practice to such an extent that change is unlikely. As Wolk and Tearney (1980) state, "custom and tradition underlie the definition of income taxes as an expense" (p.124).

OUTLINE OF REMAINDER OF PAPER

The remainder of this research document is divided into six chapters. The second chapter considers the arguments for and against tax allocation, as well as the literature on loss carryovers. The third chapter will review prior empirical research dealing with deferred income taxes and loss carryovers. In addition, it provides the implications for research that considers deferred taxes and accounting for loss carryovers simultaneously. The fourth chapter discusses the research method and reviews the results of the analysis of the behaviour of the deferred tax accounts based on the publicly available financial statements. The fifth chapter will describe the findings from data gathered directly from some of the sample companies and will outline consistencies or inconsistencies with the secondary source data analysis. The sixth chapter describes the note disclosure relating to loss carryforwards and the extent to which these losses were realized. The final chapter will present the conclusions and resulting recommendations that flow from this research.

## CHAPTER TWO

### CURRENT ACCOUNTING STANDARDS AND THEORETICAL ARGUMENTS REGARDING ACCOUNTING FOR DEFERRED INCOME TAXES AND LOSS CARRYOVERS

#### INTRODUCTION

This chapter and the next will review the literature dealing with deferred income taxes and loss carryovers. Because the literature is extensive, it was considered necessary to divide the literature review into two chapters. This chapter has three purposes. First, to outline current Canadian accounting standards for deferred income taxes and to discuss a significant difference in one area of deferred tax accounting between Canada and the U.S. (14)

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14 Waterhouse (1983) indicates that members of the Accounting Standards Committee agree that both Canada and the U.S. should have similar accounting policies. This

In so doing, the major accounting alternatives for timing differences will be discussed. Second, to consider some of the major theoretical arguments put forth by those who support and those who oppose comprehensive tax allocation. Third, to consider the literature dealing with accounting for tax loss carryovers. Empirical research that exists on deferred income taxes and accounting for loss carryovers will be considered in the following chapter.

#### CURRENT ACCOUNTING STANDARDS ON DEFERRED INCOME TAXES

##### Extent of Allocation

Three methods have been suggested for dealing with timing differences. First, the flow-through method records only the income tax payable to the government in the current year as the expense for the year. The second method, full or comprehensive tax allocation, is required in both Canada

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suggests that it would be fruitful to consider areas where the current accounting practices are different.

and the U.S. (15)(16) Under this method both the current amount of taxes payable to the government and the potential income tax effect that may arise due to all timing differences that influence income in the current year are recorded as expenses. The third method, known as partial allocation, is the middle ground. It has been adopted by the Accounting Standards Committee of the Institute of Chartered Accountants in England and Wales and the International Accounting Standards Committee. Although there are variances in how this method can be applied, the common element is that not all timing differences are given recognition in the financial statements.

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15 In Canada, the requirement to record deferred income taxes was introduced with Bulletin #26 issued by the CICA in 1967. In the U. S. APB Opinion No.11 was also issued in 1967.

16 Section 3470 of the CICA Handbook exempts certain regulated companies and companies operating under long-term cost plus contracts where cost is defined to include only the payable portion of income taxes.

Measurement Issues

Once the extent of tax allocation is decided upon, it is necessary to determine the rate to apply to the timing differences. Two alternatives exist. First, the deferral method, which is currently used in Canada and the U.S., requires that all timing differences that lead to an increase in the deferred tax account be set up at the statutory tax rate in effect when these differences occur.<sup>(17)</sup> Under the deferral method, no adjustment is made to the deferred tax account for a subsequent change in the tax rate. Therefore, the deferral method requires that if a drawdown occurs, it be computed using the average rate of accumulation in the past, not the current tax rate. This is necessary to ensure that if all timing differences are eventually eliminated, the accumulated deferred income tax account would have a zero balance.

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17 Although not as common it is possible to have accumulated deferred tax debits. These indicate that expenses for accounting purposes have been greater than for tax purposes. In line with a conservative bias in accounting, deferred income tax debits can be set up only if there is reasonable assurance that they will be reversed in the future. When these arise, they are also set up at the current rate and drawdowns are at the average rate.

*E*  
An alternative, the accrual method, sets up timing differences at the rate that is anticipated in the future when the timing differences are expected to reverse. If income tax rates are expected and actually do remain stable the practical difference between the accrual and deferral methods is minimal. However, if tax rates change, then under the accrual method the "accrued" debit or credit is adjusted to reflect this change in the tax rate. Due to this adjustment, the accrual method is more consistent with a liability view of tax allocation.

Some advocates of full tax allocation believe that discounting<sup>18</sup> is the appropriate way of dealing with deferred tax credits (Milburn, 1982).

"This [not discounting] seems inconsistent with the business reality that tax dollars payable in the future are not as onerous as tax dollars payable today." (p.45)

Milburn points out that one of the critical questions in discounting is: "when timing differences should be deemed to reverse (be paid)." (p.45) The critical word here is

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18 Paragraph 3470.22 of the CICA Handbook specifically forbids the discounting of accumulated deferred income tax.



"deemed" for his argument does not require actual cash payments for taxes. He defined "paid for" earlier in his paper as the "claiming of capital cost allowance in excess of depreciation on subsequently acquired machines." (p.43)

His proposal for discounting appears to imply that depreciation and CCA on assets the company currently owns be projected into the future and then present value. The difference between the present value of these two expense streams, after adjustment for income tax rates, would represent the discounted value of accumulated deferred income taxes.

Besides the added complexity, and the need to determine the date of reversal as well as an appropriate discount rate, those who advocate discounting would presumably adopt the accrual method for deferred income taxes. The use of the accrual method would be necessary as it is consistent with a liability view of timing differences that discounting would imply.

Presentation and Disclosure

The final decision on income tax allocation is presentation in the financial statements. To a large extent the options are contingent on prior decisions. The first option would present the tax effect of all timing differences in aggregate as a separate balance sheet item. The only difference between this approach and that adopted in Canada and the U.S., is a requirement that deferred income taxes be separated into two accounts: those that arise from items classed as current assets and liabilities, and those that arise from non-current assets and liabilities. The second option, net-of-tax, requires that timing differences be offset against the assets or liabilities that gave rise to them (Corey 1967).<sup>(19)</sup> The third option, suggested by Graul and Lemke (1976), would treat at least some timing differences as an "equity investment by the government." (p.14).<sup>(20)</sup> A final approach, "note" disclosure of the dif-

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19 Footnote 2 on page 1925 of the CICA Handbook indicates that the Research Committee does not believe that the net-of-tax approach is appropriate for dealing with timing differences.

20 Paragraph 3470.27 specifically states that non-current deferred tax credits should be shown outside of shareholders' equity.

ferences is not really tax allocation accounting but is included here for completeness. As this last approach deals with note disclosure, it could be used to supplement any accounting method chosen for dealing with timing differences.

#### Additional Point

An additional point of interest, because of a difference in treatment between Canada and the U.S., arises in accounting for the initial purchase of a company to be consolidated. In the U.S. the deferred taxes of a newly acquired company can not be carried over to the accounts of the consolidated entity. In Canada, the accumulated deferred taxes may be incorporated in the purchase equation and thus would be treated in the same manner as a liability in this computation. As paragraph 89 of APB no. 16, Business Combinations and paragraph 1580.47 and .48 of the CICA Handbook require that the tax status of assets and liabilities be considered in the assignment of fair values, it is likely that these two methods result in different fair value assignments. It is likely that the Canadian method would give rise to a de-

ferred tax account larger than under U.S. accounting standards, as the accumulated deferred tax of the acquired company would be added to the deferred tax of the parent upon consolidation.

#### THEORETICAL DISCUSSION

The purpose of the following discussion is to provide the major arguments for and against tax allocation and to derive what a drawdown may imply to the supporters of each.

#### Matching Revenues and Expenses

Full allocation advocates argue that recording timing differences results in better matching of revenues and expenses.<sup>21</sup> As financial statement income is based on

21 It may be argued that the matching principle is not ap-

accounting income and not taxable income we should match to the income of the period all expenses incurred to earn that income. As Sands (1959) states:

"if governmental regulations require accounting income to be shifted from some years to others in order to determine taxable income, the taxes so determined must be adjusted to compensate for that shift, in order to determine the amount of tax expense applicable for the year." (p.584-5)

In discussing the arguments for interperiod tax allocation the FASB Research Report (1983) on the topic states:

"They [full allocation advocates] contend that under the flow-through method, the tax recognized would erroneously bear no relation to the pretax income shown in the financial statements. In one year it would be too high; in another it would be too low. They say interperiod tax allocation achieves better matching because it reports as tax expense amounts that are directly related to earnings before income taxes." (p.21)

The underlying basis of the full allocation argument is that the creation of a timing difference in the current period will result in the company suffering some economic sacrifice in a subsequent period. Because of this, recognition of this sacrifice, by means of recording deferred income taxes, should be given in the current period.

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plicable in the case of deferred income taxes as an expense is being matched to income and not to revenue.

In countering these arguments those opposed to full allocation argue that it is taxable income that leads to tax expense and not accounting income.(22) They suggest that recording deferred income tax expense results in artificial smoothing.

"Flow through advocates claim that interperiod allocation is an attempt to normalize income and, thus, make it more predictable. Although they acknowledge that interperiod tax allocation might result in "smoother" reported earnings, they believe that the resulting figure is artificial, therefore, it can be used to predict only an artificial future income number, and its predictive value is not meaningful." (FASB 1983, p.21)

There is little doubt that recording deferred income taxes leads to a smoother income pattern than the flow through method, and this by itself is not necessarily wrong as one outcome of the matching principle embodied in our current accrual accounting system is a smoothing of reported income. However, whether artificial smoothing occurs or not is almost impossible to determine as it requires knowledge

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22 Two arguments often advanced by flow through advocates are that income taxes bare no relationship to benefits received by a corporation and that income taxes are simply a fee for being able to do business in a country that is levied based on income. These arguments appear to be concerned more with whether income taxes are an expense as opposed to whether deferred income taxes should be recorded.

of economic income to serve as a comparison. But, if tax rates tend to vary over time then both the accrual and the deferral approach will fail to keep a consistent relationship between tax expense and income before tax. This point is brought out by Beechy (1983).

"If the goal of tax allocation is to normalize the income tax expense as a proportion of pre-tax income then, when rates change, both methods will fall short of the ideal. The deferral method will cause "distortions" when timing differences reverse, while the accrual method will cause distortions when the rates change or are expected to change." (p.32)

Personally, I have difficulty accepting the argument of a consistent relationship between tax expense and income before income tax as a suitable justification for recording deferred income taxes. With the existence of many permanent differences a consistent relationship between total tax expense and income before tax does not necessarily exist. Lanfranconi and Robertson (1983) argue that one of the factors leading to the requirement to disclose the difference between the statutory and the effective tax rate is the recognition that this relationship does not hold.

### Liability Criteria

While full allocation is often justified by invoking the matching principle, supporters of this method often suggest that accumulated deferred income taxes are a liability. They stress that financial accounting takes a broader view of liabilities than that of a legal liability. Therefore, although there is not a legal obligation to pay accumulated deferred taxes they still are consistent with the accrual concept.

"[O]ur accrual basis of accounting is not tied to legal form, but endeavors to reflect the economic substance of obligations arising from past events and transactions." (Milburn 1982, p.41)

Writing about the Canadian position Sands (1959) states:

"deferred credits are really liabilities, not necessarily liabilities in the legal sense but liabilities in the economic sense." (p.589)

and

"The deferred credit is equally as important to a correct statement of liabilities as it is to a correct matching of revenues and expense." (p.589)

I consider this view of deferred income taxes to be a FIFO interpretation of timing differences. Under this interpre-



tation each dollar of depreciation and each dollar of CCA is implicitly identified with a particular asset. Viewed this way there is no debate that in a profitable, growing company that these individual dollars are initially deferred then in time reverse and are paid out to the government, while at the same time they are replaced by other dollars that are deferred. This view of deferred income tax is consistent with the reconciliation technique used on a T2S(1) tax form(23) that converts financial statement income to income for tax purposes. The FIFO view reflects the form of the transaction but in accounting we are ultimately interested in the substance of the transaction.

The second interpretation is the indefinite deferral view that concentrates on the balance sheet amount and can be compared to a LIFO view of deferred income taxes. The critical question under this interpretation is what conditions must arise in the future to lead one to conclude that the dollar figure on the balance sheet is other than a permanent contribution of capital.

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23 A T2S(1) form begins with financial statement income after tax and then adjusts for all permanent and timing differences to arrive at income for tax purposes. Two of the entries on this form are the addition of depreciation expense and the deduction of capital cost allowance.

Milburn (1982), in presenting his argument for liability treatment, provides his opinion of the differences between these two views of deferred income taxes.

The indefinite deferral argument erroneously focuses only on the payment of taxes to the tax authority. It fails to take into account what happens when new timing differences are used to offset the reversal of former timing differences. Reasoning within generally accepted accounting principles, it can be demonstrated that using the tax deductibility of new assets to offset reversing timing differences is just as real an economic outlay as the payment of taxes." (p.42)

Under Milburn's FIFO interpretation the probable future sacrifice or transfer need not be cash but rather the claiming of CCA on future fixed asset additions. Under his argument it would be expected that such a transfer of assets would lead to a decrease in the value of the asset. But that is not what occurs. Instead, it leads to an increase in the liability. Therefore, while I believe that Milburn's argument is supportive of a net-of-tax basis of accounting for timing differences, it is not supportive of liability treatment.

Besides the indefinite deferral argument, flow-through advocates counter the interpretation of deferred income taxes as a liability by arguing that no obligation has yet been incurred as the existence of the liability depends on a fu-

ture event -- the earning of taxable income -- and not solely on past events. This dependence on a future event to confirm or deny the existence of an obligation raises the issue of contingencies.

#### Nature of a Contingency

Full allocation advocates argue that not recording tax allocation credits implies that these taxes have been eliminated and not simply deferred. This argument ignores the fact that there are many contingent events in financial accounting that are not recorded on the financial statements but instead are handled by note disclosure.

Current criteria for recording a contingent loss are provided in Paragraph 3290.12 of the CICA Handbook

"The amount of a contingent loss should be accrued in the financial statements by a charge to income when both of the following conditions are met:

- (a) it is likely that a future event will confirm that an asset had been impaired or a liability incurred at the date of the financial statements; and
- (b) the amount of the loss can be reasonably estimated."

The notion of deferred income taxes being treated as a contingency is brought out by Thornton (1983).

"The deferred tax account, then, is best viewed as a deferred benefit which is neither a liability nor an item of owners' equity, but which may become owners' equity if the timing differences that caused it are some day reversed." (p.145)

Barton (1970) also raises the notion of a contingency with respect to deferred income taxes.

"The most that could be claimed for the deferred tax charge in these circumstances is that it is a contingent liability." (p.12)

To accept the contingency argument requires that an assessment be made of the likelihood "that an asset had been impaired or a liability incurred at the date of the financial statements". Two future events must occur for a liability for deferred income taxes to exist at year end. First, a company must have a reversal in its timing differences and second it must generate sufficient income to be taxable. If these future events are deemed to be likely one would argue that a liability does in fact exist at year end and should be reflected on the financial statements. If, however, the joint probability of these events is deemed to be unlikely or not determinable then the contingency approach would suggest that deferred income taxes should not

be recorded on the face of the financial statements. In this situation, a decision on note disclosure would be necessary. The contingency argument (ie. note disclosure) would be strengthened if it is found that few of the observed drawdowns result in an outflow of resources. That is, the drawdowns occurred in loss years.

#### Permanence of Deferral

The contingency argument used by some flow-through advocates, and the lack of permanence of deferral used by full allocation advocates have remarkable similarities. Davidson (1958), a flow-through advocate, at least with respect to CCA/depreciation timing differences, provides four criteria, adopted from Moonitz, for determining whether the deferral of taxes is permanent.

1. Are tax rules for depreciation methods expected to remain as generous as they now are?
2. Will a policy of regular investment in assets subject to depreciation be maintained?

3. Are tax rates expected to remain substantially at their current levels? and
4. Is taxable income expected to emerge each year in the foreseeable future?

Davidson argues that if the answer to the first two questions is affirmative then there is no need to consider the two other questions. However, during the recessionary period around 1982 it is not possible to provide an affirmative response. The introduction of the half-year rule in late 1981 requires a negative response to the first question, and it is likely that for some companies during the recession a negative answer is required for the second question. It is difficult to answer the third question but it is unlikely that any significant increase in corporate income tax rates is on the horizon. This means that consideration should be given to the fourth question- did companies incur losses?

Full allocation advocates argue that while the above criteria are necessary for permanent deferral they are unlikely. Sands (1959) provides the necessary conditions.

"the corporation will never die nor permanently decrease its investment in depreciable assets; or that

before the deferment becomes payable the corporation will begin to suffer losses to the extent that no taxes are payable even with the reduced depreciation allowances available...or that before the deferment becomes payable the government will change the tax regulations in such a way as to make it permanent." (p.585)

It is interesting to consider Sands second condition, that of a company suffering losses. In it, he is assuming that a company is in decline, as he states "even with the reduced depreciation allowances available." As Chapter One indicated, and the end of this chapter will pursue, drawdowns can occur even with adequate CCA available, providing the company has incurred losses. The critical research question is: how often do drawdowns of this nature occur? The accounting question is: whether recording drawdowns to recognize the benefit of losses is consistent with the reasons for recording deferred taxes initially?

A somewhat related point was made by Spacek (1968) when he stated:

"The principle presumption on which it is now being argued that the rolling type of deferred tax will never have to be paid, is the presumption that from here on everything will always be up - that there will never again be serious financial strains such as depressions or recessions, and if there is, we will have only operating losses for tax purposes anyway." (p.273)

This quote strikes at the heart of the research underlying this study. That is, we did have a severe recession in 1982, and it appears that we did have an unusual number of drawdowns. What we do not know is whether they related to operating losses for tax purposes or some other explanation.

#### Assumptions about the Future

Full allocation advocates argue that it is inappropriate, under the historical cost model, to look forward in time and assume that the company will purchase sufficient assets to offset any net reversals. At the same time they counter the arguments of the flow through advocates by stating that it is reasonable to assume that sufficient profits will be earned in the future.

"Advocates of tax allocation must agree that sufficient taxable income has to be earned in the future period when the timing difference reverses for there to be any tax affect as a result of the reversing timing difference. But they argue that the earning of sufficient taxable income is a probable future event that follows from the timing differences originating in the current period." (Milburn, 1983,p.23)



An additional inconsistency is the argument behind drawdowns to recognize loss carryovers. As is illustrated in Appendix B, the deferred tax account can be drawn down for future reversals in timing differences that will occur if a company does not claim CCA in the carryforward period. A study of drawdowns would allow investigation of the extent of drawdowns created by anticipated future reversals.

#### Outflow of Resources

Clearly, the argument is not whether the future should be considered in financial accounting, instead, it is what are the most reasonable assumptions to make about the future.

Support for full allocation often includes an argument, at least implicitly, that drawdowns and outflows of resources will coincide. Typically this outflow of resources is equated with a payment of taxes.

This point of payment being required in the future was made by Cawsey et al (1973).

"If the firm expects to pay increased taxes in the future because of accelerated depreciation, it can be argued that the deferred tax credit should be set up." (p.9)

Barton (1970) indicated the expectation of an outflow of resources as the traditional justification for deferred income taxes when he stated:

"The procedure normally adopted is that the excess of the accounting charge (the 'tax expense') over the legal liability should be credited to a Provision for Deferred Tax Account, and when in later years the legal liability exceeds the accounting charge, such excess should be taken from the Provision Account and not charged against the current year's income." (p.9)

Mateer (1965) used the cash flow argument as a justification for tax allocation, stating:

"The intention of the government in allowing accelerated depreciation is therefore not to change the total tax liability due to this law, nor to change net income. Rather, the intention is to improve the cash-flow pattern of the corporation by requiring lower cash disbursements in early years." (p.586)

Price Waterhouse (1967) noted this point when in commenting on their study, they stated:

"What has happened... is that earnings and stockholders' equity have been reduced and a liability set up, for which is in essence a remote contingency. The charges against the corporations' earnings have not been for a tax cost which has any reasonable probability... of having to be paid out in cash." (p.6)

Dewhurst (1972), writing on the same point, stated

"The deferred credit (or any other) designation does not alter the fact that the provision for income taxes is fictitious and hence the offsetting credit is false, unless an eventual outflow of resources to the tax authorities is forthcoming." (p.45-6)

In describing the justification for deferred income taxes Drummond and Wigle (1981) stated:

"The concept envisages that deferred tax will be brought back into the income statement in future years when the timing differences reverse and the taxes assessed exceed the charge based on the accounting income of those future years." (p.57)

Milburn (1982) adopts a position in support of full tax allocation that does not look to whether a cash outflow will occur to justify the deferred tax credit. Utilizing FASB's definition of a liability, (24) he argues that as the tax deductibility of a company's assets are used up, they must purchase new assets in order to offset the reversals on the old assets. It is this need to record CCA in excess of the depreciation on the new asset that he considers a future sacrifice. He states

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24 It is interesting to note that Rosenfield and Dent (1983) adopt the same definition of a liability and conclude that deferred income tax is not a liability.

"The reversals of existing assets timing differences still occur, however. The actual payment of taxes on these reversals is avoided only by making an economic sacrifice in lieu of payment, that is, by expending resources on new assets and sacrificing a commensurate part of their tax deduction potential."  
(p. 44)

This argument implicitly assumes that if the company does not claim CCA in the current year it will have a cash payment to the government and a drawdown of deferred income tax. In other words the two events will coincide. But, this is not necessarily the case, for the company may not record CCA, have a drawdown, and not have a cash payment to the government, if it incurs losses.

#### ACCOUNTING FOR TAX LOSSES

##### Introduction

Losses for tax purposes pose an interesting, if not confusing, problem for accounting measurement. Prior to recent budget amendments, non-capital losses had to be carried back one year with any remainder carried forward up to a maximum of five years. To avoid the complications of the transitional rules the discussion will be based on the old rules. As the research plan covers only one year under the new rules, this being a transitional year, it is believed to be more appropriate to consider the old rules. The im-

plications of the tax law revisions will be considered in the conclusions to this research. (25)

#### Current Accounting Standards

A tax loss in the current period can be decomposed into two parts: a carryback and a carryforward. A loss must first be carried back one year to offset any taxable income in the prior year and the corporation is entitled to a refund. (26)(27)

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- 25 Under the revised tax law, any corporation, after 1983, will be able to carry their loss back three years. If a loss still remains it can then be carried forward seven years. These rules apply to small businesses in 1983, but for other companies the loss may be carried back only two years and then forward seven. The effect of these provisions should be to reduce the number and amount of loss carryforwards, but by no means will they be eliminated.
- 26 The corporation can not receive a refund greater than the amount of taxes actually paid to the government in that year.
- 27 A company may, if it files the necessary forms promptly, revise its CCA claim for the prior year. This could result in an increase in taxable income for the prior year and thus an increase in the amount of the loss carryback. This would have two effects. First, it transfers a loss carryforward into undepreciated capi-

Under current accounting standards this refund is shown as a credit to current income tax expense in the year the loss occurs. If, after carrying the loss back, a tax loss still remains then we have, for tax purposes, what is referred to as a loss carryforward.

In Canada, the CICA has prescribed three methods of dealing with a loss carryforward, which depend on the degree of certainty of eventually realizing the tax benefit of the loss. The first method focuses on the conservatism issue by outlining three conditions that must be present for a company to be 'virtually certain' of realizing the tax benefit of a non-capital loss. (28) If all of these stringent

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tal cost, and second, because it leads to a reversal in timing differences, it will lead to a drawdown in deferred income taxes.

28 The following three conditions must be present for virtual certainty to be deemed to exist:

1. the loss results from an identifiable and non-recurring cause.
2. the corporation has a record of profitability over a long period of time, with any occasional losses being more than offset by income in subsequent years.
3. there is assurance beyond any reasonable doubt that future taxable income will be sufficient to offset the loss carryforward and will be earned during the carryforward period. In assessing this it is acceptable to consider that the company can maximize

conditions are met the company should set up an asset to reflect this future benefit (3470.46). The asset set up is valued by multiplying the current tax rate times the amount of the tax loss carryforward. If, in the future, the tax rate changes, the carrying value of the asset should be adjusted to reflect this. Some may find this adjustment in carrying value as inconsistent with a deferral approach to tax allocation, but what needs to be remembered is that this figure signifies an asset and thus, is not considered part of deferred taxes.

In the second, and more common case, the conditions of virtual certainty are not met. In this case the recognition of the loss depends on the existence of accumulated deferred tax credits at the time the loss is incurred. If deferred

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its taxable income by not claiming certain expenses during the loss carryforward period. . (paraphrased CICA Handbook paragraph 3470.43)

tax credits do exist they are reduced to the extent that these can be reversed in the carryforward period. (29)(30)

Paragraph 3470.47 of the CICA Handbook states:

"such reductions or eliminations provide a means of realizing the tax benefit, and it is therefore appropriate to recognize the tax benefit of the loss carryforward as a reduction of the accumulated deferred income tax credits to the extent that such credits could be reduced within the carryforward period." (emphasis added)

If, in the carryforward period, the company earns sufficient income to not require the anticipated reversals, then the deferred income tax credits should be re-instated. The credit is to accumulated deferred income taxes, while the debit is to deferred tax on the income statement.

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29 In a conversation with Ms. Christina Drummond, associate director of accounting research for Price Waterhouse, she indicated that paragraph 3470.48 is somewhat ambiguous. The basis for this comment is that companies do not interpret the word 'could' as being the maximum amount of the credits that could be reduced within the carryforward period. The extent of this ambiguity and its implications are unclear.

30 Appendix B, provides an explanation of the accounting entries and rules that govern drawdowns for losses.



The third case arises when a loss carryforward exists and there are no deferred tax credits, or the amount of deferred tax credits are insufficient to permit full recognition of the loss. In this case conservatism triumphs and the company is not allowed to recognize the benefit of the loss, but instead must disclose the amount of the unrecognized loss in the notes. It is only in this case that a company is required to make any disclosure of the unrealized tax loss carryforward. In other words, the note disclosure requirement relates only to the unrecognized portion of the loss carryforward and not the unrealized portion.<sup>(31)</sup> If, in a subsequent period the unrecognized tax benefit is realized it is treated as an extraordinary item.

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31 Lanfranconi and Robertson (1984) identified ten companies in their sample that disclosed data on loss carryforwards. Only one of these companies disclosed both the unrecognized and the unrealized amount.

### Prior Literature

As discussed previously, accounting for income taxes rests mainly on the matching concept, therefore, it seems appropriate to recognize, in the year of the loss, the economic benefit of carrying the tax loss back to the prior year. There is almost no uncertainty of realizing this benefit and the benefit relates to the events of the current year. In the review of the literature no disagreement with this treatment was found.

When there is a loss remaining after carry-back we enter a controversial area that has received little attention. (32) Wolk and Tearney (1973) point this out, stating:

"Although the general situation [income tax allocation] has received an enormous amount of attention, one important facet [tax loss carryforwards] has been largely neglected." (p.292)

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32 In evaluating the U.S. literature on loss carryforwards, the reader should be aware that prior to the Economic Recovery Act of 1981, losses were carried back three years and forward five years.

The accounting issues are; when should we give recognition to a potential economic benefit that depends on future success of the business to be realized and how should this benefit be accounted for. The existence of a potential asset is noted by Van Horne (1963) when he stated:

"The importance of the loss carryforward provision to a company is, of course, that it preserves valuable cash which otherwise would have to be paid out in taxes." (p.56)

We have a clear conflict between the matching principle, which would suggest recognizing the benefit in the year it arose, and conservatism, which suggests that uncertain future benefits should not be recognized until they actually occur (are realized). (33)(34)

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33 An example of such a cash saving is evident in Chrysler Corporation in the U.S. At December 31, 1981, the company had a total of \$2 billion of operating loss carryforwards. By the end of 1984 the company had no operating loss carryforwards having utilized them by eliminating \$1,349.8 million of taxes payable. It was also in 1984 that deferred taxes began to reappear on the company's balance sheet.

34 It is interesting to note that if a contingency approach were adopted for loss carryforwards the future benefit of the loss would not be recognized until it is realized. This is based on the requirements of Section 3290 that even likely contingent gains not be recorded

Van Horne (1963) separated a loss carryforward into two factors that must happen for realization of the benefit to arise: "(1) a prior year loss; and (2) a profit in a subsequent period" (p.59). He argued that because the existence of a loss does not assure realization, then the realization of the tax benefit is "directly related to the profitable year, when the carryforward is realized" (p.60). (35)

Williams (1966) takes exception to Van Horne's conclusion that loss carryforwards should not be recognized until they are realized. He views this as an abandonment of "the generally accepted accrual basis of accounting" (p.228). Instead, Williams argues for recognizing the benefit of the loss (by setting up an asset) on the following grounds. First, the matching of revenues and expenses suggests that the tax benefit of the loss should be recognized in the

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in the accounts but instead be given note disclosure treatment.

35 It should be noted that this line of reasoning is consistent with accounting for a loss carry-back, for in that case we do not recognize the benefit until both the profitable and the loss year have occurred. In other words, we recognize the loss carry-back when realized. However, the delay in recognizing the benefit of the loss carryforward is inconsistent with the matching principle.

year of the loss because any subsequent realization is simply a recovery of the expenses incurred in the loss year.

"The full accrual of loss carryover credits appears to be in harmony with the matching concept." (p.231)

Second, he argues that a loss carryforward meets the test of being an asset.

"In addition to possessing future economic benefits, loss carryovers meet the second test for assets of being related to current or past transactions." (p.230)

To this point Williams adds a qualification; the company must reasonably anticipate the realization of the loss carryforward. However, this qualification is not unlike a general qualification for any asset. For example, if a company does not reasonably anticipate the collection of its accounts receivables then they do not meet the test of being an asset.

His third point is the setting up of an asset "provides more effective financial reporting than does burying this important economic benefit in a footnote that may not be read or clearly understood" (p.231). He then goes on to point out that management, and not the external user, are in the best position to assess the value of the loss

carryforward. Williams' concern about footnote disclosure may be attacked by supporters of the semi-strong form of the efficient market hypothesis (EMH) who would suggest that note disclosure is adequate. Furthermore, EMH supporters would likely prefer note disclosure to drawing down deferred taxes because the note provides data as to the amount of loss carryforward unrealized, whereas the drawdown approach does not.

If, subsequent to setting up the asset, an adjustment is required because the company does not expect to receive the full benefit of the loss carryforward Williams suggests that it be treated as a prior period adjustment.

Laibstain (1971) considered the accounting for loss carryforwards subsequent to the issuance of APB Opinion 11. Therefore, he was required to consider the interaction of timing differences and the loss carryforward. (36) His basic argument centered on what he perceived as an inconsistency

36 The American position on accounting for loss carryforwards is similar to the Canadian position. According to Financial Accounting Standards: Explanation and Analysis tax loss carryforwards are recognized by drawing down the deferred tax credits created in the carry-back period. In addition, any remaining loss carryforward must be recognized by drawing down accumulated deferred taxes if they still exist.

in Opinion No. 11. He noted that while paragraph 45 disallows recognition of the loss carryforward except in cases where realization is assured beyond reasonable doubt(37) paragraph 48 permits the drawdown of accumulated deferred taxes to recognize the benefit of the loss.

"net deferred tax credits should be eliminated to the extent of the lower of (a) the tax effect of the loss carry forward, or (b) amortization of the net deferred tax credits that would otherwise have occurred during the carryforward period." (p.343: quoting from APB Opinion No. 11)

He later states:

"[T]he effect of the provisions of opinion 11...do result in recognizing the tax benefits of loss carryforwards in the loss year in situations where doubt does exist as to the future realization of the carryforward." (p.348)

Laibstain suggests that the tax effect of losses should not be recognized by any means unless the benefit is assured beyond reasonable doubt. When, and if, the loss carryforward is realized it should, in his opinion, be

37 The term "beyond reasonable doubt" should be equated with the Canadian term "virtual certainty", and not confused with "reasonable assurance". However, paragraph 48 allows the writing off of deferred tax credits in the case of a loss carryforward.

treated as an extraordinary item. The justification for his conclusion is to eliminate the inconsistency that exists in APB No. 11, but he also makes a point that is very much related to the previous theoretical discussion on deferred taxes.

"While we are, because of uncertainty, unable to permit the better matching inherent in recognizing tax benefits of carryforwards earlier than at realization, we should not write off deferred tax credits and charges until they reverse; because it is expected that when they do reverse, they will have a tax effect." (p.348) (emphasis added)

Wolk and Tearney (1973) note that the drawing down of deferred taxes can give rise to "the correct accrual accounting credit for taxes..."(p.295). Unlike Laibstain, they do not object to the drawing down of deferred tax credits to recognize loss carryforwards, as they believe this action leads to better matching.

"Because the avowed intention underlying allocation is better matching, we would prefer booking the carryforward benefit in the loss year. But at the very least, a vast improvement could be made where balance sheet conservatism is desired by allowing reversal of deferred credits up to the amount of the carryforward in order to adhere as closely as possible to the correct accrual for the income tax credit in the loss year." (p.299)



The authors appear to support recognition of the benefit associated with the loss in the year of the loss but are willing to accept recognition by drawing down the deferred tax credits, instead of the setting up of the asset.

"We...see an inconsistency in keeping deferred tax credits intact that indicate greater than normal tax liabilities in the future while refusing to recognize important potential tax benefits." (p.297)

This hi-lites the basic point of drawing down deferred tax credits. Although, the journal entry is a debit to the accumulated deferred tax account, it is by no means an outflow of resources. Instead, it is the recognition of a potential benefit that is offset against the credit balance of the deferred tax account.

#### IMPLICATIONS FOR RESEARCH

In summary, the traditional support for full allocation is that it leads to improved matching and represents an amount of future sacrifice. Supporters of full allocation accept that the deferred tax credit account may show growth for a long period of time but this, in their minds, is only an

indication that the company has deferred an increased amount of taxes that will one day lead to a sacrifice by the company. Therefore, supporters of full allocation can not simply show that deferred taxes tend to decrease at various times, but must show that this decrease coincides with an outflow of resources.

The flow through advocates suggest that net drawdowns are infrequent and when they do occur they will seldom coincide with actual sacrifices as the company will typically not be taxable. Although rarely suggested in the literature, what we would expect to see is the recognition of a benefit by drawing down deferred taxes and not the occurrence of the future sacrifice suggested by full allocation advocates.

If deferred taxes are really a liability, and this is partially a conceptual question, then one would expect that most drawdowns (ie. a decline in the "liability") would result in an outflow of resources. Therefore, it will be necessary to gather data on the deferred tax behaviour of a sample of companies to determine the possibility that there was an outflow of resources coincident with those companies which had a drawdown. The data gathered will have to include measures of those factors that can lead to both buildups and drawdowns in order to assess the symmetry of

the factors and some measure of income in order to investigate the suggestion of flow through advocates who argue that the standard situation for a drawdown is one where a company has a loss. In addition, because of the prohibition on consolidated tax returns in Canada, it will be necessary to gather some internal data from the consolidated entities in the sample to more fully understand the importance of this factor on deferred tax behaviour.

#### SUMMARY

This chapter has indicated the various arguments that have been put forward in support of the alternative means of allocating timing differences. In many cases these arguments are conceptual and not easily testable by empirical research. However, there is an underlying difference in the factors that the full allocation advocates would expect to be associated with drawdowns and those factors that the flow-through advocates would expect to be associated with drawdowns. It is these differences that will form the basis of investigation of the recent drawdowns in the hope of establishing the validity of the various arguments.

Another important point developed in this chapter is that there is little written on the interdependency of accounting losses and deferred taxes. This topic will be investigated in Chapter Four and more fully analyzed in Chapter Six. Prior to pursuing this investigation it is necessary to consider what past empirical research has told us about deferred income taxes and their interaction with losses. This is the topic of the following chapter.

## CHAPTER THREE

### PRIOR EMPIRICAL RESEARCH AND MODEL DEVELOPMENT DEALING WITH DEFERRED INCOME TAXES AND ACCOUNTING FOR LOSS CARRYOVERS

#### INTRODUCTION

This chapter reviews the empirical literature on the topic of deferred income taxes and accounting for tax loss carryovers. Although the literature on deferred taxes is extensive, little empirical data exists on the interaction of deferred income taxes and loss carryovers. It is not clear why this paucity exists, however, I believe it is due to the absence of appropriate economic conditions to allow for such a study. Such conditions existed in the recessionary period of the early 1980's and therefore, provide an opportunity for researching this interaction.

The first section of this chapter deals with studies relating generally to deferred income taxes. The second section, which is brief due to a lack of prior study, deals with accounting for tax loss carryovers. The final section serves as a unification of chapters two and three by considering the implications for future research.

#### EMPIRICAL STUDIES RELATING TO DEFERRED INCOME TAXES

A review of the literature indicates three types of studies relating to deferred income tax. First, descriptive studies providing a tabulation of the magnitude of deferred taxes and the number and extent of drawdowns. A study by Beechy (1983), could be viewed as an extension of this group as it was descriptive in nature. However, it will be discussed separately as its use of internal company data is a significant departure from most prior studies. The second group of studies have been labelled model building, as they outline those factors associated with changes in the accumulated deferred tax account. None of these studies explicitly incorporated accounting losses. The third group

is composed of market based studies. These studies have attempted to determine the association between stock market prices and earnings on both a flow through basis and deferral basis and also whether the stock market views deferred taxes as debt or equity.

#### Descriptive Studies

One of the first studies(38) of deferred tax behaviour was conducted by Price Waterhouse & Co. (1967). It is also the only study located, other than Beechy, (1983), that used internal company data. The sample consisted of 100 large U.S. companies over the period 1954-1965. Of the companies having an income statement entry for deferred income tax only 7.4% had a drawdown. On a dollar basis, deferred tax drawdowns were only 2.1% of deferred tax buildups. Deferred income taxes represented 6.5% of income, but it is not known what income figure was used.

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38 A summary of these descriptive studies is provided in Table 3-1 and Table 3-2.

Cawsey et al (1973) conducted the first published Canadian study of deferred income taxes. Over a ten year period (1958-67), for 229 large Canadian companies that used deferred income taxes for some portion of the study period, 1368 debits and 141 credits to income were found, or a ratio of 9.7 to 1.0. In dollar terms, the ratio of charges to the income statement for deferred income tax relative to credits was 28.4 to 1.0. In terms of companies, 68 (29.5%) of the companies had at least one income statement credit for deferred income taxes during the ten-year study period. The average size of a drawdown was approximately \$399,000, while the buildups averaged \$1,169,000.

Dewhirst (1972) refers to an unpublished study by McCalden (1970) which examined 36 companies selected from the sixth edition of Financial Reporting in Canada. Over the 15-year period ending in 1968, the dollar value of drawdowns were only 3.5% of buildups. For 1969 and 1970 the data for the same companies indicated drawdowns were higher, averaging 10.3% of buildups.

Smith and Vangermeersch (1973) investigated the magnitude of deferred income taxes and its effect on the financial statement ratios in fiscal 1970 for 495 companies listed in



TABLE 3-1  
SUMMARY OF PRIOR STUDIES USING U S DATA

	Price Waterhouse	Smith & Vangermeersch	Davidson Skelton & Weil	Lantz Snyir Williams	Dirksen & Chev	Davidson Rasch & Weil
Year Published	1967	1973	1977	1977	1980	1984
Period of Study	1954-65	1970	1955-73	1956-74	1967-78	1973-82
Sample Size	100	500	3,108	2,607	N/C	5,035
Firms using D T	57	410	1,853	1,848	396	22,559 over 9 yrs
Data Source	Audit Files	Annual Reports	Compustat	Compustat	Compustat	Compustat
% Drawdowns	7.4%	16.1%	21%	21%	20%	23.7%
\$ Value Drawdowns as Percent of \$ Value Build-ups	2.1%	22.4%	15.0%	13.8%	N/C	11.9%
Def. Tax as % of Income	6.5%	11%(a)	N/C	N/C	N/C	N/C
Def. Tax as % of Assets	N/C	N/C	N/C	N/C	N/C(b)	N/C
Approach	Income Statement	Income Statement	Balance Sheet	Balance Sheet	Balance Sheet	Balance Sheet

N/C = Not given

(a) Median

(b) Results showed a significant increasing linear trend for accumulated deferred tax against time for 80% of the companies and a significant increasing linear trend for accumulated deferred tax divided by total assets for 50% of the companies. Significance was measured at the 5% level

TABLE 3-2  
SUMMARY OF PRIOR STUDIES USING CANADIAN DATA

	Cawsey et al	McCalden	Beechy	Drummond & Wigle	Lanfranco Robertson
Year Published	1973	Unpubl- lished	1981	1981	1984
Period of Study	1958-67	1954-70	avg 14 yrs ending 1978	1970, 75, 80	1980-82
Sample Size	275	N/G	293	70	34
Firms using Deferred Tax	229	36	266	70	34
Data Source	Financial Post	Annual Reports	Canadian Compustat	Annual Reports	Annual Reports
% Drawdowns	9.3%	N/G	20.4%	N/G	1980- 8.8% 1981-17.6% 1982-52.9%
\$ Value Drawdowns as Percent of \$ Value of Build-ups	3.5%	1954-68: 3.5% 1969-70: 10.3%	4.7%	N/G	1980- 1.6% 1981-8.2% 1982-78.3%
Def. Tax as % of Income	BU 14.8% DD 9.5%	N/G	20.9%	N/G	N/G
Def. Tax as % of Assets	N/G	N/G	N/G	1970-6.1% 1975-8.3% 1980-9.31%	1980-9.6% 1981-9.25% 1982-8.42%
Approach	Income Statement	Balance Sheet	Income Statement	Balance Sheet	Income Statement

N/G = Not given

BU = Build-up

DD = Drawdown

Fortune's 500 for 1971. Of the 495 companies, 410 showed a liability for deferred taxes. For 77 companies, deferred taxes represented 10% or more of total liabilities. Only 66 of the 410 companies showing a deferred tax account had income statement drawdowns. These drawdowns totalled \$372.4 million, however, two companies accounted for \$129.0 million of this figure. The median effect of deferred income taxes on net income was 11%, with 58 companies having an income effect in excess of 30%. This indicated a distribution skewed to the right.

The publication of an article by Herring and Jacobs (1976) led to two comments in the Journal of Accountancy the following year. (39) Davidson, Skelton, and Weil (1977) examined the deferred tax credit account of 3,108 U.S. companies on the COMPUSTAT tape over the 19 year period ending in 1973. Of the 18,184 changes in the account, 3896 (21%) were declines. In dollar terms, increases out-numbered decreases by six and one-half times. Concentrating on the decreases, the authors found 688 data years where the decrease in the

39 Herring and Jacob's article is not discussed here as there appears to be some doubt as to whether they did analyze the accumulated deferred tax account. Although they denied it, it appears likely that they analyzed the long-term debt account on the COMPUSTAT tape and not the accumulated deferred tax account.

deferred tax account was accompanied by a decrease in the gross plant account. At the most, only 520 of the data years had a decrease in the deferred tax account and the gross plant account accompanied by a payment of current income tax. This is one of the few studies that considered whether there was a cash outflow for decreases in deferred taxes. It is doubtful that by concentrating on a decline in gross plant that the researchers eliminated all cases where an involuntary reversal of CCA/depreciation may have occurred.(40) In addition to this macro analysis, the authors provided the specific example of W. T. Grant Company which reported a \$115.7 million decline in their deferred tax account for the fiscal year ending January 30, 1975. The authors wrote, "all of the credits were to tax loss carryforwards and carrybacks of various kinds" (p.54). They went on to state:

"This, we think, is likely to be the representative case of a deferred tax decrease in a nongrowing firm." (p.54)

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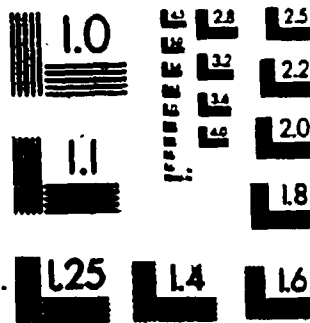
40 An approach to analyzing the cash impact of drawdowns such as Davidson et al used, would not be appropriate in Canada due to the restriction on the the use of consolidated tax returns.

Lantz, Snyir and Williams (1977) investigated all companies on the 1975 COMPUSTAT tape covering the 19-year period ending in 1974. Their data indicated that on average only 1% of companies reported no change in their deferred tax account, while 78% reported increases and 21% reported decreases. The ratio of dollar increases to decreases was 7.3 to 1.0. Similar data was presented by the same authors (Lantz, Snyir, and Williams 1978) in an article that appeared in Cost and Management.

Using 396 U.S. companies listed on the 1979 COMPUSTAT tape, Dirksen and Chew (1980) found that 20 percent of the companies reported deferred tax reversals during the twelve year study period from 1967 to 1978. Although the authors do not report the yearly ratio of deferred tax increases to deferred tax decreases, they noted that it was consistently higher than similar studies conducted by Davidson, et al., (1977) and Lantz et al., (1977). This result is not surprising as the authors eliminated from their study those firms that used accelerated depreciation for at least some of their assets. The use of accelerated depreciation, other things equal, would increase the probability of a drawdown and decrease the size of a buildup.

2

MICROCOPY RESOLUTION TEST CHART  
NBS 1010a  
ANSI and ISO TEST CHART No. 2



### Internal Studies

2

Beechy (1983), conducted an indepth study of deferred taxes for 36 non-randomly chosen Canadian companies. The companies were selected from those included in Beechy's 1981 study, subject to the restriction that the companies willingly provide the necessary data.(41) As such, they would be companies that were included in the 1978 edition of the Canadian portion of the COMPUSTAT tape. Thirty-four of the 36 companies had a credit balance for deferred taxes in 1980, one had a small debit balance and one had no deferred tax balance. On average, deferred taxes was 8.2% of total assets and 18.5% of shareholders' equity for all companies in 1980. In the 428 data years studied, deferred taxes were a credit to the income statement 76 times (18%), averaging 6% of net income before tax. The buildups in deferred tax averaged 11% of net income before tax.

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41 An initial sample of 136 companies believed to be representative of their industry were contacted by the CICA. Due to apparent unwillingness to provide the necessary data and a mail strike, the eventual sample size was 36 companies.

ratios for all companies were considered, "suggesting that the relative impact of deferred tax expense on net income is somewhat larger for firms with smaller absolute net incomes than firms with larger-than-average net incomes" (p.152). In addition, the impact of deferred taxes on net income was also found to vary by industry, ranging from 3.3% in the broadcasting industry to 68.5% in the real estate industry. McGee (1984) found a similar industry variation for U.S. companies.

The ratio of dollars of drawdowns to dollars of buildups was 4.7% when beginning balances of deferred taxes were included in the denominator and 5.3% when they were not. Beechy also found that there was a negative correlation between this ratio and the impact of deferred taxes on net income. In other words, the larger the impact of deferred taxes on income the lower the probability of a drawdown occurring. This is logical as a company with a slow depreciation policy would have larger buildups and also would be less likely to encounter the situation where the available CCA claim is less than depreciation expense.

Beechy also investigated the smoothing effect of deferred taxes by analyzing a sub-sample of 43 companies on both



flow through and tax allocation accounting. Due to potential statistical concerns, the sample was eventually reduced to nine companies. The data presented tends to support the hypothesis that even with a trend line for earnings growth, income on a flow-through basis has greater variability than income using tax allocation.

Lanfranconi and Robertson (1984) conducted a study of deferred tax behaviour in the recessionary environment of 1982. The 34 sample companies were randomly selected from the top 400 companies in Canada with the condition that the company be publicly traded. Their results indicated that the number of drawdowns were considerably higher than in prior years (18 of 34 companies had drawdowns). Due to use of only public data they were unable to determine how many of these drawdowns represented an actual cash outflow in the period of the drawdown. However, the data indicate that at least 11 of the 18 drawdowns were likely influenced by the corporation suffering a loss. The authors' results are consistent with the survey results included in Financial Reporting In Canada, which indicated that 47% of the sample companies using tax allocation accounting had a drawdown in 1982. The results for 1981 and 1980 were 27% and 19% respectively.

The results are interesting in that they indicate the possibility that macro economic conditions can influence the behaviour of deferred income taxes. Beechy (1983) considered a possible relationship between three economic indicators (GNE in constant dollars, corporate net income before tax, and capital expenditures on machinery and equipment) and (1) the incidence of drawdowns and (2) drawdowns as a percentage of the deferred tax credit, over the period 1968-1980 for the 36 companies in his sample. He concluded:

"...there is no clear evidence that poor economic times cause significant reversals of timing differences. There is some suggestion of a lagged effect -- that drawdowns may increase in a year or two following an economic downturn." (p.121-2)

The apparent inconsistency of these two studies might be explained by the fact that the 1982 recession was much more severe than any in recent history. It may be that only severe downturns in the economy will lead to an unusual change in the number of drawdowns.

Davidson, Rosch and Weil (1984), utilizing the Expanded Compustat Industrial File, examined 22,559 company-years in which there was a change in the accumulated deferred tax

account during the period 1973-1982. Over this period, 76.3% of the cases had an increase in accumulated deferred income taxes, while 23.7% had decreases in the balance sheet account. In 1981, 76.4% of the observations had increases in their accumulated deferred income tax account while in 1982 this ratio was only marginally lower, being 74.0%. On a dollar value basis credit entries to the accumulated deferred tax account exceeded debits by 8.39 times. However, 1982 had the lowest relative increase in accumulated deferred income taxes with the credits to the balance sheet account exceeding the debits by 5.05 times. These results indicate a very different behaviour of deferred income tax in the U.S. relative to Canada during the initial portion of the recessionary period of 1982 and 1983.

Skelkel and Fazzi (1984), concentrating on only the capital intensive companies included in Davidson et al's (1984) sample, generated similar results although reversals tended to occur less often for capital intensive firms.

### Internal Studies

2

Beechy (1983), conducted an indepth study of deferred taxes for 36 non-randomly chosen Canadian companies. The companies were selected from those included in Beechy's 1981 study, subject to the restriction that the companies willingly provide the necessary data.<sup>(41)</sup> As such, they would be companies that were included in the 1978 edition of the Canadian portion of the COMPUSTAT tape. Thirty-four of the 36 companies had a credit balance for deferred taxes in 1980, one had a small debit balance and one had no deferred tax balance. On average, deferred taxes was 8.2% of total assets and 18.5% of shareholders' equity for all companies in 1980. In the 428 data years studied, deferred taxes were a credit to the income statement 76 times (18%), averaging 6% of net income before tax. The buildups in deferred tax averaged 11% of net income before tax.

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41 An initial sample of 136 companies believed to be representative of their industry were contacted by the CICA. Due to apparent unwillingness to provide the necessary data and a mail strike, the eventual sample size was 36 companies.

As Beechy used data internal to the company, he was able to determine the types of timing differences and their relative importance. One company was unable to report the type and amount of timing differences for each year, so it was excluded from the sample. Sixty-seven percent of timing differences were attributable to CCA/depreciation differences and 10% related to exploration and development. No other individual item accounted for more than 2.5% of the total timing differences.

As would be expected the importance of these timing differences varied by company. For example, ten companies reported exploration and development timing differences which accounted for 34.5% of these companies total timing differences. One finance company had 88.3% of its timing differences created by leasing activities.

The 76 drawdowns observed, occurred in 41 drawdown periods ranging in duration from one year (20 times) to six years (one time). Fourteen of the drawdowns occurred in years in which net income before tax (ie. statement income) was a loss. In 19 of the 41 periods (46%) the drawdown was classified as resulting from a CCA/depreciation reversal. However, this figure includes at least five periods (18

drawdowns) resulting from the recognition of losses. In only 10 of the drawdowns did Beechy attribute the drawdown to involuntary reversals of CCA/depreciation. What does not appear to be known is whether some companies choose to take less CCA than depreciation in order to maximize their tax benefit.

#### Summary

These studies have contributed the following items of knowledge:

1. Deferred income taxes are material, both on the income statement and the balance sheet.
2. From the time of the early studies by Price Waterhouse and Cawsey et al, the percentage of companies having drawdowns has increased significantly in both Canada and the U.S. Over the past decade the percentage of companies having drawdowns has varied in the area of 22%.. and in addition this percentage varies by indus-

try. This drawdown rate was much higher for 1982 in Canada, but only marginally higher in the U.S.

3. Accumulated deferred taxes have increased in amount over time and to a lesser extent as a percentage of assets.
4. Deferred tax accounting reduces the relative variance of income leading to a smoother income trend.

An additional observation that can be made about the majority of these studies is that no attempt was made to determine the reason for the drawdowns observed. Instead, the researchers tended to concentrate only on the occurrence of a drawdown. Except for Beechy (1984), and the occasional other reference, no attempt was made to determine if the level of income had any influence on the occurrence of a drawdown. This oversight is important as the implications of a drawdown due to a loss is different from a drawdown due to lack of available CCA.

### Model Building Studies

Davidson (1958), using what he described as an "artificially simple static firm" (p.174), showed that there would be no decrease in the accumulated deferred tax account if a company acquired at least an equal-dollar amount of depreciable assets each year. In addition, he showed that if the company acquired a larger dollar amount of depreciable assets each year the accumulated deferred tax account would continuously increase in dollar amount. It is important to recognize that if we introduce inflation into the model a company need not maintain their current level of productive capacity in order to have growth in deferred income taxes. All that must occur is a growth in the dollar amount of depreciable assets acquired.

Livingstone (1967, 1967b, 1969), in a series of articles, investigated past asset expenditures for actual companies(42) to determine their cyclical nature and to de-

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42 Livingstone's two studies published in 1967 investigated privately held electric utility companies. The 1969 study examined 11 manufacturing companies listed on the Fortune 500.



velop a method of forecasting asset purchases well into the future. With the models developed he simulated the potential for drawdowns under varying assumptions regarding the cyclical nature of asset expenditures, the growth in asset expenditures, and the service life of the asset.

Voss (1968) provides an example of a company that purchases one new asset each year except in every tenth year when it buys three. This cyclical pattern will result in a traditional drawdown in five out of every ten years, assuming a ten year useful life, no inflationary factors, and the use of sum-of-the-years depreciation for tax purposes. Voss then went on to provide some empirical support for his hypothesis that smaller firms listed in Moody's Industrial Manual from 1954-1965 would have more reversals than larger firms listed in this manual. This is based on the assumption that smaller firms are more likely to have the bunching of investments necessary to create the drawdown in deferred tax, in other words, smaller firms are more likely to have higher variability in fixed asset additions.

### Summary

These model development studies have concentrated on the deferred tax effect of CCA/depreciation timing differences. They have generated the following series of factors that will increase the probability of a drawdown occurring, all other things equal:

1. a lower rate of growth in fixed asset additions,
2. a higher variability of fixed asset additions, and
3. a shorter accounting life of the asset.

These studies have assumed a profitable company and an equal asset life for tax and accounting purposes, only varying the degree of acceleration in the write-off for tax purposes by use of sum-of-the-years depreciation.

This relationship does not hold with the highly common Class 29 assets, that under current Canadian tax legislation can be written off, in full, over three years: 25 percent in the year of acquisition, 50 percent in the sec-

ond year and the final 25 percent in the third year. Prior to the November, 1981, budget, Class 29 assets could be written off over a two-year period, with a maximum of 50% of the capital cost written off in the first year and the remainder in the following year.

A review of Table 3-3 shows the significance of the CCA claimed on Class 29 assets relative to the total CCA claimed by corporations. For all companies monitored by Statistics Canada, Class 29 CCA claims range from a high of 22.3 percent to a low of 17.5 percent. However, when manufacturing companies are considered it ranges from a high of 55.8 percent to a low of 46.7 percent. Based on these data, and the discussion in the prior paragraph, it is believed that a fourth factor, the tax life of the asset, would have to be added to this model to fit the Canadian environment.

In addition, these studies have assumed that a company will always claim the maximum tax depreciation permitted by law. Therefore any drawdown that occurs is involuntary (management can not claim more tax depreciation) and would result in a cash outflow. This need not be the case as Canadian tax law permits a company to claim any amount of CCA from

TABLE 3-3

TOTAL CAPITAL COST ALLOWANCE AND CLASS 29 CAPITAL COST ALLOWANCE CLAIMED ON CORPORATE TAX RETURNS

	TOTAL CAPITAL COST ALLOWANCE CLAIMED			CAPITAL COST ALLOWANCE CLAIMED ON CLASS 29 ASSETS ONLY				
	1980	1981	1982	1983	1980	1981	1982	1983
Agriculture, forestry and fishing	436	474	432	530	3	4	6	10
Mining	2,889	3,146	2,851	3,055	210	277	462	653
Manufacturing	7,030	6,631	7,818	6,061	3,623	4,818	4,275	2,832
Construction	793	937	833	740	27	33	37	35
Transportation, communication and other utilities	3,732	4,209	4,265	4,400	16	8	75	36
Wholesale trade	869	896	1,016	844	98	86	119	59
Retail trade	879	1,004	1,002	1,023	13	28	22	25
Finance	2,154	2,473	2,586	2,411	16	49	55	38
Services	1,979	2,383	2,483	2,413	92	81	92	65
Total	20,760	24,154	23,286	21,477	4,098	5,383	5,142	3,752

Source: Corporation Taxation Statistics, Catalogue 61-208 Annual (1981, 1982, 1983); Statistics Canada.

zero to the maximum. Therefore it is possible for a drawdown to occur when management could have claimed more CCA. It is hard to imagine that such a voluntary decision by management implies that the company has made a net sacrifice of resources.

#### Market Based Studies

Beaver and Dukes (1972) investigated the association between unexpected changes in earnings and unexpected changes in one-year security returns over a five-year period from 1963 to 1967. The sample consisted of 123 COMPUSTAT companies with a December 31 year-end that were listed on the New York Stock Exchange. Three measures of earnings were used: earnings with deferred taxes, earnings excluding deferred taxes, and cash flow earnings (added deferred tax, depreciation, depletion and amortization to net earnings). Four alternative forms were developed for each earnings measure and five expectation models for future earnings were used. This resulted in 60 models (3x4x5). The results were stated as follows:

"With respect to the three alternative accounting measures, deferral earnings has the highest degree of association, earnings without deferral is next, with cash flow performing more poorly." (p.329)

Believing that their results were "anomalous", Beaver and Dukes (1973) extended their study with the 54 companies from their previous study that used accelerated depreciation for tax purposes and straight-line for financial statements. Accounting depreciation for these firms were revised on the following basis:

$$D_{\delta t} = SL_t + \delta \frac{1}{\tau} \Delta DT_t$$

where

$D_{\delta t}$  = depreciation in period t, using  $\delta$  as a weighting factor

$SL_t$  = straight-line depreciation recorded in period t

$\Delta DT_t$  = change in accumulated deferred taxes in period t

$\delta$  = weight assigned to accelerated depreciation

$\tau$  = the tax rate

The above calculation interprets deferred tax expense as additional depreciation, in other words, the net-of-tax approach.

The research design was similar to the previous study except for the use of three earnings expectations models instead of five. Therefore, 12 models for each form of delta-earnings were examined.

The results indicated that the highest association of earnings with the abnormal performance index (API) typically occurs when delta is greater than the tax rate. A more simplistic view, but one that is equally compatible with the results, is that the market believes companies are depreciating their assets too slowly, and the deferred income tax expense acts as a measure of added depreciation expense. The results support their prior study that deferral earnings have a higher association with unexpected security returns than flow-through earnings because deferral earnings have a delta equal to the tax rate, whereas flow-through earnings would have a delta equal to zero. The fact that delta tended to be greater than the tax rate indicates that a higher association is achieved when further depreciation is added to the deferral measure of earnings. The authors concluded:

"If tax deferral is viewed not as a deferred charge or a deferred obligation but rather as a form of depreciation, then there is no need for separate deferral entries, nor should cumulative deferred taxes

appear on the right-hand side of the balance sheet. The account should be treated as additional accumulated depreciation." (p.558)

It is not possible from these results to determine why this form of association exists. As the authors point out in a footnote (p.557) the association may simply represent an attempt by the market to impute current cost depreciation. The use of current cost depreciation (assuming that it is higher than historic cost depreciation) is consistent with a delta that is greater than the tax rate. A more simplistic view, but one that is equally compatible with the results, is that the market believes companies are depreciating their assets too slowly, and deferred income tax expense acts as a measure of added depreciation expense.

These two studies indicate a danger that may arise if partial allocation on recurring items is adopted without an adjustment in current levels of disclosure. If in fact the market is using deferred tax data to adjust for low depreciation expense the elimination of this data from the face of the statements may hamper this adjustment. However, it is possible that the market has other means of generating an estimate for economic depreciation.




An earlier study by Beaver, Kettler, and Scholes (1970) investigated the association between the standard deviation of two measures of the earnings-price ratio and a company's beta generated from the market model. The two earnings figures used were: (1) income available for common shareholders after deducting deferred tax expense (full allocation) and (2) income available to common shareholders without deducting deferred tax expense (ie. flow-through). Both the standard deviation of the earnings-price ratio and a company's beta are considered proxies for risk, so it is interesting to note that income excluding deferred tax expense led to the higher degree of association.

Tihanyi (1975), using a sample of 134 Canadian mining and manufacturing companies over a five year period from 1968 to 1972 also found that the change in net income on a deferral basis showed a slightly higher association with yearly stock returns than the change in net income on a flow-through basis. In addition, Tihanyi regressed the market value of common stock (mid-value of high and low price for the year, times the number of shares outstanding) against the book value of the common stock, accumulated deferred taxes, capital investment for the year, and three dummy variables representing industry. All coefficients

were significant at the 0.02 level. The regression coefficient for accumulated deferred tax was positive and equal to 66% of the regression coefficient for book value of common shares. In the conclusions she states:

"It seems that shareholders do make some distinction between 'ordinary' equity and the tax savings accumulating on the deferred tax reserves and it is quite possible that current practices help them in making this distinction. At the same time the current practice has a tendency to understate the true value of the owners' interest in the firm due to carrying a large deferred tax item on the books much of which investors apparently judged as unlikely to 'mature'" (p.107)

Although this research leaves considerable questions as to its validity, it does provide support for the hypothesis that deferred taxes are viewed as part debt and part equity by the market. Another way of describing the results is that accumulated deferred taxes are viewed as long-term debt, but with a zero interest cost. Therefore, the present value of this debt, discounted at the cost of capital, is much lower than the figure reflected on the corporations' financial statements. Another plausible conclusion would be that inconsistent analysis of deferred taxes by the market led to the observed results.



One piece of data that could have enhanced the analysis of studies in this group is knowledge of the length of the tax deferral. Beaver and Dukes (1973) and Tihanyi (1975) both assumed that all timing differences were the result of CCA/depreciation differences. Beechy (1983) provides data that indicates that other timing differences can be significant depending on the industry. Assuming these other timing differences have various maturity times, the market is likely to have difficulty interpreting deferred tax without information on the items that caused it. Tihanyi wrote:

"It makes sense that a tax deferral should become more valuable to the shareholder as its anticipated maturity recedes further into the future, and should gradually approach the value of equity."  
(p.101)

Thus, the length of the deferral is likely to influence our interpretation of deferred tax as either an interest free loan or an injection of equity.

### EMPIRICAL STUDIES OF LOSS CARRYOVERS

Only one empirical research study was found that considered accounting for loss carryovers. It was conducted in the U.S. by Cumming and Jacobs (1976) with the objective of determining how well the rules for loss carryforwards, put forth in APB Opinion No. 11, classified the actual realization of companies' loss carryforwards. Their classification scheme is shown in Table 3-4. Correct classification occurs under either of two conditions. First, when an asset is set up for the loss carryforward and is subsequently realized or, secondly, when the loss carryforward is not recognized and it turns out that it is never fully realized. A Type 1 error was deemed to exist if a company set up the loss carryforward as an asset and did not eventually realize all of it in the five year carryforward period. A Type 2 error was deemed to exist if no asset was set up and the company did eventually realize the full benefit.

The sample was taken from 900 companies on the American COMPUSTAT tape. These companies were investigated to determine if they had incurred losses for the years 1968 and 1969. Fifty-six corporations reported losses in these two

TABLE 3-4

## Cumming and Jacobs' Classification Scheme

		Recognized (Asset set up)	Not Recognized (Note disclosure only)
Actual Outcome	Realized *	9 (19)	TYPE 2 ERROR 11 (0)
	Not Realized	0 (2)	TYPE 1 ERROR 5 (3)

- Numbers not in brackets indicate the number of companies falling into each section, based on financial statement data.

- Numbers in brackets indicate the number of companies falling into each section based on reclassification by the authors.

\* The authors dropped one company due to lack of the necessary data.

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years. They then eliminated companies whose losses were entirely realized by the three year carryback rule and also eliminated those companies who recognized the full amount

of the loss by drawing down deferred taxes.(43) The eventual sample consisted of 25 corporations, nine of which recognized the loss carryforward by setting up an asset and 16 which did not, using only note disclosure. If one considers that setting up the asset for the tax benefit of the loss as one extreme, and using note disclosure as the other extreme, then drawing down deferred taxes to recognize the tax loss is the middle ground. It is this middle ground, that Cummings and Jacobs did not investigate, that will be researched by this study.

Based on actual financial statement classification no Type 1 errors occurred, but 11 Type 2 errors did occur. Therefore, 44% (11 of 25) of the companies turned out to be incorrectly classified. If the goal of APB Opinion No. 11 was to virtually eliminate the possibility of Type 1 errors it appears it was successful.

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43 The authors did not provide a break-down of the 31 companies that reported losses between those that recognized and realized the loss by means of a carryback and those that at least recognized a portion of the loss by means of drawing down deferred income tax.

Using seven historical cost based variables, they derived a function to discriminate between those companies that actually realized the full benefit of the loss carryforward and those that did not. They then reclassified the 25 companies as shown in Table 3-2. This regrouping led to only two companies being incorrectly classified (8% error rate), but these were both Type 1 errors. The authors conclude by asking whether some more liberal criteria is appropriate for recognizing loss carryforwards. A more liberal criteria should reduce the chance of Type 2 errors but would tend to increase the chance of a Type 1 error.

Although their analysis was interesting, it did suffer from at least one critical flaw: the development of a discriminant function based on a sample of companies, and then a test of this function using the same sample. This tends to lead to an overestimation of the power of the classification scheme. In addition, a discriminant function forces a firm to be slotted into one of the categories, even if it only marginally fits into this category. Some effort to identify these marginal firms would have increased the value of their analysis substantially.

CONTRIBUTIONS AND RESEARCH QUESTIONS

An empirical investigation of drawdowns is very relevant at a time when two major North American accounting bodies are considering the entire area of accounting for corporate income taxes. The following provides an analysis of the contributions from a study of deferred income taxes, the research questions that will be addressed and the implications for how the research should be conducted.

The severity of the 1982 recession and the impact of the government's decision to limit CCA in the year of asset acquisition, provides an unique opportunity to investigate deferred tax behaviour and to evaluate the appropriateness of current accounting standards in a severe recession. However, these circumstances make 1982 a highly unusual year. Therefore, instead of selecting a sample of companies that would permit a study of only 1982, a sample will be selected that permits study over the four year period 1980-83. This will ensure that the full time period of the recession is captured. In addition, it is strongly suspected that many of the drawdowns in other years, as well as 1982, resulted from accounting losses and possibly the



application of paragraph 3470.48 of the CICA Handbook. As paragraph 3470.48 allows drawdowns in deferred income taxes only for reversals that can be generated in the carryforward period, it is considered appropriate to restrict the sample companies to those most likely to have CCA/depreciation differences as the major factor leading to timing differences. This restriction is also consistent with an investigation of the argument that in an economic recession there is a particular need for deferred taxes because the economic conditions will lead to a decline in fixed asset additions (Sands 1959, Davidson et al 1984).

The first contribution from this research will be the development of descriptive data on the behaviour of deferred income taxes subsequent to 1979 and the creation of a data base that, at least in part, will be unique in Canada. As the review of the descriptive studies revealed, only one Canadian study (Lanfranconi and Robertson, 1984) and one American study (Davidson et al, 1984) have looked at this recent period. The Canadian study dealt with a reasonably small sample (34 companies) selected from a list of large Canadian public corporations and revealed a drawdown rate much higher than found in the U.S. over the same period. This suggests that a larger and more representative sample

of public companies may provide greater insights into the general behaviour of deferred taxes in the unusual Canadian economic environment of the early 1980's. As a common belief is that drawdowns represent involuntary reversals, a more representative sample would provide better insights into the economic reality and appropriateness of this belief over a broader section of the economy. A more representative sample also permits investigation of whether the size of the company has any influence on the behaviour of deferred income taxes.

The following research questions will be addressed to provide this unique descriptive data on both the income statement and balance sheet impact during the period under consideration.

RQ1 There was no significant difference in the proportion of companies having drawdowns in 1982 compared to prior years.

RQ2 There was no difference in the average size of deferred tax expense in 1982 relative to prior years.

RQ3 There was no difference between accumulated deferred tax as a percentage of total assets for 1982 and accumulated deferred tax as a percentage of total assets in 1981.

RQ4 There was no difference between accumulated deferred tax as a percentage of shareholders' equity for 1982 and accumulated deferred tax as a percentage of shareholders' equity in 1981.

RQ5 There is no association between the number of drawdowns and the size of the company.

The second contribution is in providing an explanation for the behaviour of deferred income taxes in a severe recession, and in particular an explanation for the apparent increase in drawdowns.

At one extreme it may be found that all drawdowns coincide with outflows of cash to taxation authorities. This would occur when a company has made inadequate purchases of depreciable assets so that the CCA claimed by the company is less than the depreciation recorded on the income statement. This finding would provide very strong support

for those who believe in full allocation on the grounds that deferred income taxes are a liability. It would be difficult to deny the need to recognize, on the equity side of the balance sheet, some figure for the potential drawdowns, however, the issue of discounting the accumulated deferred income tax balance would still have to be considered.

At the other extreme, the data may indicate that none of the drawdowns coincide with cash outflows. This would provide support to those who oppose full tax allocation on the grounds that it does not represent a liability of the corporation. The only possible explanation for an income statement drawdown without a coinciding outflow of resources would be the existence of accounting losses.

A review of Appendix B indicates that in order to recognize the loss carryforward, the company drew down \$5,996 of deferred income tax credits. This amount is equivalent to just over three and one half years of recording depreciation while not recording any CCA. While flow-through advocates who oppose deferred income tax accounting because they believe it results in artificial smoothing may interpret this type of drawdown as added justification for their

position, our problem is the lack of evidence on this subject. Without data on the incidence of loss carryforwards in actual practice it is impossible to interpret the real economics of a drawdown let alone evaluate the smoothing concern.

To investigate the economic reality signified by a drawdown it will be necessary to gather data on the level of fixed asset expenditures and depreciation expense as well as the development of a measure of accounting income as defined by the CICA and discussed in Chapter Two. It is not sufficient to consider financial statement income because this figure is not the basis for determining income tax expense under current accounting practice. Therefore, to the extent possible, it will be necessary to determine what permanent differences exist. The determination of accounting income is a significant refinement from other studies on deferred income taxes and should aid considerably in determining the real impact of accounting losses on deferred income taxes.

To evaluate the arguments of the full allocation supporters the following research questions will be investigated.

RQ6 Net fixed asset additions for 1982 were not significantly lower than net fixed asset additions for 1981 and 1980.

RQ7 Net fixed asset additions divided by depreciation expense were not significantly lower in 1982 compared to 1981 and 1980.

RQ8 There was no association between fixed asset additions divided by depreciation expense and deferred income tax expense divided by total assets.

These three research questions are designed to determine the potential impact of CCA/depreciation timing differences on the behaviour of deferred income taxes.

Flow-through advocates argue that drawdowns are infrequent and if they do occur they will tend to be associated with negative income and therefore there will be no coincidental cash outflow. The following research question will be used to investigate this argument.

RQ9 There is no association between the occurrence of an accounting loss and the occurrence of a drawdown.

Due to the unusual economic conditions and the abnormal behaviour of deferred income taxes the sample should consider the years prior to 1980 to determine if the existence of losses could be an underlying explanation for many of the drawdowns found in prior studies. In addition, the extension of data collection to years prior to 1980 would provide a basis for comparing the sample selected for this research to other studies that were conducted earlier.

The third contribution relates to Beechy's (1983) recommendation that deferred taxes only be set up on non-recurring timing differences. If accepted, this would largely eliminate the current primary method of recognizing losses: that of drawing down accumulated deferred income taxes. Assuming it is found that drawdowns are large and associated with accounting losses, this raises the issue of how, if at all, we should recognize these losses before they are ultimately realized. Although, in the final analysis, this issue is conceptual, an important factor that needs to be assessed is current practice. Therefore, it will be necessary to gather data on current note disclosure on unrecognized loss carryforwards and the extent of subsequent realization. This is an area that has not yet been inves-

tigated in Canada and will be studied in Chapter Six of this document.

The fourth contribution is the aid that the empirical data may provide to standard setters in Canada. The literature review indicated an apparent difference in deferred income tax behaviour between Canada and the U.S. during the early part of the 1980s. The existence of this difference may be particularly important given that the CICA has delayed further study on the topic of deferred income taxes until FASB has issued an exposure draft. This delay implies that the CICA plans to rely, at least initially, on FASB's conclusions which will likely be based on U.S. experience. An assessment of the nature and influencing factors of this unusual behaviour in Canada during the recession would aid the standard setter in deciding whether different accounting policies or disclosure are appropriate for the Canadian environment.



CONCLUSION

Beechy (1983) identified one vital consideration when he stated, "(i)n the last analysis, the decision on accounting treatment of corporate income taxes must be based on conceptual analysis." But there can be no doubt that empirical analysis offers indispensable insights into the implications of current and proposed accounting rules dealing with income taxes. In this research study the main subject of interest is drawdowns and their association with accounting losses and the implications for the deferred income tax accounts. The prior discussion indicates that there are considerable implications that may flow out of this study, particularly when we consider that standard-setters are reviewing the entire area. Full allocation advocates have suggested that an economic scenario similar to the one Canada encountered in the early 1980's will provide justification for their point of view. Now that the situation has transpired, it is time to test whether their perceptions, hypotheses and predictions are consistent with the underlying economic reality.

## CHAPTER FOUR

### SAMPLE SELECTION, RESEARCH METHOD, AND RESEARCH RESULTS

#### INTRODUCTION

The research described in this and the following two chapters constitutes the three separate research phases of this thesis. Here in Chapter Four, publicly available data will be used to describe the behaviour of deferred income taxes and to investigate the consistency of deferred income tax drawdowns in the period 1980-83 with the traditional arguments for deferred income taxes. This will be accomplished by addressing the research questions developed at the end of Chapter Three. Chapter Five will describe the internal data collected from some of the companies experiencing drawdowns. This step was conducted to substantiate the cause of these drawdowns and to examine whether these

drawdowns coincided with a cash outflow to the government during the year. In the third phase, described in Chapter Six, both the notes to the financial statements dealing with loss carryforwards and the extent and magnitude of extraordinary items indicating realization of previously unrecognized loss carryforwards will be discussed

#### SAMPLE SELECTION

A final sample of 80 companies was randomly selected from companies listed on the Toronto Stock Exchange (TSE) as of December 31, 1983, subject to the following restrictions:

1. The company had been listed on the TSE for the four year period ending December 1983. (ie. since December 31, 1979).
2. The company prepared its financial statements according to Canadian generally accepted accounting principles.(44)

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44 Companies that prepare their financial statements according to Canadian GAAP and then disclose a reconciliation to GAAP of a foreign country, will be considered to use Canadian GAAP.

3. The company was not from one of the following industries
  - a. financial institution (includes banks, trust companies, insurance companies, and finance companies)
  - b. real estate
  - c. oil and gas
  - d. mining
  - e. mutual fund or holding company
4. At least 70% of the company's revenues and 70% of the company's identifiable assets were based in Canada.
5. The company used tax allocation accounting in the preparation of its financial statements.

Table 4-1 provides a summary of the sample selection procedure. To implement restriction number one a list of potential companies was generated by comparing companies listed in the December, 1983 TSE Review to a list of companies in the December, 1979 Review. Any company on both lists was included as a potential sample company. Companies on the 1979 listing that were not on the 1983 listing were followed up in the Financial Post's book Predecessors and Defunct Companies to determine if their name had been changed. Those companies who had a name change and were listed on the TSE in December, 1983, under the new name were added to the list. This procedure generated 609 com-

TABLE 4-1

## Summary of Sample Selection Procedures

Number of companies listed in both December 1979 and December 1983 TSE Review	<u>609</u>
Total companies randomly selected	233
Reasons for Elimination	
United States based companies	16
Companies from industries specifically excluded from analysis	108
Revenues or assets outside of Canada greater than 30 percent of total revenue or assets	24
Companies not following comprehensive tax allocation	2
Companies not listed continuously	2
Intentional elimination of one company	<u>1</u>
FINAL SAMPLE SIZE	<u>80</u>

panies that were listed in both the December 1979 and December 1983 TSE Review

The 609 companies were numbered and with the aid of computer random number generator an eventual random sample of 233 numbers was generated.(45) Sixteen of the companies se-

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45 The researcher first generated 200 random numbers but this did not produce the desired sample size of 80 com-

lected were listed as U.S. based companies by the TSE Review so they were eliminated due to sample restriction number two.

Dun and Bradstreet's publication Canadian Key Business Directory 1984 was consulted to gather Standard Industrial Classification (SIC) codes for each of the remaining companies. The SIC codes were compared to the "nature of business" provided in the December 1983 TSE Review. Where the industry description appeared somewhat contradictory the companies latest annual report was consulted to determine the industry. In those cases where a company was not listed in the Dun and Bradstreet directory the "nature of business" provided by the TSE Review was consulted and if the description clearly indicated that the company was inappropriate, the company was eliminated from the sample. In total this procedure resulted in the elimination of 108 companies.

Restriction four was implemented by reviewing each company's annual report for the period 1980-83. A company was eliminated from the sample if, in any year, less than

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panies. Therefore, another 50 random numbers were generated of which 17 had been previously selected.

70% of assets or 70% of revenues were not based in Canada. (46) This data was taken from the segmented disclosure. If there was no disclosure of this type, or if it did not permit determination of assets and revenue based in Canada, the company was retained in the sample. (47)

Restriction five was implemented by reference to a company's accounting policies. Unless there was an indication that a company did not follow tax allocation it was assumed that it did. This is a different approach from that used in prior studies, in which the researchers used the existence of deferred income taxes on the balance sheet as a basis of sample selection. While this would indicate that a company follows deferred income tax accounting, its absence does not indicate the contrary. (48)

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46 Export sales from Canada were considered to be Canadian based for the purpose of this restriction.

47 One sample company provided disclosure based on Eastern Canada and Western Canada together with the U.S. It was retained as it was not possible to determine that it did not meet the criteria.

48 This selection procedure did lead to the selection of companies having subsidiaries that did not follow de-

Two companies were eliminated from the sample because they were not listed continuously from January 1, 1980 to December 31, 1983.

After the completion of these procedures, 81 companies remained. When the sampling plan was originally designed it was decided that 80 companies would be sufficient to provide a representative cross section of public companies following comprehensive tax allocation. As each additional company dramatically increased the amount of work required for data collection, extension beyond this limit was believed to be unwarranted. Two options existed to reduce the sample to 80 companies: randomly select one company for elimination or specifically exclude one company. The second option was selected as one of companies initially chosen, Maple Leaf Gardens Limited, appeared to have factors other than CCA/depreciation causing deferred income tax expense from year to year. The elimination of this company left the 80 sample companies desired for the analysis. The companies remaining in the sample are presented in Appendix C.

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ferred tax accounting. However, for those companies that disclosed this fact, the data was noted and is presented in Table 4-4.



### Reasons for Selection Procedure

Companies listed on the TSE were chosen for three reasons. First, the TSE is by far the most important stock exchange in Canada in terms of economic impact. A tabulation of share transactions on the three major Canadian stock exchanges (Toronto, Montreal, Vancouver) indicates that the TSE accounted for 76.9% and 80.3% of the dollar value of trades in 1983 and 1982 respectively. Second, access to annual reports was expected to be greater for TSE companies. Third, although no study has been done to substantiate it, it is believed that the regulating mechanism employed by the TSE and the Ontario Securities Commission should provide greater assurance that companies are following generally accepted accounting policies. (49)

The four year continuous listing requirement, while somewhat arbitrary in nature, provides for a reasonably repre-

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49 • Even the Ontario Securities Commission's procedures do not ensure compliance with GAAP, as evidenced by the use of the flow through procedure by Wardair International Ltd. until 1982. See the case Wardair International Ltd., UWO, 1984.

sentative sample, while ensuring that financial statement data are available for the four year period encompassing the recession. Selecting companies continuously listed for a longer time period may have biased the sample towards larger and possibly more stable companies.

The decision to eliminate some specific industries was done for two reasons. First, "the Recommendations [of the Accounting Standards Committee] do not necessarily apply to the special problems of banks and insurance companies" (CICA Handbook, p.9). The second reason was the most important for this study. A major area of interest in this research is whether deferred tax drawdowns signal that a company has reached the crossover point where the CCA deductions will be less than depreciation expense and therefore result in increased cash outflows for income taxes, or whether they may be the result of a company voluntarily delaying or adjusting the recording of certain expenses for tax purposes.<sup>(50)</sup> The primary means of accomplishing this adjustment is by rearranging the timing of CCA claims. For

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50 This topic will be pursued in the second portion of the research by talking to financial representatives of some of the companies having drawdowns.

this reason it was decided to concentrate on those industries that are most likely to have CCA/depreciation timing differences. From Beechy (1983, p.102-3) we know that finance, real estate, oil and gas, and mining companies tend to have a lower portion of their timing differences caused by CCA/depreciation timing differences. Therefore, these companies have been excluded from the sampling plan.

The appropriateness of this decision can be gauged by a review of Beechy's research. Table 4-2 compares the composition of accumulated deferred tax for companies in Beechy's sample to what the composition would have been if the sampling restrictions suggested in this research were used. The columns do not add to 100 percent as only the major causes of long term timing differences are included. The restrictions would have resulted in 11 of the 35 companies being excluded. In so doing, the percentage of long term deferred taxes caused by CCA/depreciation timing differences was increased from 67.8% to 80.6%. The only major cause of deferred taxes not eliminated by the sampling restrictions relates to capitalized costs.

Point four is included to ensure that the majority of the company's operations and income fall directly under the

TABLE 4-2

Comparison of the Composition of Long-term Deferred Income Taxes Between Beechy's Sample Companies and the Research Restrictions Proposed in This Study\*

	% of long-term deferred taxes	
	Beechy	With Research Restrictions
CCA/depreciation	67.8	80.6
Exploration & Development	9.8	2.5
Research & Development	1.7	0.4**
Capitalized Costs	7.4	7.5
Leases	2.9	0.1**
LIFO	1.6	1.8
Revenue	<u>2.1</u>	<u>1.0</u>
	<u>93.3</u>	<u>93.9</u>
Sample size	<u>35</u>	<u>24</u>

\* Developed from Beechy (1983), pages 102-103.

\*\* Created by only one company.

Canadian Income Tax Act. This is necessary, as the tax laws of other countries may well be different from Canadian tax laws.

Points two and five in the sampling plan are obvious restrictions as the purpose of this research is to investigate accounting for corporate income taxes as required by Section 3470 of the CICA Handbook. To study companies that

do not follow these standards would not help our understanding.

#### Evaluation of the Final Sample

Two important decisions were made in the sample selection process: manual data collection and the elimination of specific industries. Because of these selection procedures it is important to consider the nature of the final sample.

Data was manually collected as opposed to using a computerized data base as the research plan requires consideration of companies' note disclosure and also to increase the representativeness of the final sample. A comparison of the final sample to the 253 companies listed on Compustat's October 1983 Canadian Industrial file indicates that 45 of the sample companies are included in the file, while 35 companies are not. This suggests that the added time taken to collect data did indeed lead to a more representative sample than would have been possible by using a computerized data base to generate the data.

Table 4-3 provides the industrial distribution of the final sample. It was prepared using the SIC codes and terminology contained in Dun and Bradstreets 1984 edition of Canadian Key Business Directory. As most companies had several SIC codes in the listing the first code provided was used unless the first code indicated a holding company in which case the second code provided was used. One sample company was not listed by Dun and Bradstreet and two companies were listed as being only holding companies. In these three cases the researcher, based on a review of the annual report, assigned the company to an appropriate classification.

A review of Table 4-3 indicates that the final sample is likely to be very capital intensive as 43 companies (54% of sample) are classified as manufacturing and 13 companies (16% of sample) are considered to be public utilities. Eight companies are classified as being in the wholesale trade business while twelve companies are in the retail portion of the trade business. Two companies were classified as being in the service industries, while only one was classified as an agricultural company. One company, Canadian Hydrocarbons, was classified in the mining segment of the economy; a segment intentionally excluded from the

TABLE 4-3

## Industrial Distribution of Sample Companies

AGRICULTURE, FORESTRY & FISHING		1
MINING		1
CONSTRUCTION		0
MANUFACTURING		
Food and Kindred Products	5	
Textile Mill Products	4	
Lumber & Wood Products, Except Furniture	3	
Paper & Allied Products	3	
Printing, Publishing and Allied Industries	2	
Chemicals and Allied Products	4	
Primary Metal Industries	3	
Fabricating Metal Products, Except Machinery & Transportation Equipment	2	
Electrical & Electronic Machinery, Equipment & Supplies	4	
Transportation Equipment	7	
Miscellaneous Manufacturing Industries	2	
Others	<u>4</u>	43
TRANSPORTATION, COMMUNICATION, AND OTHER		
PUBLIC UTILITIES		
Railroad Transportation	2	
Communication	4	
Electric, Gas & Sanitary Services	5	
Other	<u>2</u>	13
WHOLESALE TRADE		
Wholesale Trade- Durable Goods	7	
Other	<u>1</u>	8
RETAIL TRADE		
General Merchandise Stores	3	
Food Stores	2	
Apparel & Accessory Stores	3	
Miscellaneous Retail	3	
Other	<u>1</u>	12
FINANCE, INSURANCE, AND REAL ESTATE		0
SERVICES		2
PUBLIC ADMINISTRATION		<u>0</u>
TOTAL SAMPLE		<u><u>80</u></u>

sampling plan. This company was a borderline decision in the sample selection but was left in as it is also involved in manufacturing and utility operations. In summary, the final sample can be considered representative of manufacturing and trading companies listed on the TSE.

#### DATA COLLECTION FROM ANNUAL REPORTS

Appendix D shows the three part data collection form used to gather the necessary data. The first part deals with the income statement and provides for three different levels of income: income before tax and extraordinary items, income before extraordinary items, and net income. Minority interest, which typically will be an expense, and equity income, which will normally be a revenue are specifically included to ensure that all income figures can be put on a comparable basis. These two factors caused some difficulty in the initial data collection of a prior study (Lanfranconi and Robertson 1983). The second portion deals with balance sheet data. Besides ensuring that all deferred tax balances will be recorded, it provides for



breaking the balance sheet down into its major components. The third section provides for collecting other necessary data. These items include fixed asset additions from the statement of changes in financial position, a simple reconciliation of accumulated deferred income taxes, the magnitude of deferred taxes arising from a takeover of another company, and any notes relating to income taxes. The primary notes of interest are the remaining amount of deferred taxes not originally set up on the balance sheet at the time of the introduction of Bulletin #26, the existence of any loss carryforwards, and any attempt to reconcile the effective tax rate with the statutory tax rate. In addition, the final page of the form provides room for notation of any data not specifically on the form that may turn out to be useful.

The research was designed to concentrate on the four year period 1980-83; however, to make comparisons to earlier periods and prior studies, the following procedures were used. For the years 1980 to 1983, the annual report for each sample company was obtained and the data collection sheet completed. For the seven years prior to 1980 only every other year's annual report was reviewed to collect the data. This was possible due to the comparative nature

of financial statements. Thus, 1979 data was gathered from the 1980 financial statements, 1977 data was gathered from the 1978 financial statements...and 1973 data was gathered from the 1974 financial statements. In this manner, it was possible to gather eleven years of data by reviewing only seven annual reports for each company. It was decided that going further back than 1973 was not appropriate as 1972 was a year of considerable revision to the income tax act. It was also believed that going further back in time would not significantly enhance the ability to compare this sample to prior studies.

As the data collection process covered eleven years, from 1973 to 1983, there was a potential of 880 observations (80 x 11). The eventual data collection generated 864 observations over this period. The 16 missing observations relate to seven corporations and are distributed as follows; one in 1976, two in 1975, seven in 1974 and six in 1973. A list of the 16 observations is provided in Appendix E. Seven of the observations relate to companies that were not listed on the TSE in the years for which their annual reports could not be located, six of the missing observations arose from takeovers or amalgamations, one was due to overlapping

years, and two related to an inability to locate an annual report that should have been available.

### DESCRIPTIVE ANALYSIS

This section will define the variables used in the research and then establish that the recessionary period of the early 1980's resulted in unusual behaviour for the deferred tax accounts. After having established this, the two potential causes of drawdowns, lack of fixed asset growth and accounting losses, will be considered. The results will then be compared to prior Canadian studies before considering the conclusions.

### Model

The initial model developed for conducting this research was designed to be used with multi-variate regression anal-

ysis. After considerable effort it was concluded that such an analytical technique could not be successfully applied to the data gathered for this study. The reasons for this lack of success are considered later in this chapter and in Appendix G.

To proceed with the analysis it was decided that a much more simplified model and the use of non-parametric statistics were required. However, the basic objective remained the same: to determine the impact of reduced fixed asset additions and losses on the occurrence of drawdowns in the sample companies. In functional form the revised model guiding this portion of the research is as follows:

$$\text{Deferred Income Tax Expense} = f(\text{Growth in Fixed Asset Additions, Adjusted Income})$$

#### Standardization for Company Size

An implication of using a more representative sample of public companies is the diversity in the size of the financial numbers to be analyzed. To control for this it was

considered necessary to standardize certain variables to eliminate the impact of company size on various parts of the analysis. Although this may have the impact of eliminating significance in some parts of the analysis, it is believed to be essential to ensure that one is analyzing the issue of interest and avoiding the potentially confounding impact of size.

#### Definition of Variables

##### Deferred Income Tax Expense

The deferred income tax expense figure used in this research was the figure that appeared on a company's income statement before extraordinary items, or if not disclosed there it was taken from the statement of changes in financial position or the notes to the financial statements. Therefore, if the figure was taken from the income statement or the notes it should always include both the current and non-current portion of deferred income tax expense. In all cases it excludes any deferred income taxes on extraor-

dinary items(51) and any deferred income taxes recorded on subsidiaries that do not follow comprehensive tax allocation.(52)

An assessment of the impact of not eliminating the current portion of deferred income tax expense, and not recording deferred income taxes for subsidiaries that do not follow comprehensive tax allocation can be made by looking at Table 4-4. The table provides the amount of change to deferred income tax expense that would be necessary to adjust for these two factors. Except for Atco, Bombardier and Celanese Canada, the amounts not adjusted for tended to be rather small. In one observation, Atco in 1981, the adjustment for these two factors would have changed a drawdown into a buildup. In three other observations, Bombardier in 1981-83, the deferred tax entry would have been eliminated.

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51 This exclusion was deemed appropriate for two reasons. First, by definition, extraordinary items are not recurring items. Second, it is not required under the CICA Handbook to disclose the amount of deferred income tax associated with an extraordinary item.

52 Only three companies in the sample had subsidiaries that did not follow comprehensive tax allocation. These were Atco, Inland Natural Gas and Westcoast Transmission.

TABLE 4-4

SUMMARY OF CURRENT PORTION OF DEFERRED INCOME TAX EXPENSE  
AND DEFERRED INCOME TAXES NOT RECORDED ON SUBSIDIARIES  
THAT DO NOT FOLLOW COMPREHENSIVE TAX ALLOCATION  
(In 000 \$)

Company Name	Adjustment to Deferred Tax Expense to Eliminate Current Deferred Tax Expense			
	1980	1981	1982	1983
Ahed	+190			
Atco *	+16,183	+14,885	+11,536	-2,666
Bombardier **		+18,670	-2,801	-2,365
Canadian Foremost	+78	+74	-109	-4
Cassidys				-60
Celanese Canada	+2,290	+3,452	+2,425	-2,511
Inland Natural Gas *				+997
Jannock		+1,179	-1,320	+1,921
Maritime Electric	+1,032	-440	-185	-32
McGraw Hill				+43
Pacific Northern	+137	-1,814	-2,270	-915
Reichhold	+558	+376		
Robinson Little	+95			
Trans Canada Glass	+166	-129	+137	+262
Westcoast Transmission *	<u>-299</u>	<u>-413</u>	<u>+161</u>	<u>+3,084</u>
TOTAL	<u>20,430</u>	<u>35,840</u>	<u>7,574</u>	<u>-2,246</u>

\* Deferred income tax expense not recorded in the accounts due to subsidiaries that do not follow comprehensive tax allocation.

\*\* All of Bombardier's deferred income tax expense in the years 1981-83 was for current deferred income tax.

In other observations there would have been no adjustment to the sign of deferred tax expense.

To standardize the dependent variable for company size deferred income tax expense was divided by total assets at the end of the year. As total assets is always positive the direction of the deferred tax impact is maintained while at the same time generating a standardized variable of the relative size of the drawdown or buildup. Therefore, the dependent variable will be calculated as follows:

$$\text{DTEPERAS} = \frac{\text{Deferred Income Tax Expense}}{\text{Total Assets at the End of Year}}$$

Growth in Fixed Assets:

The choice of independent variables is based on the desire to investigate the potential explanations of deferred tax behaviour. From Davidson and Livingstone we know that the level of growth in fixed assets is likely to impact on deferred tax behaviour. Therefore, the two following standardized variables were developed:



$$\text{GROW} = \frac{\text{Net Fixed Asset Additions}}{\text{Depreciation Expense}}$$

and

$$\text{HALFGROW} = \frac{\text{Net Fixed Asset Additions} \times \text{Year}}{\text{Depreciation Expense}}$$

where Year = 1 if 1980 or 1981  
= 1/2 if 1982 or 1983

Net fixed asset additions were generated from a company's statement of changes in financial position, while depreciation expense was determined from a company's income statement. For the years 1982 and 1983 the variable HALFGROW was developed to reflect the impact of the half-year rule.<sup>(53)</sup> This was accomplished by multiplying net fixed asset additions by one half if the observation related to 1982 or 1983 and by one if the observation related to 1980 or 1981.

As growth in prior years may have an influence on the amount of deferred taxes recorded in the current year it was believed to be necessary to develop a variable that would consider this. The main factor to decide upon was how

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53 The half-year rule permits a company to claim only half of the CCA otherwise available in the year of purchase. In the analysis this has been proxied by taking one half of the net fixed asset additions for the years this rule was in effect.

many years prior to the year under consideration should be included. It was eventually decided to concentrate only on the prior year's growth. Therefore, the second independent variable developed is

$$\text{PRIGROW} = \frac{\text{Net Fixed Asset Additions for the Prior Year}}{\text{Depreciation Expense for the Prior Year}}$$

#### Adjusted Income

As has been mentioned, deferred tax accounting is not based on financial statement income but rather accounting income, the difference being caused by permanent differences. These are items that are reflected on either the income statement or the tax return in the current period but will never be reflected on the other in any time period. Therefore, to approximate accounting income it is necessary to adjust financial statement income for permanent differences.

The following calculation was used to compute adjusted income for the purpose of this research.

$$\begin{array}{rcccc} \text{ADJUSTED} & = & \text{FINANCIAL STATEMENT} & - & \text{INVENTORY} & + & \text{OTHER} \\ \text{INCOME} & & \text{INCOME} & & \text{ADJUSTMENT} & & \text{ADJUSTMENTS} \end{array}$$

Financial statement income was defined as the income figure reported by a company before income tax expense. Therefore, it excludes extraordinary items and typically excludes operating profits and losses associated with discontinued operations.

The inventory adjustment is likely the most common permanent difference companies have. The value of this deduction was approximated by taking three percent of opening inventory and multiplying this by one minus the percentage of identifiable assets held outside of Canada at the end of the prior year.<sup>(54)</sup> The percentage of identifiable foreign assets was determined by use of the segmented data dis-

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54 As Canadian public companies must only disclose total identifiable assets for each geographic segment, it was necessary to make the assumption that the balance sheet value for inventory was distributed in the same proportion as identifiable assets.

closed in a company's annual report. (55) If no such data were provided it was assumed that 100% of the company's assets were located in Canada. This is reasonable as the CICA Handbook requires disclosure of segmented data for public companies that have ten percent or more of their identifiable assets outside of Canada.

Other adjustments were determined by two means. First, by a review of a company's income statement to determine if there were any apparent permanent differences. The major permanent differences identified by this process were equity income from significantly influenced companies or non consolidated subsidiaries and minority interest expense. Both of these items have no analog in the income tax act. The second method of determining permanent differences was by reviewing notes to the financial statements, particularly any reconciliation between the effective and the statutory tax rate. Items found by this process include income bonds, non deductible depreciation expense, etc. For companies that did not disclose a reconciliation for 1983,

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55 Due to the sample selection procedure the percentage of assets held outside of Canada can not be greater than 30%.

their 1984 annual report was reviewed to determine any adjustments necessary for 1983. (56)

The calculation of adjusted income described above is a crude approximation of accounting income but as companies were not required to disclose a reconciliation of variations in their effective tax rate until 1984 it is one means of providing an estimate of accounting income that is likely to be better than using statement income without adjustment. The appropriateness of this adjustment was evaluated by comparing the effective tax rates of companies using both statement and accounting income in the denominator. The results of this comparison are provided in Appendix F.

To eliminate the impact of company size, adjusted income will be standardized by dividing it by total assets at year end. Therefore, the variable is defined as follows:

$$\text{INCPERAS} = \frac{\text{Adjusted Income}}{\text{Total Assets}}$$

56 Because of this procedure, it is believed that adjusted income for 1983 more closely approximates accounting income than other years.

## Results

### Income Statement Impact

Drawdown Proportion: Table 4-5 provides a summary of the impact of deferred income taxes on the income statement over the eleven year period from 1973 to 1983 inclusive. The data represents 864 company years, of which 563 (65.2%) had buildups, 205 (23.7%) had drawdowns, and 96 (11.1%) observations had no entry recorded on the income statement for deferred income tax. If the observations having no income statement entry for deferred income tax are eliminated, 73.3% of the observations had buildups and 26.7% had drawdowns.

The table indicates a large increase in the number of deferred income tax drawdowns in 1982 compared to prior years. Although the number of drawdowns declined in 1983 they remained high relative to the earlier years.

It is also interesting to note a slightly higher proportion of drawdowns in the years 1975 through 1977 relative to the surrounding years. This period will not be investigated in detail as the research was designed to concentrate on the

TABLE 4-5  
 NUMBER AND AVERAGE SIZE OF DRAWDOWNS AND BUILDUPS  
 AS REPORTED ON COMPANIES' INCOME STATEMENTS

	YEAR										
	1983	1982	1981	1980	1979	1978	1977	1976	1975	1974	1973
<b>BUILDUPS</b>											
MEAN	\$3,094	\$4,807	\$11,004	\$7,740	\$6,919	\$4,041	\$2,520	\$1,961	\$2,703	\$2,563	\$1,843
UPPER QUARTILE	\$2,426	\$2,767	\$3,434	\$2,943	\$3,271	\$2,481	\$1,630	\$1,410	\$1,372	\$972	\$105
MEDIAN	\$755	\$1,258	\$709	\$905	\$756	\$524	\$446	\$185	\$270	\$430	\$469
LOWER QUARTILE	\$164	\$173	\$201	\$240	\$240	\$161	\$100	\$51	\$85	\$164	\$92
MEAN EXCLUDING CANADIAN PACIFIC LTD	\$3,094	\$4,356	\$4,832	\$3,475	\$3,464	\$2,306	\$1,557	\$1,696	\$1,642	\$1,661	\$1,169
<b>DRAWDOWNS (000 \$)</b>											
MEAN	-\$6,088	-\$2,956	-\$1,984	-\$902	-\$525	-\$661	-\$465	-\$778	-\$460	-\$798	-\$193
UPPER QUARTILE	-\$31	-\$308	-\$101	-\$108	-\$53	-\$139	-\$33	-\$221	-\$26	-\$30	-\$12
MEDIAN	-\$648	-\$1,111	-\$333	-\$372	-\$445	-\$278	-\$157	-\$332	-\$170	-\$130	-\$49
LOWER QUARTILE	-\$2,393	-\$3,190	-\$2,241	-\$1,068	-\$920	-\$1,344	-\$624	-\$911	-\$700	-\$779	-\$367
MEAN EXCLUDING CANADIAN PACIFIC LTD	-\$2,181	-\$2,956	-\$1,984	-\$902	-\$525	-\$661	-\$465	-\$778	-\$460	-\$798	-\$193
DEFERRED TAX EXPENSE AS A PERCENT OF:											
INCOME BEFORE TAX	- 2.7%	3.2%	19.2%	13.8%	13.7%	12.3%	9.2%	7.5%	10.9%	10.0%	11.1%
NET INCOME	- 5.5%	6.9%	42.9%	28.3%	27.3%	23.4%	17.1%	13.1%	24.3%	19.4%	20.8%

early part of the 1980s. However, the possibility that the drawdowns prior to 1980 were caused by factor similar to those underlying the drawdowns of the early 1980s will be briefly considered towards the end of this chapter.

Over the four year period 1980-83 there were 100 drawdowns spread over 55 different companies. Of the 25 companies that did not have a deferred tax drawdown, five of these had no entry for deferred tax expense on the income statement in any of the four years. Therefore, it can be concluded that the occurrence of a drawdown was reasonably widespread over the first four years of the 1980's, with the majority occurring in 1982 and 1983.

Research question number one is to determine if the proportion of companies having drawdowns in 1982 was significantly higher than in prior years. It is hypothesised that the number of drawdowns would be higher due to a decrease in fixed asset additions and the occurrence of loss carryforwards. Both of these factors are expected to occur during recessionary periods. In addition, the adoption of the half-year rule in November 1981 could lead to drawdowns in companies close to a steady state in fixed asset additions. By assuming that the years prior to 1982 are repre-



representative of the normal behaviour in deferred income tax expense, a binomial test of proportions can be used to determine if the proportion of drawdowns observed in 1982 is significantly different from that observed in prior years. Prior to 1982, 21.9% of all observations having an income statement entry for deferred taxes were drawdowns. This proportion is consistent with Beechy (1981) who found that 20.4% of his sample had income statement drawdowns. In 1982, 53.4% of all observations having an income statement entry for deferred income taxes had drawdowns. This increase in proportion is significant at the 0.01 level using either a one or two-tailed test. If the same test is conducted for 1983, it also turns out to have a proportion of drawdowns significantly greater than that observed during the 1973 to 1981 period.

Percentage of Income: Over the period 1973 to 1979 total deferred tax expense divided by total income before tax was 11.3% and when divided by total net income it was 21.8%. These figures indicate a similarity between this sample and that of Beechy (1981), who reported that net deferred tax expense divided by total income after tax was 20.9% over the 14 year period ending in 1978. The existence of any similarity disappears beginning in 1981 when there was a

large increase in the impact of deferred tax expense on the income statement. In 1982 there was a very large decrease in the apparent impact of deferred tax expense on net income, but this reflects the large increase in drawdowns. In 1983, the impact of total deferred income tax expense as a percentage of income before income taxes and net income becomes negative for the first time, indicating that the total dollar value of drawdowns was larger than the total dollar value of buildups for the sample companies.

Dollar Size of Drawdowns The average size of buildups showed a large decrease in 1982 and a further decrease in 1983. This is not unexpected given the government's adoption of the half-year rule in November 1981, and a decline in fixed asset additions relative to depreciation expense in these years. The average size of drawdowns increased steadily over the five year period ending in 1983, but care must be taken in interpreting the average drawdown figure for 1983 as it includes a drawdown of \$115,501,000 recorded by Canadian Pacific Ltd. The average drawdowns and buildups are recomputed on Table 4-5 with Canadian Pacific Ltd. excluded. A similar pattern emerges, but it is not as marked. Due to the impact of some large companies whose deferred tax entry can have a great impact

on the mean, the quartile rankings are also provided in Table 4-5. It is difficult to discern a pattern when these numbers are considered. This is due to the change in the size and composition of those companies having buildups.

Research question number two is to determine if there was a statistically significant change in the magnitude of deferred tax expense (recovery) in 1982 relative to prior years. To investigate this a company's deferred tax expense in 1981 was subtracted from the deferred tax expense in 1982. In more stable times one would expect that this number would be positive due to inflation increasing the cost of the same level of productive capacity. The results (Table 4-6) indicate that 55 comparisons were negative, 19 were positive and six had no difference. (57) If the six observations having no difference are excluded, then we observe that 74.3% of the observations had a deferred tax expense entry that was lower in 1982 compared to 1981. By making the conservative assumption that there is a fifty percent chance that under normal conditions deferred tax expense will be higher or lower in one year compared to the

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57 All observations having no difference arose because there were no income statement entries for deferred income tax for these companies in either 1981 or 1982.

TABLE 4-6

PAIRED-DIFFERENCE COMPARISON OF DEFERRED TAX  
EXPENSE BETWEEN 1982 AND 1981

NON-PARAMETRIC COMPARISON

Paired Comparisons of deferred tax expense (1982-1981)

1982 > 1981	19
1982 < 1981	55
1982 = 1981	<u>6</u>
	<u>80</u>

Binomial Test of Proportion of Decreases Compared to Randomness

Proportion of decreases      55/74 = 74.32%

$$\alpha = \frac{.5 \times .5}{74}$$

$$= 0.0581$$

$$z = \frac{.7432 - .50}{0.0581}$$

$$= 4.186$$

(significant 0.01 level)

PARAMETRIC COMPARISONS

Variable	Mean Difference	Standard Error of Mean	T	PR >  T
Deferred Tax Expense (000's)	-\$6.517	\$4.032	-1.62	0.1100
Deferred Tax Expense / Total Assets	-0.898%	0.235%	-3.81	0.0003

prior year, it is possible to test the hypothesis that the proportion of decreases in the sample is different from 50%. This binomial test indicates that the proportion of

decreases is significantly greater than 50% at the 0.01 level using either a one or two-tailed test.

Related tests using parametric paired-difference tests were conducted to compare the change in dollar value of deferred tax expense between 1982 and 1981 and also to compare DTEPERAS. The results are also presented in Table 4-6. As may have been anticipated the comparison of the raw income statement figures did not show a significant difference despite a mean decrease of \$6.5 million. This is due to the very large standard error of the mean. However, when these figures are adjusted for company size, the statistics indicate a significant reduction in the deferred income tax expense between 1982 and 1981.

Although it is considered more appropriate to analyze the data using averages, Table 4-7 was prepared as it reinforces the dramatic change in the income statement impact of deferred income taxes by providing the total dollar figure of buildups and drawdowns for the sample companies. In 1981, the total dollar value of buildups for all the sample companies was \$605.2 million, the maximum for the period studied. In 1982 this declined by 73% to \$163.4 million and then declined by 23% to \$126.8 million in 1983. Only

TABLE 4-7

Total Dollar Value of Buildups and  
Drawdowns for Sample Companies  
(In 000's)

Year	Number of Observations	Total Dollar Value of Buildups	Total Dollar Value of Drawdowns
1983	80	126,854	176,559
1982	80	163,428	115,265
1981	80	605,201	35,704
1980	80	448,920	12,633
1979	80	401,298	7,353
1978	80	238,424	9,252
1977	80	128,545	9,295
1976	79	96,073	15,556
1975	78	135,163	8,731
1974	73	135,843	7,979
1973	74	101,387	1,545

two years for which the data were gathered, 1973 and 1976, were the total dollar value of buildups lower

With drawdowns the reverse scenario occurred. In 1981 the total dollar value of drawdowns was \$35.7 million after having increased 183% over the 1980 total of \$12.6 million. The total dollar value of drawdowns increased a further 223% in 1982 to a total of \$115.3 million and then by 53% in 1983 to \$176.5 million. The 1982 figure was so large that this one year alone had total drawdowns greater than

all of the drawdowns in the nine prior years studied combined.

From the data presented in Tables 4-5, 4-6, 4-7 and the results of the two research questions we can conclude that the years 1982 and 1983 are unusual relative to the prior trend in the behaviour of deferred income tax expense. This is true both in terms of the number of deferred income tax drawdowns and the impact of deferred income taxes on the income statement.

#### Accumulated Long-Term Deferred Income Taxes

Tables 4-8 and 4-9 provide standard ratio analysis to indicate the magnitude of long term deferred income taxes as recorded on a company's balance sheet. Table 4-8 presents both the mean and the median of the percentages for each company for that year and Table 4-9 provides similar ratios except that they are computed as the sum of each company's long term accumulated deferred income tax divided by the sum of the applicable balance sheet item.

TABLE 4-8

LONG TERM ACCUMULATED DEFERRED INCOME TAX AS  
PERCENT OF VARIOUS FINANCIAL STATEMENT ITEMSAVERAGE OF EACH COMPANY'S PERCENTAGE  
(standard deviation)  
(median)

YEAR	NUMBER OF COMPANIES WITH NO LONG TERM DEFERRED INCOME TAX	NUMBER OF OBSERVA- TIONS	TOTAL ASSETS	RETAINED EARNINGS	OWNERS EQUITY
1983	10	80	4.30% (5.24%) (2.18%)	26.02% (58.09%) (6.99%)	12.09% (17.00%) (4.85%)
1982	9	80	4.44% (5.03%) (2.38%)	27.87% (49.75%) (11.05%)	12.80% (16.31%) (6.11%)
1981	8	80	4.98% (4.90%) (3.10%)	30.51% (44.33%) (11.66%)	14.76% (18.37%) (8.57%)
1980	9	80	4.95% (4.81%) (3.57%)	28.23% (45.42%) (12.73%)	13.19% (13.67%) (9.29%)
1979	7	80	4.71% (4.64%) (3.53%)	29.59% (57.64%) (10.38%)	12.42% (13.34%) (7.41%)
1978	9	80	4.44% (4.46%) (3.00%)	27.34% (61.66%) (10.67%)	11.56% (13.26%) (7.49%)
1977	8	80	4.27% (4.27%) (2.78%)	22.04% (34.55%) (10.73%)	10.74% (11.30%) (7.19%)
1976	10	79	4.32% (4.49%) (2.68%)	-48.43%* (570.95%) (9.85%)	11.94% (13.53%) (7.05%)
1975	12	78	4.57% (4.66%) (2.83%)	14.59% (65.44%) (11.50%)	12.56% (15.92%) (6.68%)
1974	10	73	4.74% (4.65%) (3.16%)	23.04% (48.27%) (13.45%)	14.47% (22.70%) (8.71%)
1973	10	74	4.63% (4.71%) (2.77%)	31.94% (52.82%) (11.26%)	13.43% (20.96%) (6.23%)

\* For one observation, long term deferred taxes divided by retained earnings was -5027.27%. This was caused by a very small deficit in the company's retained earnings. When this observation is removed the mean becomes 15.21%.



TABLE 4-9

LONG TERM ACCUMULATED DEFERRED INCOME TAX AS  
PERCENT OF VARIOUS FINANCIAL STATEMENT ITEMSSUM OF EACH COMPANY'S ACCUMULATED DEFERRED INCOME  
TAX DIVIDED BY THE SUM OF THE FINANCIAL ITEM  
FOR EACH COMPANY

YEAR	COMPANIES WITH NO LONG-TERM DEFERRED INCOME TAX	TOTAL NUMBER OF OBSERVA- TIONS	TOTAL ASSETS	RETAINED EARNINGS	OWNERS EQUITY
1983	10	80	8.07%	38.35%	26.33%
1982	9	80	8.52%	41.15%	28.00%
1981	8	80	8.63%	35.63%	27.86%
1980	9	80	7.98%	35.63%	23.74%
1979	7	80	7.85%	34.35%	22.39%
1978	9	80	7.19%	32.43%	20.24%
1977	8	80	7.00%	30.75%	19.20%
1976	10	79	6.96%	30.93%	19.48%
1975	12	78	7.21%	31.95%	19.56%
1974	10	73	7.36%	34.81%	21.04%
1973	10	74	7.11%	33.32%	18.89%

Three things are apparent. First, there are a large number of companies that do not have any long term deferred income

taxes, despite the fact that the sampling plan excluded any company that did not follow tax allocation. (58)

The second observation is that accumulated deferred income taxes are more significant in larger companies than in smaller ones. This is indicated by the smaller percentages when the sum of the percentage for each company is used. This observation is also reinforced by Table 4-10 which provides Spearman Correlation Coefficients between size of the company as measured by total assets, and long term deferred income tax as a percent of total assets, owners equity and retained earnings. This suggests three possibilities: larger companies have slower depreciation rates, larger companies are expanding their fixed asset base more rapidly and larger companies are less likely to encounter large losses leading to deferred income tax

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58 For at least some portion of the eleven year period for which data were collected, every company included in the sample had a long term deferred tax balance of some type. Six companies did not have a long term deferred tax balance on their balance sheet from 1980 to 1983 inclusive; however, only two, Strathcona Resources and Westmills Carpets, did not have any current deferred tax or a deferred tax entry on their income statement at least once during the period 1980 to 1983. These two companies still follow deferred tax allocation but had reduced the balance sheet figure to zero due to losses in prior years.

TABLE 4-10

ASSOCIATION BETWEEN SIZE OF COMPANY (\*) AND VARIOUS  
MEASURES OF RELATIVE SIZE OF ACCUMULATED  
LONG TERM DEFERRED INCOME TAX

YEAR	SAMPLE SIZE	SPEARMAN CORRELATION COEFFICIENTS**		
		PERASSET	PERRETEA	PEREQU
1983	80	0.472	0.513	0.502
1982	80	0.532	0.567	0.572
1981	80	0.441	0.414	0.486
1980	80	0.372	0.408	0.405
1979	80	0.406	0.424	0.416
1978	80	0.364	0.367	0.378
1977	80	0.366	0.401	0.373
1976	79	0.334	0.409	0.305
1975	78	0.357	0.427	0.353
1974	73	0.394	0.411	0.388
1973	74	0.443	0.443	0.432

PERASSET: Accumulated deferred income taxes divided by total assets.

PERRETEA: Accumulated deferred income taxes divided by retained earnings.

PEREQU: Accumulated deferred income taxes divided by total owners equity.

\* Size of company was measured by ranking each company in each year based on total assets.

\*\* All of the Spearman Correlation Coefficients are significant at the 0.01 level.

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drawdowns. This last point could be due to greater diversification or a partial monopoly position in their market.

The third observation about accumulated deferred income taxes is that they became smaller as a percentage of total assets in 1982 and this was followed by a further decrease in 1983. This is particularly apparent from Table 4-9 which indicates the sum of long term deferred income tax divided by the sum of total assets increased each year from 1976 to 1981, after which it experienced a decline. The decline in 1982 and 1983 is in sharp contrast to the growing trend in this figure that was noted by Drummond and Wigle (1981).

Research question three is to determine if there was a statistically significant difference in accumulated long-term deferred tax as a percentage of total assets between 1982 and 1981, while research question four considers the same issue, but as a measure uses accumulated deferred tax as a percentage of shareholders' equity.

Table 4-11 provides summary data for a statistical comparison of these ratios. A paired-difference test of long-term accumulated deferred income tax as a percentage of total assets and owners' equity was conducted between each successive year. Except for the increase in long term deferred income tax as a percentage of owners' equity between

TABLE 4-11

PAIRED COMPARISON OF LONG-TERM DEFERRED INCOME TAX  
AS A PERCENTAGE OF TOTAL ASSETS AND OWNERS EQUITY

YEARS COMPARED	SAMPLE SIZE	MEAN DIFFERENCE IN LONG TERM DEFERRED TAX AS A PERCENT OF			
		ASSETS	T	OWNERS EQUITY	T
1983-82	80	-0.0014	-0.79	-0.0071	-1.44
1982-81	80	-0.0054	-2.92**	-0.0196	-2.84**
1981-80	80	0.0003	0.14	0.0157	1.63
1980-79	80	0.0025	1.23	0.0077	1.46
1979-78	80	0.0026	1.46	0.0086	1.53
1978-77	80	0.0018	1.13	0.0082	1.06
1977-76	79	-0.0001	-0.08	-0.0111	-1.26
1976-75	78	-0.0020	-1.40	-0.0047	-0.80
1975-74	73	0.0004	0.33	-0.0145	-0.67
1974-73	73	0.0010	0.79	0.0102	2.46*

\* significant at the 0.05 level (two-tailed test)

\*\* significant at the 0.01 level (two-tailed test)

1973 and 1974, no year experienced a statistically significant increase in either of these two ratios. As anticipated, there was a statistically significant decline (0.01 level) in long-term accumulated deferred tax as a percent-

age of total assets and owners' equity between 1981 and 1982. Although not statistically significant this decline continued into 1983. The fact that 1982 was the only year experiencing a statistically significant decline in these two percentages reinforces the need for further investigation of the factors associated with this behaviour.

As noted earlier, the years 1975 through 1977 exhibited unusual behaviour with respect to deferred income taxes. However, none of the paired-difference tests for this period were significant.

#### Association of Drawdowns with Asset Size

Research question five is to determine if there is any association between the occurrence of an income statement drawdown and the size of a company. As such, it is a partial replication of the work of Voss (1968) but uses Canadian data rather than U.S. data. Company size was measured using total assets. For each year the sample companies were ranked based on total assets and then separated into

quartiles. In those years where the number of observations was not divisible by four, any extra observations were allocated to the quartiles having the smaller companies.

The contingency table developed to analyze this data is shown in Table 4-12. An immediate observation is that larger companies are more likely to have an income statement impact for deferred income taxes than smaller companies.

When the numbers are summed by year for each cell there appears to be a slight tendency for the quartile containing the largest companies to experience fewer drawdowns than expected if there was no association with size. The reverse of this does not hold for the companies in the smallest quartile. Therefore, although there is a tendency for the largest companies to have fewer drawdowns, there is no strong relationship between the occurrence of drawdowns and the size of the company during the period investigated. This observation is reinforced by the lack of significance of the chi-square statistic computed using only those observations having buildups or drawdowns. Therefore, it is not possible to reject the hypothesis that the distribution

TABLE 4-12

BEHAVIOUR OF DEFERRED INCOME TAX EXPENSE BY SIZE OF COMPANY (1)

(Bracketed figures refer to expected cell count after removing those observations having no income effect)

	YEAR	SMALLEST QUARTILE	SECOND QUARTILE	THIRD QUARTILE	LARGEST QUARTILE	TOTAL
DRAW DOWN	1973	2	3	3	0	
	1974	3	2	3	2	
	1975	7	2	6	6	
	1976	3	5	6	6	
	1977	4	6	7	3	
	1978	45 3	60 6	57 4	43 1	205
	1979	(46) 2	(52) 7	(51) 3	(56) 2	
	1980	3	6	2	3	
	1981	3	6	5	4	
	1982	10	10	9	10	
1983	5	7	9	8		
NO INCOME EFFECT	1973	4	4	2	1	
	1974	3	4	2	1	
	1975	1	4	3	1	
	1976	2	3	4	1	
	1977	4	2	3	0	
	1978	46 3	23 2	23 2	4 0	96
	1979	5	1	2	0	
	1980	5	1	2	0	
	1981	5	1	1	0	
	1982	6	0	1	0	
1983	8	1	1	0		
BUILD UPS	1973	13	12	13	17	
	1974	13	12	13	15	
	1975	12	14	10	14	
	1976	15	12	10	12	
	1977	12	12	10	17	
	1978	127 14	134 12	135 14	167 19	563
	1979	(126) 13	(142) 12	(141) 15	(154) 18	
	1980	12	13	16	17	
	1981	12	13	14	16	
	1982	4	10	10	10	
1983	7	12	10	12		
		218	217	215	214	864

Using only those observations having a buildup or drawdown, the chi-square is 6.829 which is not significant at the 0.05 level with 3 degrees of freedom.

(1) Size of company is proxied by using total assets.



of drawdowns is homogeneously distributed across company size.

#### Fixed Asset Additions and Growth in Net Fixed Assets

A traditional explanation for the occurrence of deferred income tax drawdowns is a reduction in fixed asset additions and more precisely a reduction in fixed asset additions relative to depreciation expense.

Research questions six and seven investigate whether fixed asset additions in 1982 were lower than fixed asset additions in 1981. Two paired difference tests were conducted. The first, is based on net fixed asset additions derived from a company's statement of changes in financial position, while the second is based on net fixed asset additions divided by depreciation expense (CROW).

Tables 4-13 and 4-14 provide the results of these comparisons over the eleven year period for which data was collected. For net fixed asset additions (Table 4-13) only the

comparison between 1980 and 1979 had a significant difference at the 0.05 level and this indicated an increase in net fixed asset additions. It is interesting to note that both 1983 and 1982 showed declines in fixed asset additions relative to their preceeding year, with 1983 additions being only 12% higher than the average fixed asset additions of 1979.

The comparison of growth rates (Table 4-14) is considered a better comparison as the division of net fixed asset additions by depreciation expense tends to standardize additions for the effect of company size, thus, eliminating considerable noise from the analysis. Only two comparisons were significant at the 0.05 level. Between 1979 and 1978 there was a significant increase in the growth rate while between 1982 and 1981 there was significant decline.

The results of this analysis indicate that the growth rate in fixed asset additions did indeed decline in 1982 and therefore may be an explanation for the increase in drawdowns observed in this year. However, it should be noted that in all years the mean growth rate was in excess of one. A growth rate greater than one, all other things

TABLE 4-13

PAIRED DIFFERENCE COMPARISON OF CHANGES BETWEEN SUCCESSIVE  
YEARS IN NET FIXED ASSET ADDITIONS

(standard error of the mean)

YEARS COMPARED	MEAN (IN 000's)		MEAN PAIRED DIFFERENCE	T
	FIRST YEAR	SECOND YEAR		
1983-1982	\$29,043	\$42,692	-\$13,649 (10,035)	-1.36
1982-1981	\$42,692	\$50,567	-\$7,875 (4,851)	-1.62
1981-1980	\$50,567	\$38,278	\$12,289 (9,330)	1.32
1980-1979	\$38,278	\$25,900	\$12,378 (6,019)	2.06*
1979-1978	\$25,900	\$21,518	\$4,382 (3,170)	1.38
1978-1977	\$21,518	\$16,510	\$5,008 (4,088)	1.23
1977-1976	\$16,510	\$18,394	-\$1,690** (2,414)	-0.70
1976-1975	\$18,394	\$19,164	-\$539** (789)	-0.68
1975-1974	\$19,164	\$16,325	\$3,879** (2,214)	1.75
1974-1973	\$16,235	\$11,323	\$4,915** (3,021)	1.63

\* Significant at the 0.05 level.

\*\* Mean paired difference does not equal the difference between first and second year due to unequal number of observations.

TABLE 4-14

PAIR DIFFERENCE COMPARISON OF CHANGES BETWEEN SUCCESSIVE  
YEARS OF GROWTH IN NET FIXED ASSETS (1)

(standard error of the mean)

YEARS COMPARED	MEAN		MEAN PAIRED DIFFERENCE	T
	FIRST YEAR	SECOND YEAR		
1983-1982	1.217	1.514	-0.297 (0.199)	-1.49
1982-1981	1.514	2.438	-0.923 (0.306)	-3.02*
1981-1980	2.438	2.428	0.010 (0.474)	0.02
1980-1979	2.428	2.495	-0.068 (0.327)	-0.21
1979-1978	2.495	1.473	1.022 (0.356)	2.87*
1978-1977	1.473	1.818	-0.345 (0.306)	-1.12
1977-1976	1.818	1.845	-0.031** (0.209)	-0.15
1976-1975	1.845	2.200	-0.339** (0.335)	-1.01
1975-1974	2.200	2.289	-0.022** (0.335)	-0.06
1974-1973	2.289	2.301	-0.031** (0.253)	-0.12

\* significant at the 0.01 level

\*\* Mean paired difference does not equal the difference between first and second year due to unequal number of observations.

(1) Growth in net fixed assets is defined as follows:

$$\frac{\text{Net Fixed Asset Additions}}{\text{Depreciation Expense}}$$

equal, would lead to deferred tax buildups and not drawdowns.

Research question number eight was designed to investigate the association of fixed asset growth and the behaviour of deferred income tax. Table 4-15 shows a positive relationship between growth in fixed asset additions and the occurrence of a buildup. When Fishers Exact Probability Test was conducted on the years 1980-83 an association was confirmed at the 0.01 level in 1980 and 1983 and at the 0.05 level in 1982. In 1981 this relationship was not significant. This leads one to believe that an association does exist, but is not as strong as would be expected. This may be due to other confounding factors such as the level of income and prior years' growth.

To extend this analysis, Spearman Correlation Coefficients were generated for the years 1980-83 to determine the extent of correlation between growth (fixed asset additions divided by depreciation expense) and deferred tax expense divided by total assets. In all four years the correlations were significant at the 0.01 level with the correlations ranging from 0.315 to 0.406.

TABLE 4-15

CONTINGENCY TABLE OF ASSOCIATION BETWEEN GROWTH  
IN FIXED ASSET ADDITIONS AND OCCURRENCE OF  
OF A BUILDUP OR DRAWDOWN

		GROW < 1	GROW > 1	
BUILDUP	1980	5	53	58
	1981	7	48	55
	1982	10	24	34
	1983	10	31	41
DRAWDOWN	1980	6	8	14
	1981	5	13	18
	1982	23	16	39
	1983	18	11	29
		84	204	288

## Fishers' Exact Probability Test

	one-tail	two-tail
1980	0.0051	0.0051
1981	0.1307	0.1546
1982	0.0104	0.0180
1983	0.0017	0.0027

Spearman Correlation Coefficients  
Between GROW and DTEPERAS

YEAR	SAMPLE SIZE	CORRELATION	PROB > 0
1980	72	0.40554	0.0004
1981	73	0.34309	0.0030
1982	73	0.31469	0.0067
1983	70	0.35351	0.0027

### Income Sign and the Occurrence of Drawdowns and Buildups

Research question number nine was designed to determine if there was an association between income sign and the occurrence of a buildup or drawdown. To investigate this, a contingency table showing the sign of adjusted income before income tax on one axis and the occurrence of a drawdown or buildup on the other axis was developed (Table 4-16). Those observations having no deferred tax impact on their income statement were removed from the analysis, leaving 768 observations over eleven years.

Eighty-nine observations (59) had negative income before tax and a deferred tax entry on the income statement. Of these, only fourteen had a buildup in deferred income tax, indicating a strong association between negative income be-

59 As these observations cover eleven years for eighty companies, the observations can not be described as independent. However, the 75 observations having deferred income tax drawdowns and negative income represent 38 different companies, and only three companies had four or more drawdowns of this type.

TABLE 4-16

CONTINGENCY TABLE OF ASSOCIATION OF INCOME SIGN AND OCCURRENCE OF A BUILDUP OR DRAWDOWN  
(Bracketed figures refer to the expected cell count)

		INCOME BEFORE INCOME TAX*			
		NEGATIVE	POSITIVE		
DRAW-DOWNS	1973	2	6	205	
	1974	3	7		
	1975	5	14		
	1976	7	13		
	1977	5	15		
	1978	75 (23.8)	6 130 (181.2)		8
	1979	3	11		
	1980	4	10		
	1981	9	9		
	1982	22	17		
1983	9	20			
BUILD-UPS	1973	0	55	563	
	1974	0	53		
	1975	2	48		
	1976	1	48		
	1977	2	49		
	1978	14 (65.2)	0 549 (497.8)		59
	1979	1	57		
	1980	3	55		
	1981	3	52		
	1982	1	33		
1983	1	40			
		89	679	768	

\* Income is defined as adjusted income for the years 1980-83 and income before tax for earlier years.

Fisher's exact test by year (1 degree of freedom.)

1973 prob = 0.0031	1979 prob = 0.0215
1974 prob = 0.0030	1980 prob = 0.0233
1975 prob = 0.0145	1981 prob = 0.0001
1976 prob = 0.0005	1982 prob = 0.0000
1977 prob = 0.0164	1983 prob = 0.0011
1978 prob = 0.0000	



fore tax and drawdowns. This association between income and deferred income tax behaviour is supported by the Fisher Exact Probability test on each of the eleven years considered. In seven of the years the test was significant at the 0.01 level and in the four other years it was significant at the 0.05 level.

Of the 205 observations having drawdowns, 130 (63.4%) were associated with positive income before tax. This suggests that there are factors other than income impacting on deferred income tax drawdowns. However, it must be noted that the income figures prior to 1980 are before any adjustment for the impact of permanent differences. This is particularly relevant for years subsequent to 1976, when the three percent inventory allowance became effective.

It would be expected that drawdowns due to accounting losses would be larger, on a relative basis, than drawdowns related to inadequate fixed asset additions. This is because a drawdown due to a loss, if fully recognized, would be equal to the average rate of accumulation multiplied by the amount of the accounting loss. Therefore, a large loss could completely eliminate deferred income taxes built up over a period of years. Drawdowns related to inadequated

fixed asset additions tend to more gradual as the company is likely to still be able to claim some CCA on assets purchased in prior years.

To investigate whether this predicted relationship is correct Table 4-17 was prepared by classifying drawdowns and buildups by income sign. A comparison of the mean of DTEPERAS indicates that the average size of drawdowns associated with negative income is 3.4  $(-0.0197/-0.0058)$  times larger than drawdowns associated with positive income. When build-ups are considered, the mean of deferred tax expense divided by total assets is 2.53  $(0.0109/0.0043)$  times larger for companies having positive income compared to those having negative income. The significance of these differences was tested using the Wilcoxon Rank Sum Test. As the data at the bottom of Table 4-17 indicates, the sign of income has a significant impact on the magnitude of deferred income tax build-ups and drawdowns, and this impact is in the opposite direction to income before income tax. That is, when income before income tax is high deferred income tax taxes tends to reduce income and when it is negative deferred income taxes tends to increase net income. This is consistent with the tendency of deferred income

TABLE 4-17

ADDITIONAL DATA ON THE ASSOCIATION BETWEEN INCOME\*  
AND THE OCCURRENCE OF BUILDUPS AND DRAWDOWNS  
(Dollar figures in 000 s)

	DRAWDOWNS		BUILDUPS	
	NEGATIVE INCOME	POSITIVE INCOME	NEGATIVE INCOME	POSITIVE INCOME
NUMBER OF OBSERVATIONS	75	130	14	549
MEAN OF DEFERRED TAX EXPENSE	-\$2,154	-\$1,833**	\$226	\$4,696
STANDARD DEVIATION	\$4,097	\$10,402	\$351	\$21,725
MEAN OF DEFERRED TAX EXPENSE DIVIDED BY TOTAL ASSETS	-0.0197	-0.0058	0.0043	0.0109
STANDARD DEVIATION	0.0188	0.0073	0.0032	0.0103

\*\* The mean and standard deviation are dramatically influenced by Canadian Pacific Limited which in 1983 had a drawdown of \$115,501,000. If this observation is excluded the mean drawdown is reduced to \$952,000.

WILCOXON RANK SUM SCORES

Comparison of Drawdowns Classified by Income Sign

	Z-score	
Deferred Tax Expense	3.7007	0.0002
Deferred Tax Expense Divided by Total Assets	6.8942	0.0000

Comparison of Build-ups Classified by Income Sign

	Z-score	
Deferred Tax Expense	3.2245	0.0013
Deferred Tax Expense Divided by Total Assets	2.7744	0.0055

\* Income refers to adjusted income for the years 1980-83 and to income before income tax as reported in a companies' financial statements for the years 1973-79.

taxes to smooth income that is often referred to in the literature.

Considering this issue on a year by year basis, in only one of the eleven years was the mean of drawdowns associated with positive income larger than for drawdowns associated with negative income. From this analysis, it can be concluded that drawdowns associated with negative income are larger relative to asset size than those drawdowns associated with positive income.

#### Comparison to Prior Studies

Table 3-2 presented a summary of prior Canadian studies dealing with deferred income taxes. This is reproduced in Table 4-18, along with addition of the results of this research.

Except for McCalden's study, the details of which are unknown, all of the studies are based on publicly listed companies and have a tendency to be biased towards larger

TABLE 4-18  
COMPARISON OF DEFERRED INCOME TAX STUDIES USING CANADIAN DATA

Year published	Cawsey et al	McCalden	Beechy	Drummond Mige	Lanfranco Robertson	Robertson
1973	1958-67	Unpublished	1981	1981	1984	1973-83
Period of Study	1954-70	1954-70	avg 14 yrs ending 1978	1970, 75, 80 <sup>1</sup>	1980-82	
Sample Size	275	N/G	293	70	34	80
Firms using D.T.	229	36	266	70	34	80
Data Source	Financial Post	Annual Reports	Canadian Computat	Annual Reports	Annual Reports	Annual Reports
% Drawdowns	9.3%	N/G	20.4%	N/G	1980: 8.8% 1981: 17.6% 1982: 52.9%	1973-79: 19.3% 1980: 17.5% 1981: 22.5% 1982: 48.8% 1983: 36.3%
\$ Value Drawdowns as Percent of \$ Value Buildups	3.5%	1954-68: 3.5% 1969-70: 10.3%	4.7%	N/G	1980: 1.6% 1981: 8.2% 1982: 78.3%	1973-79: 4.8% 1980: 2.8% 1981: 5.9% 1982: 70.5% 1983: 139.2%
Def. Tax as % of Income	BU 14.8% DO 9.5%	N/G	20.9%	N/G	N/G	AVG 1973-79: 21.8% 1980: 28.3% 1981: 42.9% 1982: 6.9% 1983: -5.5%
Def. Tax as % of Assets	N/G	N/G	N/G	1970-6.1% 1975-8.3% 1980-9.3%	1980-9.6% 1981-9.3% 1982-8.4%	1973-79: 4.5% 1980: 5.0% 1981: 5.0% 1982: 4.4% 1983: 4.3%
Approach	Income Statement	Balance Sheet	Income Statement	Balance Sheet	Income Statement	Income Statement

public companies by the nature of the sample selection process. Although adequate data are not available to evaluate completely, another potentially significant difference between prior samples and the one presented here is a tendency to eliminate, either intentionally or by the nature of the selection process, those companies that do not have deferred income tax balances on their balance sheet. This did not occur for this research as the selection procedure was based on whether the company's accounting policy was to follow deferred tax accounting.

The data generated in this research are similar to prior studies except in two areas. The first noticeable difference between the prior research and this study is deferred taxes as a percentage of assets. The data collected for this study indicate that deferred taxes as a percentage of assets is not as significant as prior studies have indicated nor has the growth in this figure been as rapid as previously believed. The difference in magnitude and to some extent the rate of growth is related to those companies in the sample that have a zero deferred tax balance.

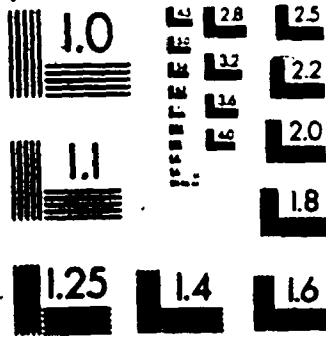
The second difference relates to the behaviour of deferred income taxes in the period surrounding the 1982 recession.

With the exception of Lanfranconi and Robertson (1984), all bases of comparison exhibit unusual behaviour of deferred taxes relative to the prior studies. The percentage of drawdowns is much higher, as well as drawdowns as a percentage of buildups. Together, these two items resulted in the unusual behaviour of deferred tax as a percentage of income.

The comparison indicates that, other than deferred tax as a percentage of assets, the sample chosen for this research exhibits similarities to the more recent research in the period leading up to the recession. However, the similarities cease with the onset of the recession. This reinforces the significance of investigating the factors that contributed to this change and should enhance the generalizability of the findings.

# 3

MICROCOPY RESOLUTION TEST CHART  
NBS 1010a  
ANSI and ISO TEST CHART No. 2





### Conclusion

From the various univariate analysis and the descriptive data provided in Part 1, the following conclusions can be drawn:

1. The behaviour of deferred income tax expense in the recessionary period surrounding 1982 was unusual relative to prior years. This is true both for this sample and also when the comparison is made to samples used by other authors.
2. Growth in fixed assets during the recessionary period exhibited a large decline, the equivalent of which was not present in the prior periods examined. However, the average growth rate in fixed assets was greater than one in all years including 1982.
3. There was a positive association between growth in fixed asset additions and the behaviour of deferred income taxes as a percentage of total assets.

4. There was a strong association between negative adjusted income and both the occurrence of an income statement drawdown and the relative size of these drawdowns. However, only a minority of drawdowns (34%) were associated with negative adjusted income before income tax.
  
5. The growth in accumulated deferred income taxes as a percentage of assets was slower in the sample selected than would have been anticipated based on prior studies.

### MULTI-VARIATE ANALYSIS

#### Choice of Techniques

Two statistical techniques were initially considered for the multi-variate section of the research: logit analysis and regression analysis. Logit analysis could be applied

be defining the dependent variable, the occurrence of a drawdown, as a one if a drawdown occurred or zero if there was a buildup. Those companies without an income statement entry for long term deferred income taxes would be eliminated.

The most significant problem with this analytical technique is that it eliminates any information contained in the dollar size of the drawdown. For example, a drawdown of \$1,000 in a very large company would be classified in the same way as a \$100,000 drawdown in a much smaller company. The elimination of any information contained in the size of the deferred income tax expense appeared unwarranted, therefore, an analytical technique that would incorporate the size impact was investigated.

Regression analysis allows for a continuous dependent variable and thus considers both the existence of a drawdown and its magnitude. Therefore, it is likely to be a more powerful technique, however, the choice of this technique leads to the issue of standardizing variables for the size of the company and assumes, among other things, that the resulting error terms are normally distributed.

Attempts were made to do regression analysis with DTEPERAS as the dependent variable. INCPERAS, a measure of both the current and prior years fixed asset additions, a measure of economic life of the assets, a dummy variable for potential of Class 29 treatment, and a variable for accounting losses were used as the independent variables. Various runs were conducted, including all observations by year, only buildups and only drawdowns. A summary of the results is provided in Appendix G. In general, although the independent variables had the sign that would be predicted, the residuals tended to depart from normality. This was largely due to a number of outliers in each run. The outliers were reviewed and the annual reports were read again. No systematic explanation was found for the outliers although it was often possible to generate some potential explanation for the behaviour.

While the regression results are indeed disappointing, they do provide insight into the potential difficulty a user may have in determining the factors that lead to both buildups and drawdowns of deferred income taxes and thus the impact on after tax cash flows. The results do provide a strong indication that accounting losses do have an important impact on drawdowns, however, it was not possible to consist-

ently show a relationship between low levels of fixed asset growth and drawdowns.

When considering buildups, the results partially support the argument that these are a positive function of growth in fixed assets. In most runs there was an indication of fat-tails in the distribution of the residuals suggesting that other factors were influencing the behaviour of deferred income expense.

The researcher was initially surprised by the difficulty encountered in the regression analysis. As the recording of deferred income taxes is simply an application of various mechanistic rules it was suspected that by creating proxies for the relevant variables, the researcher would be able to establish the factors affecting drawdowns and buildups. Apparently, the researcher's hopes were wishful thinking and the results would indicate that significant difficulty would be encountered in trying to predict the future economic consequences of deferred income taxes on a company's cash flows. All of this suggests that there are potentially important data that are not disclosed in companies' annual report.

Drawdowns Classified by Income Sign and Fixed Asset  
Additions

The previous section indicated some concern in using multi-variate techniques to investigate an association between both income and fixed asset growth with the occurrence of a drawdown. The purpose of this section is to further consider the combined effect of these two factors and determine potential explanations for the difficulty encountered.

Tables 4-19(a) and 4-19(b) show buildups and drawdowns classified by the sign of INCPERAS and by GROW and PRIGROW above or below one. In addition, the mean of DTEPERAS is presented for each segment. When buildups are considered, it would be anticipated that almost all of the buildups would have positive income, and the observations would tend to cluster in the segments where GROW is greater than one. This was indeed the case. The existence of some observations in the segments where GROW is less than one would be expected because of adequate growth in prior years to permit the claiming of CCA greater than depreciation. The eight observations (4.3% of buildups) in the segments hav-

TABLE 4-19(a)

ANALYSIS OF DEFERRED TAX BUILDUPS BASED ON CURRENT  
AND PRIOR GROWTH IN FIXED ASSETS AND SIGN  
OF ADJUSTED INCOME

	GROW < 1		GROW > 1		GROW < 1		GROW > 1	
	PRIGROW < 1	PRIGROW > 1	PRIGROW < 1	PRIGROW > 1	PRIGROW < 1	PRIGROW > 1	PRIGROW < 1	PRIGROW > 1
POSITIVE ADJUSTED INCOME	1980	2	1980	2	1980	6	1980	45
	1981	2	1980	4	1981	7	1981	39
	1982	0 (2)	1982	9 (19)	1982	3 (1)	1982	21 (11)
	1983	6 (11)	1983	4 (19)	1983	8 (3)	1983	22 (7)
		10		19		24		127
	MDEF	0.006	MDEF	0.008	MDEF	0.011	MDEF	0.012
	MGRO	0.621	MGRO	0.598	MGRO	2.300	MGRO	2.796
	MINC	0.055	MINC	0.094	MINC	0.093	MINC	0.100
	MPRI	0.430	MPRI	1.986	MPRI	0.509	MPRI	3.120
NEGATIVE ADJUSTED INCOME	1980	1	1980	0	1980	0	1980	2
	1981	1	1981	0	1981	0	1981	2
	1982	0 (0)	1982	1 (1)	1982	0 (0)	1982	0 (0)
	1983	0 (1)	1983	0 (0)	1983	1 (0)	1983	0 (0)
		2		1		1		4
	MDEF	0.005	MDEF	0.001	MDEF	0.008	MDEF	0.006
	MGRO	0.625	MGRO	0.197	MGRO	1.047	MGRO	2.017
	MINC	-0.018	MINC	-0.010	MINC	-0.063	MINC	-0.013
	MPRI	-0.892	MPRI	3.660	MPRI	0.893	MPRI	2.277

MDEF = Mean of deferred income tax expense divided by total assets  
 MGRO = Mean of fixed asset additions divided by depreciation expense  
 MINC = Mean of adjusted income divided by total assets  
 MPRI = Mean of prior year's fixed asset additions divided by  
 depreciation expense.

Figures in brackets represent classification when the half year rule  
is considered.

ing negative adjusted income are considered unusual as it  
would have been anticipated that a company would have had a

1. The existence of an extraordinary item having a deferred tax impact that is not disclosed.
2. The existence of an undisclosed current deferred tax debit or credit on the balance sheet when the company discloses deferred tax expense on the income statement or in their notes.
3. The acquisition of a subsidiary for which deferred income taxes exist and which are included in the purchase equation, but are not disclosed in the annual report.
4. The deferred tax impact of an accounting change treated retroactively was not disclosed.
5. An inability of the researcher to adequately interpret the company's disclosure.
6. Inadequate disclosure of the economic events by the companies considered.

For 228 (71%) observations a reconciliation could be successfully completed; however, 19 of these were reconciled due to a opening and closing balance of zero for both cur-



It would be anticipated that all drawdowns would be in six segments: the four with negative income and the two with positive income but with GROW less than one. Surprisingly, 28 of the 100 drawdowns occurring in the years 1980-83 are in the two segments with positive adjusted income and a growth rate greater than one. When Table 4-19(b) is adjusted for the impact of the half-year rule there are still 16 drawdowns in the two segments with positive adjusted income and a growth rate greater than one. At the very least, these 16 observations are unusual and could not be explained by means of the data in the annual report. Possible explanations for this unusual result are omissions in the calculation of adjusted income, drawdowns caused by factors other than CCA/depreciation timing differences, the impact of the half-year rule<sup>(60)</sup> or drawdowns occurring because of large losses in one or more subsidiaries.

An example of this was provided by Canadian Pacific Limited in 1983. Table 4-20 is a reproduction of CP's deferred in-

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60 If the data are revised to incorporate the half-year rule then 16 of the 100 drawdowns are located in the two segments with positive adjusted income and HALFGROW greater than one. This adjustment is indicated on Table 4-19(b).

come tax disclosure for 1982 and 1983. It clearly shows how a drawdown relating to a loss in one segment of a company can have a significant impact on the consolidated deferred tax expense. Although unexpected, these drawdowns are very interesting for it is not possible, in the absence of adequate note disclosure such as that provided by Canadian Pacific, to determine the reason for the drawdown.

When the means of DTEPERAS are considered by segment the data are as expected. Buildups with GROW greater than one have a higher mean than any other segment, and the mean of buildups with negative INCPERAS tend to be lowest. In the case of drawdowns, those that have negative INCPERAS consistently have a higher mean drawdown rate than those with positive INCPERAS. An interesting aspect of the data is how much larger, in absolute terms, DTEPERAS is for drawdowns with negative INCPERAS than buildups of any type. Despite the fact that companies suffering losses may be contracting their total assets relative to profitable companies, this would indicate the potential smoothing of income that is available when a company has losses.

Table 4-20

Deferred Income Tax Disclosure of  
Canadian Pacific  
(in 000 \$)

The deferred income tax provision arose as follows:

	1983	1982
Capital cost allowances	\$ (8,542)	\$ 125,925
Exploration and development allowances	17,251	51,813
Loss carry forwards recognized*	(130,397)	(150,733)
Other	<u>6,187</u>	<u>(736)</u>
	<u>\$ (115,501)</u>	<u>\$ 26,269</u>

\* In addition \$24,935,000 of loss carry forwards were not recognized in 1983.

Conclusion

In conclusion, Tables 4-19(a) and 4-19(b) and the results of the regression runs indicate that the researcher has identified the primary variables influencing the behaviour of deferred income tax expense; however, for many observations there is no clear indication for the behaviour of deferred income tax expense. This is particularly true in the case of drawdowns but there is also some indication of ex-

planation problems in the area of buildups. The difficulty in explaining several of the observations by simple classification would indicate why the regression results were disappointing. It also indicates a potential need for disclosure as to the reasons for a drawdown. As was noted in Chapter One the reason for a drawdown may provide information on the impact of income taxes on future cash flows. In at least 24 observations (12.8% of the observations having income statement entries for deferred income taxes) it does not appear that a financial statement user can easily make this assessment.

#### Drawdowns in Years Prior to 1980

As mentioned near the beginning of this chapter, the number of drawdowns in the years 1975 through 1977 were somewhat higher than the surrounding years. As the primary emphasis of the research was on the years 1980 through 1983, detailed adjustments for permanent differences were not made to the years 1973 through 1979 in order to arrive at an estimate of accounting income. Therefore, it is not possible

to consider this earlier period in the same detail as was done for drawdowns occurring in the early 1980s. Despite this, it is still possible to consider whether losses could have been a significant factor in the drawdowns occurring prior to 1980.

Table 4-21 separates the 105 drawdowns observed in the period 1973 to 1979 into four quadrants based on whether financial statement income was positive or negative and whether growth in fixed asset additions (GROW) was greater or less than one. Thirty-one (29.5%) of the drawdowns occurred when financial statement income was negative, suggesting that losses were indeed an important factor in drawdowns prior to 1980. Thirty-eight (36.2%) of the drawdowns occurred when financial statement income was positive and growth in fixed asset additions was less than one. This suggests that inadequate fixed asset additions may have been a factor in a large number of drawdowns. However, as has been mentioned and will be discussed in more detail in the following chapter, it is quite possible that many of these drawdowns related to losses in one or more subsidiaries. The quadrant with growth in fixed asset additions greater than one and positive financial statement income contains 36 (34.3%) of the drawdowns for the years

TABLE 4-21

Deferred Income Tax Drawdowns Prior to 1980\*  
Classified by Income Sign and Fixed Asset Growth

	GROW < 1		GROW > 1	
POSITIVE FINANCIAL STATEMENT INCOME	1973	2	1973	4
	1974	5	1974	2
	1975	6	1975	8
	1976	8	1976	5
	1977	5	1977	10
	1978	6	1978	2
	1979	6	1979	5
NEGATIVE FINANCIAL STATEMENT INCOME	1973	0	1973	2
	1974	2	1974	1
	1975	1	1975	4
	1976	5	1976	2
	1977	4	1977	1
	1978	4	1978	2
	1979	2	1979	1

\*As the data contained in this exhibit is prior to to 1980, the income figures were not adjusted for for the effect of permanent differences before determining whether income was positive or negative.

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1973 through 1979. This large number of drawdowns in a quadrant where none would be expected is not inconsistent with the data presented in Table 4-19(b), and would suggest that losses in subsidiaries is a possibility for explaining these drawdowns.

In conclusion, although drawdowns prior to the recession were less frequent than during the recessionary period, Table 4-21 does not suggest any marked differences in those factors that lead to drawdowns. However, what it does suggest is that Canadian studies that examined periods prior to 1980 and did not separate drawdowns based on the sign of income may have over estimated the immediate cash flow implications of a deferred income tax drawdown.

#### OTHER ISSUES RAISED IN THE LITERATURE REVIEW

##### Ability to Reconcile Deferred Income Taxes

An additional question arises from the work of Schwartz (1983) and Lanfranconi and Robertson (1984) relating to the ability to reconcile the beginning and ending accumulated deferred income tax balances. (61)

In Canada, the following reasons may account for an inability to reconcile these figures between years:

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61 It was this prior knowledge that led the researcher to use the income statement approach rather than the change in the balance sheet approach to determine the deferred tax figure used in the analysis.

1. The existence of an extraordinary item having a deferred tax impact that is not disclosed.
2. The existence of an undisclosed current deferred tax debit or credit on the balance sheet when the company discloses deferred tax expense on the income statement or in their notes.
3. The acquisition of a subsidiary for which deferred income taxes exist and which are included in the purchase equation, but are not disclosed in the annual report.
4. The deferred tax impact of an accounting change treated retroactively was not disclosed.
5. An inability of the researcher to adequately interpret the company's disclosure.
6. Inadequate disclosure of the economic events by the companies considered.

For 228 (71%) observations a reconciliation could be successfully completed; however, 19 of these were reconciled due to a opening and closing balance of zero for both cur-



rent and long term deferred income tax. A total of 92 (29%) observations could not be reconciled. In one case the data was gathered from the subsequent year's annual report, thus eliminating the possibility to complete the reconciliation. In another, the reconciliation could not be performed as the company did not disclose a figure for deferred tax expense anywhere in the financial statements.

The remaining 90 observations were spread over 39 companies, indicating a tendency for lack of reconciliation to be bunched by company. In fact, for 10 companies the reconciliation could not be successfully completed in any of the four years investigated. Twenty-two of the 90 observations did not disclose an extraordinary item, takeover or an accounting change, leaving the author puzzled as to why deferred taxes could not be reconciled. Admittedly the number is small relative to the total number of observations considered but it does indicate a lack of disclosure in the area of deferred tax accounting and may indicate a deeper problem of potential user misunderstanding of the cause and potential impact of deferred income taxes.

In the U.S., Schwartz found that using the deferred tax figure from statement of changes in financial position, 45%

of his sample could not be reconciled. This suggests that in Canada lack of articulation in the area of deferred income taxes is less prevalent than in the U.S. It is not clear what the reason for the greater degree of articulation in Canada is because Schwartz also used companies' annual reports to generate his data. However, it is not clear from his paper whether he took advantage of any data that may have been contained in the notes.

#### Deferred Taxes on Acquisition of a Subsidiary

Another question of interest relates to a difference in accounting between U.S. and Canada with regards to the acquisition of a subsidiary. In the U.S. it is not acceptable practice to include the accumulated deferred income tax of the subsidiary at date of acquisition in the consolidated financial statements. In Canada, however, it is acceptable to carry over these deferred taxes.

To investigate the magnitude of this difference, the data collection sheet was designed to note any takeover as well

TABLE 4-22

INVESTIGATION OF DEFERRED INCOME TAXES ARISING  
FROM TAKEOVERS

COMPANY-YEARS DISCLOSING A TAKEOVER	52
TAKEOVER RELATED TO PURCHASE OF ASSETS	7
PURCHASE PRICE WAS VERY SMALL	1
SUBSIDIARY SOLD BEFORE YEAR-END	<u>1</u>
TAKEOVERS INVESTIGATED	<u>43</u>
OBSERVATIONS DISCLOSING DEFERRED INCOME TAXES ON TAKEOVER	8
OBSERVATIONS NOT DISCLOSING DEFERRED INCOME TAXES ON TAKEOVER BUT COULD RECONCILE OPENING AND CLOSING DEFERRED TAXES	11
OBSERVATIONS NOT DISCLOSING DEFERRED INCOME TAXES ON TAKEOVER FOR WHICH OPENING AND CLOSING DEFERRED INCOME TAXES COULD NOT BE RECONCILED	<u>24</u>
	<u>43</u>

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as deferred taxes acquired. A takeover was defined as the first time a subsidiary was consolidated. The results of the investigation were very disappointing (Table 4-22). Over the four year period 1980-83, 52 observations had a takeover indicated in their financial statements. From this figure, seven observations indicating that the takeover re-

lated to the purchase of assets were subtracted. In addition, one observation was eliminated as the total purchase price was only \$500, and one observation was eliminated because the subsidiary was sold before the year-end. Therefore, the 43 remaining observations appear to relate to the purchase of shares and are of some significance to the acquiring company.

Of the 43 remaining observations, only eight disclosed any deferred income taxes acquired on acquisition (Table 4-23). For eleven of the companies that did not disclose any deferred income taxes arising on acquisition it was possible to reconcile opening and closing accumulated deferred income taxes, implying that either there were no deferred income taxes in the newly acquired subsidiary or that they were not picked up on the initial consolidation. For the 24 remaining observations it was not possible to determine whether deferred income taxes were directly considered in the consolidation purchase equation as they did not disclose any data on deferred income taxes acquired nor could a reconciliation be successfully performed.

Based on the sparseness of the data it is extremely difficult to draw any conclusions. However, it appears that in-

TABLE 4-23  
 COMPANIES DISCLOSING DEFERRED TAXES ON ACQUISITION OF SUBSIDIARY

COMPANY	YEAR OF ACQUISITION	DEFERRED TAX ACQUIRED (000'S)	% OF PURCHASE PRICE	% OF ENDING CONSOLIDATED DEFERRED TAX
ALCONGUIN MERCANTILE	1982	\$ 244	1.73	16.67
CANADIAN HYDROCARBONS	1983	1,143	58.80	7.09
HARRIS STEEL	1981	75	3.62	3.19*
HERITAGE GROUP	1981	281	1.89	4.86
INLAND NATURAL GAS	1982	-902	-1.92	-8.24
TELE-METROPOLE	1982	39	1.95	0.85
VS SERVICES	1982	6	0.20	0.35
VULCAN	1981	2,857	16.56	63.87
AVERAGE		\$ 467	10.35	11.08

\* Percent of long term taxes only.

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consistency exists in practice with regards to recording deferred income taxes in the year of acquisition.

## SUMMARY AND CONCLUSIONS

This conclusion is designed to outline what has been covered in this chapter prior to considering the data on loss carryforwards in the notes. A detailed summary, along with implications will be provided in the final chapter.

This chapter began with a detailed explanation of how the 80 sample companies were selected and the reasons for this selection procedure. This was followed by a definition of the variables used in the analysis and then a detailed description of the analysis.

The data presented to address research questions one through four provided strong evidence that the recessionary period encountered in the early 1980's led to the observed unusual behaviour of deferred income taxes that had not ever been exhibited previously. Drawdowns were more numerous in 1982 and 1983 than in any prior year and their dollar value also tended to be higher in these two years. On the balance sheet, accumulated deferred income taxes as a percentage of assets and owners' equity experienced a sta-

tistically significant decline in 1982 and this decline continued in 1983.

Research question number five investigated the association of drawdowns and size of company. The results indicated that, at least for public companies, there was no significant association between the occurrence of drawdowns and size of the company. However, there appears to be a greater tendency for smaller companies to have no income statement entry for deferred income taxes. This is related to a greater likelihood to use depreciation policies similar to the CCA rules and the prior elimination of deferred income taxes due to losses.

Research question six, seven and eight considered the impact of fixed asset additions on deferred income taxes. It was shown that fixed asset additions did decline in 1982 and that there was a significant positive association between the growth in net fixed asset additions and deferred tax expense divided by total assets.

Research question nine considered the association between accounting losses and the occurrence of drawdowns. After adjusting statement income for permanent differences a sig-

nificant association was found between the occurrence of an accounting loss and a drawdown. When all drawdowns were considered it was found that there was a strong tendency for the larger drawdowns, as measured by deferred tax expense divided by total assets, to be associated with observations having negative accounting income.

Multi-variate analysis was attempted using measures of net fixed asset growth and adjusted income as the independent variables to explain the direction and relative magnitude of deferred income tax expense. Largely due to a number of unusual observations, regression analysis was found wanting, so simple classification tables were prepared to analyze both buildups and drawdowns. The results indicate that in general buildups only occur when accounting income is positive and the size of the buildup, as measured by deferred income tax divided by total assets, is larger when growth in fixed assets is greater than one. When drawdowns are considered, the results indicate that the relative size of drawdowns is much larger when negative adjusted income is present compared to positive adjusted income. However, 28 of the 100 drawdowns occurred when both current and prior years' growth in fixed assets were greater than one and positive income was present. This suggests a potential



lack of explanatory data in the financial statements and supports the need for gaining access to data internal to the companies to explain the reason for the drawdowns.

Reconciliations between beginning and end of the year accumulated deferred income tax were attempted for all observations over the four year period 1980-83. The lack of articulation in the sample was found to be less severe than found by Schwartz using U.S. data, however, there was a tendency for lack of reconciliation to bunch by company, suggesting that some companies are consistently poor disclosers in this area.

The final issue investigated was the recording of deferred income taxes on the acquisition of a subsidiary. This issue was examined because U.S. accounting standards do not permit the recording of accumulated deferred income taxes existing at the time of acquisition of a subsidiary, while the CICA Handbook permits companies to either record the subsidiary's accumulated deferred income tax or not record it, at their option. The data were far from conclusive but it does appear that some companies recorded deferred income taxes at the time of acquiring a subsidiary and others did

not. It was not possible to precisely determine the frequency of each accounting method.

In the next chapter the results of interviews with company management will be discussed. These interviews were conducted to increase our understanding of the reasons for the deferred income tax drawdowns.

## CHAPTER FIVE

### RESULTS OF DIRECT CONTACT WITH SELECTED SAMPLE COMPANIES

#### INTRODUCTION

This chapter reports the results of the internal company contacts conducted to provide further information relating to some of the observed income statement drawdowns. This research step was necessary because companies generally do not provide sufficient data in their financial statements to determine the reason for a drawdown from an analysis of the financial statements.

The objective of this chapter is not to determine the reason for every drawdown during the 1980 through 1983 period. Such an objective was considered to be too costly and time consuming for this thesis. Rather, the objective is to pro-

vide support for one of the conclusions of Chapter Four which indicated that the occurrence of negative adjusted income typically leads to a drawdown but when adjusted income is positive the lack of growth in fixed assets does not necessarily explain the reason for a drawdown. The suspected explanation for this is the existence of multiple legal entities that individually determine deferred income taxes and therefore, in some cases, may be having a drawdown due to losses in one legal entity, while the consolidated entity appears profitable. In addition, information on why the drawdowns occurred may provide insights on why regression analysis using aggregated disclosures was not a very successful analytical technique in explaining the causes of drawdowns.

#### SELECTION OF COMPANIES FOR CONTACT

As the topic of interest is the reason for drawdowns, a list of all companies having a drawdown during the period 1980 through 1983 was prepared. This list incorporates 55 sample companies having 100 drawdowns and is provided in-

Appendix H. Table 5-1 provides a reconciliation between the number of companies having drawdowns and those companies that were eventually contacted.

Those observations in which the notes to the financial statements indicated the reason for the deferred income tax drawdown were eliminated. Three of the companies were very specific in stating the reason for their drawdowns and two companies made statements in their notes that eliminated any reasonable doubt as to the reasons for the drawdowns. This resulted in the exclusion of five companies having a total of six drawdowns. All six of these drawdowns resulted from losses. These companies will be added to the analysis of the reason for drawdowns discussed later in the chapter.

Two steps were taken to gain the greatest amount of information in the most efficient manner for each internal investigation.

1. Elimination of any company that had only one drawdown during the four year period unless the drawdown divided by total assets was greater than the mean of this figure for all companies. This process resulted in the

TABLE 5-1

Reconciliation Between Companies Having Drawdowns  
and Those Companies Actually Contacted

	Number of Companies	Number of Drawdowns
Sample companies having drawdowns	55	100
Less		
Companies disclosing reason for drawdown	5	6
Companies having only one relatively small drawdown	13	13
Companies with head offices outside Southern Ontario	17	39
Company in receivership	<u>1</u>	<u>2</u>
Companies contacted	<u>19</u>	<u>40</u>

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selection of larger drawdowns and eliminated a further  
13 of the 55 companies and 13 of the 100 drawdowns.

2. Eliminate all companies with head offices outside of  
Southern Ontario. This cost saving procedure resulted  
in the exclusion of 17 companies and 39 drawdowns.

In addition, one company with two drawdowns, Robinson Little & Co. Ltd. was eliminated as it went into receivership before this analysis was conducted.

The eventual result of this selection procedure was to provide a sample of 19 companies having 40 drawdowns. These 19 companies were initially contacted using three different approaches. Three of the companies were contacted initially by telephone, two companies were initially contacted by faculty members at Western's Business School, and the remaining 14 companies were initially contact by a letter (Appendix I) from the researcher.

In total, 13 of the 19 companies contacted were willing to provide explanations for their companies' drawdown(s). These 13 companies had a total of 28 drawdowns during the period 1980 through 1983. Of the six companies not willing to be interviewed three indicated a desire to cooperate but were simply too busy to go back through the company's records to determine the cause of the drawdowns. The three other companies simply did not return my phone calls. In these cases after the second call I stopped pursuing the interview.

## RESULTS OF INTERVIEWS

### Reasons for the Drawdowns

The primary question asked of all respondents was the reason for their company's drawdown for each year during the period investigated. The results will be discussed by first considering what one would have initially anticipated and then followed by reconsidering the data based on the respondents comments.

Chapter Four established that two factors tended to be associated with drawdowns: inadequate fixed asset growth and negative adjusted income. Table 5-2 creates a two-by-two matrix using these two factors for the 13 companies that were interviewed as well as those companies which provided the reason for their drawdown in their financial statements. The net result is that for 34 (34%) of the 100 drawdowns occurring in the sample companies from 1980 through 1983, the researcher has some explanation for the reason for the drawdown.

Based on the results of Chapter Four, it would be expected that drawdowns in quadrant 1 and 3 of Table 5-2 would be



TABLE 5-2

Initial Classification of Drawdowns  
Chosen for Further Investigation

		ADJUSTED INCOME	
		NEGATIVE	POSITIVE
GROWTH* RATE	LESS THAN ONE	Quadrant 1	Quadrant 2
		1980 1	1980 0
		1981 0	1981 0
		1982 6	1982 2
		1983 2	1983 2
	GREATER THAN ONE	Quadrant 3	Quadrant 4
		1980 0	1980 2
		1981 3	1981 3
1982 6		1982 2	
	1983 3	1983 2	

\* Growth rate is before adjustment for the half-rate rule.

due to losses, while those in quadrant 2 would be the result of inadequate fixed asset growth - the traditional reversal situation. The drawdowns in quadrant 4 are of interest because neither of two primary factors associated with drawdowns are present.

The initial prediction is partially correct when one considers the data on the actual reason for each drawdown (Table 5-3). All the drawdowns in quadrant one and in quadrant three were related to losses. When quadrants two and four are considered the results are more interesting because they may not have been anticipated. As was stated, the drawdowns in quadrant two would be expected to relate to slow fixed asset growth. However, all four drawdowns in this quadrant were due to losses, a result that surprised the researcher.

TABLE 5-3

## Analysis of Reason for Drawdowns

	<u>QUADRANT</u>				Total
	1	2	3	4	
Primary reason					
Losses	9	4	12	5	30
CCA/depreciation timing difference	-	-	-	3*	3
Other timing difference	-	-	-	<u>1</u>	<u>1</u>
Total	<u>9</u>	<u>4</u>	<u>12</u>	<u>9</u>	<u>34</u>

\* Two drawdowns, for which the respondents were not sure of the reasons, were classified as resulting from CCA/depreciation timing differences based on respondents' guesses.

As stated, it is not easy to predict the reasons for drawdowns in quadrant four, and the results are consistent with this. Of the nine drawdowns in this quadrant, five are clearly attributable to losses, one clearly attributable to CCA/depreciation timing differences and one to another type of timing difference. For the two other drawdowns in quadrant four (one in 1980 and one in 1981) the respondents indicated they were not sure as to the reason for the drawdown because they were not employed by the company at the time. However, in both cases the respondents offered a guess that it was due to CCA/depreciation timing differences.

The primary observations from this analysis is that although involuntary drawdowns do in fact occur they are more infrequent than would be expected from considering companies financial statements. Even a somewhat sophisticated user who made adjustments for permanent differences would likely overestimate the number of involuntary drawdowns that have an expected concurrent cash impact.

### Other Questions

After establishing the reason for the drawdowns, the respondents were asked three other questions. These questions will be considered one at a time.

#### Did the company consider setting up an asset for virtual certainty?

If a company has a loss carryforward for tax purposes and it meets the conditions of virtual certainty, it is possible to set up an asset for the benefit of a loss carryforward. Of the thirteen companies interviewed, eleven companies were in the position to give consideration to this accounting method. The other two companies did not have an actual loss carryforward. The responses are summarized in Table 5-4.

For these eleven companies, all respondents indicated that virtual certainty was considered, although in some cases very briefly. Two respondents indicated that they believed their company could have met the test of virtual certainty but decided to net the loss carryforward against the deferred taxes. Two respondents indicated that the auditors

TABLE 5-4

## Consideration of Virtual Certainty Provisions

Companies interviewed	13
LESS	
Company whose drawdown related to provision for loss in sub	1
Company whose loss was all used up by carryback	<u>1</u>
Companies in position to consider asset for virtual certainty	11
LESS	
Companies who choose to net against deferred income taxes	2
Companies indicating that their auditor said "no"	2
Other reasons	<u>4</u>
Companies indicating they set up asset due to being virtually certain of benefit	<u><u>3</u></u>

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said no to setting up the asset. Four companies provided other explanations for not setting up the asset such as, conservative management, very large losses and the company being on the edge of bankruptcy.

Three of the company respondents indicated that they did set up an asset for virtual certainty: one by means of net-

ting against taxes payable, one as a deferred tax debit, and for the third company the method was not provided.

One respondent indicated that the company wanted to set up an asset for virtual certainty in 1985 after the fortunes of the company had improved. However, the company was unable to do this due to provisions of the Handbook which permit the recording of the asset only if the company is virtually certain of realizing the benefit in the year of the loss.

The conclusion from this analysis is that the virtual certainty provisions are used more frequently than is evident from reading the financial statements. In the case of the three companies indicating they had set up an asset due to virtual certainty it was not disclosed in their financial statements.

Would their have been a buildup if not for the loss?

This question was asked to deal with an anticipated question that if it were not for the losses the company would have had a drawdown anyway due to a decline in fixed asset additions. While one valid response would be that if it

were not for the losses the company would have bought additional assets, it was believed useful to investigate the potential frequency of reversals of CCA/depreciation timing differences under an extreme condition.

It is difficult to precisely determine the meaning of the response received because losses in prior years may well influence the amount of the CCA claimed in those prior years and therefore the amount that can be claimed in the year under consideration. The researcher did not ask the respondents to go back over prior years to recompute the amount of CCA that would have been claimed had no losses been incurred in the past. The results from this question are provided in Table 5-5.

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TABLE 5-5

Would there have been a buildup if  
not for the loss?

Not sure	5
Buildup	16
Very close to zero	2
Small drawdown	<u>1</u>
	<u>24</u>

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When the drawdowns of the five companies disclosing the reason for the drawdowns in their financial statements are removed, there are 24 drawdowns due to losses. In five of the 24 drawdowns, the respondents were not sure as to the deferred tax impact if the loss was removed. For 16 drawdowns, the respondents believed there would have been a buildup if the loss did not occur, but it is not known how large these buildups would have been. In two of the drawdowns the respondents indicated it would have been very close. In only one drawdown due to losses did a respondent indicate that there would have been a small drawdown even if the loss was not considered.

The conclusion from this question is that even if we ignore the impact of losses, the recessionary period surrounding 1982 was either not long enough, not severe enough or both, to lead to any significant concurrent reversals in timing differences that could result in a net cash outflow.

Does deferred income tax lead to artificial smoothing?

The purpose of this question was to elicit the respondents opinion about deferred income taxes. A more direct question may have been superior but this question was used for three reasons. First, at the conclusion of the first inter-



view a respondent asked why I was doing the research. He was quite complacent until I mentioned that some people believe that deferred taxes result in artificial smoothing. This point resulted in a very interesting discussion of the impact of Class 29 assets on the company. Second, the question seems to require more thought than "do you agree with current Handbook pronouncements on deferred income tax accounting." Third, I was able to rephrase the question to ask whether they basically agreed with current accounting pronouncements if they requested me to. With hindsight I would not use such a question on a mailed questionnaire but I am not disappointed with it for a telephone questionnaire.

It is perhaps not surprising that 11 of 13 managers interviewed believed that deferred taxes did not result in artificial smoothing and generally approved of current Handbook recommendations on deferred taxes. One respondent suggested that deferred taxes is really equity and another respondent suggested that deferred tax accounting simply clouds the issue of a company's tax status.

Of the 11 respondents who generally agreed with deferred tax accounting, four specifically mentioned that not re-

ording deferred income taxes on Class 29 assets would result in artificial swings in income. One respondent indicated that it was possible to shift a material amount of expenses for financial accounting between years with no impact on the tax return. Without the smoothing characteristics of deferred tax accounting these shifts in expenses would be much more pronounced.

Two of the respondents agreeing with deferred income tax accounting indicated that long term timing differences of a recurring nature may not require tax allocation.

In summary, it appears that there is qualified support for comprehensive tax allocation on the part of companies. This could be due to a desire to actually smooth income, or the recognition of the potential of CCA on Class 29 assets to reverse in a very short period of time. While the researcher did not ask every respondent about the importance of Class 29 assets in their company, ten companies specifically mentioned that it was a large part of their deferred taxes. This is not surprising given that the companies are involved in manufacturing and processing activities which give rise to Class 29 assets. However, reference to Table 5-3 indicates that at the most only three of the 34

drawdowns investigated in this chapter were the result of CCA/depreciation timing differences.

### CONCLUSION

This chapter has reported the results of telephone interviews with corporate management in the accounting area. The results indicate that drawdowns due to losses were frequent in the four year period investigated. In addition, the results indicated that drawdowns due to losses can occur in a company whose consolidated adjusted income is positive. This is a result of losses in one or more legal entities making up the consolidated entity. An important point here is that companies are not currently required to disclose the reasons for the drawdown so it is often only possible to determine the reason by contacting companies directly. These results support the conclusions of Chapter Four and explain why growth in fixed assets does not do very well in explaining drawdowns. The fact that some of the drawdowns due to losses are not observable from reading the financial statements also explains why regression analysis is not a

useful technique to explain the factors that lead to drawdowns and buildups.

The respondents provided qualified support for comprehensive tax allocation despite the fact that few of the drawdowns were due to reversals in timing differences, and in those cases where the drawdowns were due to losses the companies would have had buildups otherwise. This position by corporate management seemed to focus primarily on the existence of Class 29 assets.

## CHAPTER SIX

### LOSS CARRYFORWARDS: NOTE DISCLOSURE, ASSOCIATION WITH ACCUMULATED DEFERRED INCOME TAXES AND SUBSEQUENT REALIZATION

#### INTRODUCTION

This chapter focuses on note disclosure of loss carryforwards provided by sample companies and has three specific objectives:

1. to examine, for the sample companies, the nature and extent of financial statement note disclosure relating to loss carryforwards.

2. to determine if the non-existence of accumulated deferred income taxes on a sample company's balance sheet coincides with the disclosure of loss carryforwards, and
3. to determine the frequency of extraordinary items indicating the realization of previously unrecognized loss carryforwards.

Before proceeding to the analysis of these three areas the relevance, to this thesis, of an investigation of loss carryforwards will be considered, followed by a brief review of the current accounting standards and practices for loss carryforwards and the potential bias in the time period investigated.

#### RELEVANCE OF ANALYSIS OF LOSS CARRYFORWARDS

The investigation of loss carryforwards is important to this research because, for financial accounting purposes, tax losses can be at least partially recognized by drawing

down accumulated deferred income taxes. Also, from a cash flow point of view, a loss carryforward can signal a reduction in a company's future tax payments to the government and therefore, would be of interest to a user concerned with the amount, timing and uncertainty of future cash flows.

Based on the discussion in Chapter Two, it would be logical to include descriptive data on the use of virtual certainty as it is closely connected to the topic of this chapter. However, only one company in the sample specifically mentioned that they had set up an asset for loss carryforwards because they were virtually certain of its realization.<sup>(62)</sup> While Chapter Five indicated that other companies have done

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62 The company was Waferboard Corporation Limited. In 1980 and 1981 the company set up an asset totalling \$1,853,386 for potential future tax benefits because "management is of the opinion that there is virtual certainty of utilizing these losses in the carry forward years." (Annual Report 1981). In 1982 the benefit was realized when a part of the company's plant burned down and they realized a gain of the insurance proceeds. As the fire occurred almost five months after the year-end, the insurance proceeds could not have been the basis for virtual certainty.

this, it was not possible to establish this from the data disclosed in the financial statements. (63)

### REVIEW OF THE ISSUES

Accounting for loss carryforwards has already been discussed in previous chapters, however, a brief review may be beneficial to the reader. When a company suffers a loss for tax purposes that loss must be carried back one year and if an unclaimed portion of loss remains it can be carried forward for a period of five years. (64) As the realization

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63 During the initial stages of data collection the researcher thought that the use of the term income tax recoverable on the balance sheet may signify virtual certainty. As data collection progressed the researcher began to doubt this initial assumption. In the course of telephone interviews described in Chapter Five this issue was raised with two companies that had disclosed a balance sheet account labelled income tax recoverable and in both cases it represented the recovery of taxes previously paid.

64 The revised law (effective in 1983 for public companies) provides for a three year carryback and a seven year carryforward. Also, there is no longer a require-



of the carryforward is uncertain, the Handbook has a series of rules to guide the accounting for the loss carryforward. If the company meets the conditions of "virtual certainty" it may set up an asset to reflect the future benefit of the loss carryforward. If it chooses not to, or does not meet the criteria for virtual certainty, then the company would turn to paragraph 3470.48 of the Handbook.

In situations where conditions relating to virtual certainty of realization are not otherwise present, the unrecorded tax benefit of the loss carryforward should be recognized to the extent of any reductions in accumulated deferred income tax credits available in the carryforward period by claiming less capital cost allowances than depreciation recorded or making other adjustments of a similar effect. The amount of the reductions recognized in the period in which the loss occurs should be reflected in the income statement before "income before extraordinary items" or, if it relates to an extraordinary item, as a deduction therefrom. It should be reflected in the balance sheet as a reduction of accumulated deferred income tax credits. (emphasis added)

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ment that the loss be carried back before it can be carried forward.

This paragraph implies that the company should(65) draw down accumulated deferred income taxes by the lessor of the following three items:

1. The amount of loss carryforward multiplied by the average rate of accumulation of the deferred income taxes.
2. the amount of accumulated deferred income taxes, and
3. the anticipated reversals in the carryforward period multiplied by the average rate of accumulation of the deferred income taxes. (see Appendix B for an illustration of the accounting procedures.)

If, after completing these steps, the company still has any unrecognized loss carryforward remaining it should(66) dis-

65 The word "should" is taken from the CICA Handbook paragraph 3470.48. As noted in Chapter Two, there is reason to believe that companies are not interpreting the word should as a specific requirement. Therefore, it is possible that some companies are choosing a more conservative approach and not drawing down deferred income taxes.

66 Again, the word "should" is based on Handbook terminology.

close this fact in the notes to the financial statements together with the date of expiry of the unrecognized loss carryforward(s). Therefore, there is no requirement for disclosure of a tax loss carryforward whose benefit has been fully reflected in the accounts. If, and when, an unrecognized loss carryforward is realized the CICA Handbook requires that it be shown as an extraordinary item on the income statement.

"The realization or partial realization in a subsequent period of the tax benefit resulting from a loss carryforward, which was not recognized in the period in which the loss occurred, would be reflected in the income statements for the periods of realization as an extraordinary item." (paragraph 3470.55)

The terms unrealized, realized, unrecognized and recognized will be used extensively in this chapter. Unrealized refers to the available loss carryforward for income tax purposes that exists at any point in time. It is this amount that has the potential of reducing future cash flows to government. The unrealized loss carryforward can be realized by generating taxable income in the carryforward period. The term unrecognized refers to the loss carryforward that exists for accounting purposes. It may differ from the unrealized figure existing for tax purposes if the company has recognized a portion of the benefit associated with the

loss carryforward by drawing down accumulated deferred income taxes or by recording an asset if the company meets the conditions of virtual certainty. It is only the unrecognized portion of a loss carryforward that may eventually have an impact on the income statement in subsequent years, and only the unrealized portion that will have an impact on subsequent cash flows.

In summary, if a financial statement user was interested only in future cash flows they would want to know the unrealized loss carryforward, that is the loss carryforward for income tax purposes. If, however, the user was only interested in future income statement impacts, they would wish to know the unrecognized loss carryforward, that is the accounting loss carryforward.

#### CONSIDERATION OF THE TIME PERIOD OF INVESTIGATION

The period to be investigated is the four year period from 1980 through 1983. The analysis was restricted to this recent period as the data collection plan entailed the review

of financial statements on an every other year basis prior to 1980. Extending the analysis to cover the earlier time periods would have necessitated the complete review of an additional 240 annual reports (80 companies for three years). This limitation of years covered may restrict the generalizability of the analysis to other periods but is justified due to the amount of time required to extend the analysis. In addition, as the researcher's goal was to gain a better understanding of the accounting process related to losses and their impact on income taxes it is appropriate to select a time period where the probability of encountering losses is high.

As the early part of the 1980s, particularly 1982 and 1983, was a period when companies frequently incurred losses it is anticipated that unrecognized loss carryforwards will be more numerous than in prior time periods. It is not known what bias this time period may have on the recording of extraordinary items for the realization of previously unrecognized loss carryforwards. An increase in the number of loss carryforwards increases the potential for these extraordinary items to occur, but at the same time the more frequent losses would decrease the probability of these extraordinary items.

NOTE DISCLOSURE RELATING TO LOSS CARRYFORWARDS

The first objective of this chapter is to examine the nature and extent of note disclosure relating to loss carryforwards. To accomplish this objective the following questions will be investigated.

1. How many sample companies provide disclosure of the existence of either recognized or unrecognized tax loss carryforwards?
2. Are the expiry dates always provided?
3. Is it clear that the loss carryforward is only the accounting portion?

TABLE 6-1  
 Number of Observations Disclosing  
 Various Types of Loss Carryforwards

Type of Loss Carryforward	Number of Observations Disclosing			
	1980	1981	1982	1983
Non-capital loss	14	14	23	23
Capital loss	2	3	3	3
Investment tax credit	1	4	10	11
Unrecorded Deferred Tax Debits	4	5	7	4

In all years the sample size was 80.

Some companies are represented in more than one category in any particular year.

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Disclosure of Loss Carryforwards

Table 6-1 summarizes the number of sample observations disclosing the existence of a loss carryforward. It is apparent that the disclosure of loss carryforwards was not an unusual occurrence during the early 1980s. In 1980 and 1981 fourteen companies (17.5 percent of sample) disclosed the existence of a non-capital loss carryforward. This jumped to 23 (28.8 percent of sample companies) in 1982, where it remained for 1983. The increase in numbers for

1982 are consistent with the belief that many of the drawdowns observed in 1982 were related to losses.

The net increase of nine companies disclosing non-capital loss carryforwards between 1981 and 1982 was composed of ten new companies and the deletion of one company that appeared to have realized all of its loss carryforward.<sup>(67)</sup> Of the ten new additions in 1982, nine had income statement drawdowns. The other company had an income statement buildup in deferred income taxes but its loss carryforward related to a subsidiary it purchased in the year. Therefore, it appears that drawdowns of deferred income tax to recognize losses were not sufficient to offset the full amount of the loss in many cases.

The disclosure of capital loss carryforwards are less frequent and as they can not typically be recognized by drawing down deferred income taxes they are not of great significance to this study. The increase in the number of investment tax credit carryforwards is consistent with the

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67 The use of the word "appeared" is necessary as there is no current requirement to disclose that any portion of a loss carryforward has expired without being realized.



increase in the number of loss carryforwards.(68) With the introduction of Section 3805 of the CICA Handbook it will be interesting to see the level of this disclosure after 1984 as the new section permits the recording of the benefit of this tax credit only when the company has reasonable assurance of realizing it. This is a much less stringent test than the virtual certainty requirements which currently exists for recording the benefit of a loss carryforward as an asset.

#### Disclosure of Expiry Dates

In general, sample companies disclosing loss carryforwards disclosed the expiry dates of the losses. However, one company in 1980, two in 1981 and two in 1983 did not provide disclosure of the expiry dates where it appeared they should have. In addition, one company in 1981 and 1982 and another company in 1983 only disclosed the time period over

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68 Generally, investment tax credits can not be claimed unless the company has taxable income.

which the loss expires, without specifying the amount expiring in each year.

#### Nature of Loss Being Disclosed

As was mentioned earlier, companies are only required to disclose the portion of a tax loss carryforward that has not been recognized in the financial statements. Lanfranconi and Robertson (1984) in their brief investigation of the area, found that the notes dealing with loss carryforwards were confusing and that it was not always possible to determine if the loss carryforward figure being disclosed was the tax figure (unrealized) or the accounting figure (unrecognized). While these two figures may be the same, it is possible that these two figures will be substantially different if the company has recognized some of the loss carryforward by drawing down deferred income taxes or has recognized the future benefit by setting up an asset. This section will review the note disclosure to evaluate this disclosure issue.

Table 6-1 indicated that over the four-year period studied 74 observations disclosed a non-capital loss carryforward. The financial statement notes of these 74 observations were reviewed to establish whether the notes were disclosing the loss carryforward for income tax purposes, the loss carryforward for accounting purposes or both.

Considerable difficulty was encountered in classifying the notes because of their wording, particularly the joint use of the terms "tax loss carryforward" and "unrecognized". Therefore, the reader is cautioned to evaluate the results as being based on the best interpretations made by the researcher and not necessarily precise descriptions of the underlying reality of the events as reflected in the notes.

The results (Table 6-2) are surprising even given the potential margin of error in classification. Only twelve observations appear to be disclosing the accounting loss carryforward, while 47 observations appear to be disclosing the loss carryforward that exists for tax purposes. The fifteen other observations provided both the accounting and tax loss carryforward with six of these observations indicating that no accounting loss carryforward existed

TABLE 6-2

Classification of Researcher's Best Interpretation  
of the Type of Loss Carryforward Described in the  
Notes to the Financial Statements

	1980	1981	1982	1983	Total
Accounting loss	1	2	5	4	12
Tax loss	9	9	13	16	47
Both	3	2	2	2	9
Tax loss but no account- ing loss exists	<u>1</u>	<u>1</u>	<u>3</u>	<u>1</u>	<u>6</u>
Total number of companies disclosing existence of non-capital loss carryforward	<u>14</u>	<u>14</u>	<u>23</u>	<u>23</u>	<u>74</u>

The term "best interpretation" is used due to the ambiguity the researcher found in the wording of the notes.

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Accepting the classification of Table 6-2 as reasonable, there is a potential departure from the recommendations of the CICA Handbook for 47 observations disclosing only the tax loss carryforward (ie. the unrealized amount). (69) What are the potential explanations for this?

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69 If any departures do exist they appear to be condoned in practice as none of the companies received a qualified audit report.

1. It is possible that the tax and accounting loss carryforward figures are the same. This could occur if the company has not recognized any of the benefit of the loss carryforward due to either:
  - a. having no deferred income tax to draw down, or
  - b. deciding that they do not wish to draw down deferred income taxes to recognize the loss carryforward.
2. A belief on the part of management that the accounting loss carryforward figure is not relevant to users' needs.
3. Disclosure of a tax loss when no accounting loss exists, without informing the reader of this.
4. Poor wording of the notes leading to misclassification by the researcher.
5. Lack of materiality of the amounts.

The extent of these explanations can not be established, but in the case of points 1b, 3 and 4 the possibility can be shown by reviewing some examples of the sample company note disclosure.

#### Examples from Practice

Example One: The possibility of a company deciding that they do not wish to draw down deferred income taxes is provided by the following accounting policy note from White Pass and Yukon Corporation Limited.

Potential tax reductions that may result from the application of losses against future taxable income are not recognized unless recovery out of future taxable income is virtually certain. (Annual Report 1983)

The note for 1980-82 was basically the same. As the accumulated deferred income taxes was \$7,071,000 (6.4 percent of total assets) in 1983 the note indicates a potential inconsistency between practice and paragraph 3470.48 of the Handbook.

As mentioned earlier in this chapter, paragraph 3470.48 states in part that "the unrecorded tax benefit of the loss carryforward should be recognized to the extent of any reductions in accumulated deferred income tax credits available in the carryforward period by claiming less capital cost allowance than depreciation recorded..."

Example Two: An example of a company disclosing a tax loss carryforward when there is likely no accounting loss carryforward is provided by Simpson-Sears Limited. For the year ended February 2, 1983, one of Simpsons-Sears' notes indicated a \$20 million tax loss carryforward and that the associated tax benefit of \$10,364,000 had been recognized by reducing accumulated deferred income taxes by this amount. This note was classified as disclosing a tax loss carryforward when no accounting loss carryforward exists.

In the next annual report for the 48 week period ending December 31, 1983 the note stated:

As at December 31, 1983, the company and certain subsidiaries had losses for income tax purposes of approximately \$18 million available to reduce taxable income over their next six fiscal years.

Based on the wording, The 1983 note was classified as disclosing only a tax loss carryforward. However, when one considers the prior year's note, it appears that the 1983 note is actually describing a tax loss carryforward when no accounting loss carryforward exists.

Example Three: An example of a note that may have been incorrectly classified as disclosing a tax loss carryforward was provided by Lambda Mercantile Corporation in its June 30, 1983 financial statements.

Non-capital loss carryforwards for tax purposes which have not been recognized in these financial statements are approximately \$97,000. The tax benefit of these loss carryforwards is available until:

1987	\$75,000
1990	<u>\$22,000</u>
	<u>\$97,000</u>

Upon first reading, it appears that the note may be referring to an accounting loss carryforward as the note states "which have not been recognized in these financial statements". However, by looking at next years' note one discovers an extraordinary gain of \$47,654 for a non-capital loss carryforward and an extraordinary loss of \$42,000 for deferred tax of prior years reinstated. As there is no longer any disclosure of loss carryforwards this leads me



to believe the 1983 financial statements were disclosing the tax figure.

Summary: The three examples described above indicate a lack of consistency in note disclosure. This could result in users having difficulty in comparing note disclosure between companies and assessing the implications of this disclosure in a single company.

#### LOSS CARRYFORWARDS AND ACCUMULATED DEFERRED TAXES

The second objective of this chapter is to determine if the non-existence of accumulated deferred income taxes on a sample company's balance sheet coincides with the disclosure of loss carryforwards.

All observations disclosing a non-capital loss carryforward were examined to determine whether they had any long term accumulated deferred income taxes. The results of the comparison are presented in Table 6-3. The data indicate that disclosure of a loss carryforward does not necessarily im-

TABLE 6-3

Nature of Accumulated Deferred Income Tax Account for  
Companies Disclosing a Non-capital Loss Carryforward

	1980	1981	1982	1983
Companies with long-term accumulated deferred tax credit	6	8	14	15
Companies with no long-term accumulated deferred taxes.	7	4	6	5
Companies with long-term accumulated deferred tax debit	<u>1</u>	<u>2</u>	<u>3</u>	<u>3</u>
Total disclosing a loss carryforward in notes	<u>14</u>	<u>14</u>	<u>23</u>	<u>23</u>

ply the elimination of all of a companies deferred income tax. As Canadian tax law requires legal entities to file tax returns and does not permit consolidated returns, the continued existence of accumulated deferred income tax is likely due to the fact that other companies in the consolidated entity have deferred income taxes. It does however, indicate that a financial statement user may be confused as to which subsidiaries are deferring income tax and which would benefit from being able to generate taxable income.

TABLE 6-4

Companies With no Long-term Accumulated  
Deferred Income Taxes

	1980	1981	1982	1983
Companies with no long-term accumulated deferred taxes disclosing loss carryforwards	7	4	6	5
D.H. Howden	X	X	X	X
Wajax	X	X	X	X
Bombardier		X	X	X
Cassidy's		X		
Firan Corporation				X
United Tire and Rubber	—	—	—	<u>X</u>
Total number of companies with no accumulated deferred income taxes	<u>9</u>	<u>8</u>	<u>9</u>	<u>10</u>

Table 6-4 considers all sample companies that did not have any long-term accumulated deferred income tax at year-end. Investigation of these companies was considered important as it has been suggested that although drawdowns may in fact occur, it is unlikely that they could result in a drawdown to a zero balance unless the company encountered losses.

The first row of Table 6-4 denotes those companies that had no long term deferred income taxes and disclosed the existence of a loss carryforward. These are the same numbers as

appear on Table 6-3 and would indicate that the zero balance in deferred income taxes is associated with losses. The companies then listed on Table 6-4 are the other sample companies with a zero balance in accumulated deferred income taxes that did not disclose a loss carryforward. The following paragraphs provide probable explanations for why these companies had zero balances for accumulated deferred income taxes, yet did not provide a note on loss carryforwards.

Two companies, D. H. Howden and Wajax used accelerated depreciation methods that appeared to be very similar to those permitted for income tax purposes. These two companies would be unlikely to create timing differences that would result in accumulated deferred income taxes.

Bombardier disclosed in their notes the existence of timing differences caused by recording more depreciation than CCA claimed. If recorded, this would have given rise to a large long-term deferred tax debit.

Cassidy's recorded a drawdown in 1981 that eliminated all of its accumulated deferred income tax and resulted in a total tax expense that when compared to its adjusted income

would lead one to believe that if any accounting loss carryforward existed, it was immaterial. As no material accounting loss existed at the end of 1981, disclosure in the notes would not be required based on the recommendations of the CICA Handbook. The company's 1982 disclosure indicates that a tax loss carryforward did in fact exist in 1981.

For Firan, 1983 was the year that its loss carryforward expired so the company would not be creating timing differences that could be set up as a credit.

In the case of United Tire and Rubber, the drawdown in 1983 that led to a zero balance in accumulated deferred income tax was 56 percent of its adjusted income figure, indicating it had recognized at least the vast majority of its loss carryforward and therefore disclosure was not required. The company's 1984 financial statements disclosed the existence of a loss carryforward that expires over a four year period.

In conclusion, it appears that providing a company does not follow accelerated depreciation methods, the primary factor that will lead to the elimination or non-existence of long-term accumulated deferred income taxes is losses. Un-

fortunately, a user may have to wait a year until the next annual report is released to verify this.

#### SUBSEQUENT REALIZATION OF LOSS CARRYFORWARDS

The third objective of this chapter is to determine the frequency of extraordinary items indicating the realization and, therefore, the recognition, of previously unrecognized loss carryforwards. As the Handbook requires that the realization of previously unrecognized loss carryforwards be treated as extraordinary items, the researcher reviewed all extraordinary items for the sample companies to determine if any of them reflected the realization of prior years loss carryforwards. The investigation was not restricted to only those disclosing loss carryforwards to avoid any potential omissions due to poor disclosure by the sample companies. As a point of clarification, it should be emphasized that the recording of an extraordinary item in the situation being investigated reflects both the realiza-

TABLE 6-5

Occurrence of Extraordinary Item for Realization  
of the Benefit of a Loss Carryforward

	1980	1981	1982	1983
Number of Extraordinary Items	13	13	7	15
Mean Dollar Value (000's)	970	490	366	404
Mean Percent of Current Tax Expense	25.3	44.4	44.1	47.1
Mean Percent of Net Income	19.6	16.6	15.2	22.5

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tion (in a cash sense) and the recognition (in an income sense) of a previously unrecognized loss carryforward.

Table 6-5 indicates that 48 observations had an extraordinary item relating to the realization of a loss carryforward. Thirteen occurred in both 1980 and 1981, seven in 1982 and 15 in 1983. The data on the mean dollar value, mean percent of current tax expense and mean percent of net income indicates that for the companies having these extraordinary items, the amounts are not trivial.

TABLE 6-6

Frequency of Extraordinary Item for Loss  
Carryforward by Company

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Number of Companies	Years of Extra- ordinary items	Total
5	4	20
2	3	6
7	2	14
<u>8</u>	1	<u>8</u>
<u>22</u>		<u>48</u>

---

As may have been expected, the occurrence of the extraordinary items for realization of loss carryforwards was not evenly distributed over the sample companies. Instead, as Table 6-6 indicates, the 48 extraordinary items were spread over 22 companies, with five companies having one in each of the four years investigated, two companies had three, seven companies had two and eight companies had only one.



### OTHER OBSERVATIONS

The purpose of this section is to discuss or illustrate additional items that the researcher discovered in reviewing the notes related to loss carryforwards.

#### Loss Carryforwards Incorporated in Accumulated Deferred Taxes

As one of the topics of interest in this research is the frequency of drawdowns relating to loss carryforwards, the researcher kept track of the number of companies disclosing in their notes that accumulated deferred income taxes had been used to recognize the benefits of loss carryforwards. This information was sometimes provided in the description of accounting policies and in other cases by means of stating that a drawdown in the year resulted from losses. Such disclosure is not required by the CICA Handbook and in many cases may not be applicable.

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TABLE 6-7  
Number of Sample Companies Indicating Deferred  
Income Taxes Have Been Reduced by Recognizing  
the Benefit of Loss Carryforwards

Year	Number
1980	3
1981	3
1982	9
1983	7

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The results of this review (Table 6-7) indicate that three companies in 1980 and 1981 provided sufficient information to conclude that accumulated deferred income taxes incorporated loss carryforwards. In 1982, nine companies noted this fact, while only seven companies noted it in 1983. In total, this represents eleven different sample companies that provided this disclosure. The data from Chapter Four would indicate this is a low estimate of the number of companies actually using the provisions of paragraph 3470.48. However, it does reinforce the observation that deferred income taxes are being drawn down to recognize losses and not to symbolize an outflow of cash to the government.

Association of Current Tax Expense and Extraordinary Items

The purpose of this section is to investigate the potential impact of the Canadian government's prohibition on consolidated tax returns. The primary reason for considering this issue is to determine if losses are being trapped in one legal entity. If this is the case, there is the normative question of whether the business segment that is unable to benefit from the loss should be disclosed to financial statement readers. In addition, there is a question of public policy on the transferability of losses between corporations, but this topic is beyond the scope of this thesis.

If each of the sample companies disclosing a loss carryforward represented only one legal entity then we would expect that when the company reported a positive current tax expense it would also report an extraordinary item representing the realization of the loss carryforward. However, when we have to deal with consolidated financial statements this relationship may well disappear and lead to difficulty in understanding the financial impact of the losses. To gain some understanding of this issue simple cross-tabulations of the sign of companies' current tax ex-

pense and the realization of loss carryforwards were prepared and are presented in Table 6-8.

Only those companies having an extraordinary item for the realization of a loss carryforward or disclosing the existence of a loss carryforward at year-end are incorporated in Table 6-8. The upper portion of the table indicates that the occurrence of negative current tax expense does not eliminate the possibility of realizing a loss carryforward. The middle portion of the table analyzes those companies reporting positive current tax expense and indicates that the occurrence of positive current tax expense does not necessarily lead to the recording of an extraordinary item for realization of a loss carryforward. The bottom section of Table 6-8 considers the companies that did not have any current tax expense. When a company reports zero current tax expense one would not expect to find an extraordinary item for the realization of a loss carryforward on the company's income statement. This expectation is supported by the data.

The primary conclusion is that due to the prohibition on consolidated tax returns in Canada the realization of loss carryforwards does not parallel that which would occur in a

TABLE 6-8

Classification of Companies With Either a Disclosed  
Loss Carryforward at Yearend and/or an Extraordinary  
Item Indicating Realization of a Loss Carryforward

		Companies Having Negative Current Tax			
		1980	1981	1982	1983
Extraordinary Item	YES	2	1	0	0
for Loss Carryforward	NO	1	0	6	0

		Companies Having Positive Current Tax			
		1980	1981	1982	1983
Extraordinary Item	YES	11	12	7	15
for Loss Carryforward	NO	2	4	7	8

		Companies Having Zero Current Tax			
		1980	1981	1982	1983
Extraordinary Item	YES	0	0	0	0
for loss carryforward	NO	2	1	4	3

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single legal entity. If a user is provided with information that a company has a loss carryforward and is going to incur current tax expense the user can only guess as to whether the loss carryforward will reduce the company's cash outflows. Even the segmented data now provided would fall short of satisfying a users requirements to make predictions as there is no requirement to disclose which segment the loss carryforward relates to.

## CONCLUSION

This chapter set out to describe the notes to companies' financial statements dealing with loss carryforwards, their subsequent realization and the relationship between loss carryforwards and accumulated deferred income taxes. It was shown that from 1980 through 1983, note disclosure of loss carryforwards was not infrequent nor was the subsequent realization of these losses infrequent.

An analysis of all companies having no long-term accumulated deferred income tax indicated that except for two companies using accelerated depreciation, the reason for the zero balance related to the occurrence of losses.

Two major problem areas were identified. The first dealt with the inconsistency in the disclosure of loss carryforwards. It appears that several companies do not disclose the existence of a loss if it has been recognized which is consistent with the CICA Handbook. However, when an unrecognized loss carryforward exists there appears to be a tendency to disclose the tax figure. If financial statement users are assumed to be interested in both future income

and future cash flows, then a user would want to know both the amount of the loss carryforward for tax purposes and the loss carryforward for accounting purposes and not simply one of these numbers. In addition, the disclosure of both loss carryforward figures would likely eliminate much of the interpretational problems the researcher encountered in analyzing the notes.

The second issue of concern is the lack of information on the segment of the business with the loss. Without this data it is difficult to establish the likelihood of the eventual realization of the benefit and the corresponding impact on net income and cash flows.

## CHAPTER SEVEN

### SUMMARY, RECOMMENDATIONS AND CONCLUSIONS

#### INTRODUCTION

The origin of this thesis was an empirical study Prof. Lanfranconi and I conducted in 1984. At that time we noticed that there did appear to be unusual behaviour in the deferred tax accounts as there were more drawdowns occurring than previous empirical studies had reported. In addition, the reasons for this behaviour was not apparent from reviewing the financial statements. In as much as the frequency of financial statement losses appeared high we offered this as a possible explanation for our observations, but indicated that future study would be required to substantiate our explanation. The critical question we were unable to answer was whether the drawdowns we observed



were the result of companies having insufficient tax deductions available to offset the depreciation recorded in their financial statements. In other words we were unable to determine if the drawdowns had a cash impact.

Subsequent to the study I conducted a brief review of the literature and found no empirical studies that had attempted to study the interaction of deferred income taxes and accounting losses, although it was mentioned in passing by some authors. Therefore, I designed this research to first adequately describe what was happening in the recessionary period of the early 1980s and second to try to determine the factors underlying the apparent increase in drawdowns.

#### LIMITATIONS OF THE STUDY

As with most research studies a primary limitation can be found by a detailed consideration of the sampling plan. In the case of this study the population was restricted to public companies listed on the TSE and likely to have a ma-

majority of their deferred income taxes caused by CCA/depreciation timing differences. The first limitation caused by this selection procedure is that the TSE is composed of companies that tend to be larger than most Canadian corporations, and are more likely to operate with more than one legal entity. Although the sampling plan was designed to ensure a cross section of asset sizes from this group, any extension of the results to the entire population of Canadian companies is believed to be unwarranted without added investigation. It is believed, however, that a public-private bias is unlikely to exist as both groups are required to follow Section 3470 in all respects except for disclosure of a reconciliation of the differences between the effective and the statutory tax rate.

The second limitation resulting from the sampling plan is that the results can only be extended to companies having a large amount of CCA/depreciation timing differences. From Beechy (1984) we know that this is the major timing difference but this is not always the case for all companies. As oil and gas companies, real estate companies, banks and insurance companies were specifically excluded from the sample it is not possible from the data to make comments about these companies. However, the sample is believed to be

representative of manufacturing and service oriented companies.

### SUMMARY OF RESULTS

#### Change in Deferred Tax Behaviour

This study provides unique descriptive data on the dramatic increase in the number and size of drawdowns in 1982 and 1983 compared to the nine prior years for which data was also collected. If the data from Cawsey et al (1973) and Beechy (1981) are considered, it can be said that the extent of drawdowns during these two years is unprecedented in Canada. While an increase may have been predicted with the recession, the extent of it was not likely anticipated. In addition, if the data are compared to studies of deferred tax behaviour using U.S. data for a similar period (Davidson et al, 1984) one observes that the extent and magnitude of drawdowns were much larger in Canada.

This study also showed that accumulated deferred income taxes are not as significant as the prior literature had indicated. Prior studies used a sampling plan that restricted sample companies to those having deferred income taxes on their financial statements. This immediately biases the results to make deferred income taxes appear much more significant. In addition, the sampling plan was often restricted to companies whose financial data were on easily retrievable data bases.

In this study the companies' accounting policy determined whether inclusion in the sample was appropriate and data were gathered directly from financial statements to avoid any bias that may exist in computerized Canadian data bases. These adjustments resulted in the finding that accumulated deferred income tax as a percentage of assets is much lower than previously thought and the distribution is skewed to the left based on size of the company. That is, larger companies tend to have larger accumulated deferred taxes as a percentage of total assets, retained earnings and total equity, than smaller companies (Tables 4-8, 4-9, 4-10). Along the same line it was shown that deferred income taxes as a percentage of both total assets and owners' equity had a statistically significant decline from 1981 to

1982 (Table 4-8). Although the change in these ratios from 1982 to 1983 was not statistically significant the decline did continue.

Another observation resulting from this study is that the number of drawdowns is not influenced by the size of the company, at least in the range of the sample selected (Table 4-12). This is because the smaller companies were more likely to have no deferred taxes on their financial statements. The analysis in Chapter Six would suggest that this occurs primarily because of losses. This would also explain why accumulated deferred income tax as a percent of total assets appears to be positively associated with company size.

#### Explanation for the Changed Behaviour

Two primary factors were considered to explain the change in the observed behaviour of deferred income taxes: the traditional explanation of a decline in fixed asset addi-

tions and the recording of the benefit associated with accounting losses as permitted by the CICA Handbook losses.

It was discovered that fixed assets additions did indeed decline during 1982 and 1983 (Table 4-13). Although a paired-difference test of net fixed asset additions did not indicate a significant decline, it was shown that the mean of net additions did decline from \$50.6 million in 1981 to \$29.0 million in 1983. When net fixed asset additions divided by depreciation expense was considered (Table 4-14), a statistically significant decline in the growth rate of fixed assets was observed between 1981 and 1982. The analysis was extended (Table 4-15) to show a significant correlation between growth in fixed assets and deferred income tax expense as a percent of total assets. These observations suggest that the decline in deferred income tax expense may have resulted from the decline in fixed assets additions, however, this statement is based only on correlations.

When the impact of losses were considered it was shown that there is a significant relationship between negative accounting income and drawdowns (Table 4-16). However, it must be noted that the majority of drawdowns were associ-

ated with positive accounting income. When the size of drawdowns were considered it was shown (Table 4-17) that the larger drawdowns in dollar terms and as a percent of total assets were associated with negative accounting income rather than positive accounting income.

When the impact of these two factors were considered jointly (Tables 4-19(a) and 4-19(b)) the data were somewhat contrary to what would be expected intuitively or based on the literature. The data indicated that in 28 observations drawdowns occurred when accounting income was positive and growth in net fixed assets was greater than one. Due to this discovery, and to substantiate the impact of losses on the behaviour of deferred income taxes, the researcher decided it was necessary to contact company management to determine the cause of some of the drawdowns.

The results of the company contacts presented in Chapter Five leave little doubt as to the importance of losses in leading to deferred income tax drawdowns. In addition, the contacts clearly show (Tables 5-2 and 5-3) that drawdowns due to losses occur even when the consolidated entity is generating a positive accounting income. This observation explains the difficulty encountered in interpreting the

cause of drawdowns from an analysis of the financial data disclosed in companies annual reports.

#### Analysis of Note Disclosure

Chapter Six provided insights into company note disclosure. It was discovered that the disclosure of non-capital loss carryforwards was not infrequent with 29 percent of the sample companies disclosing these items in 1982 and 1983 (Table 6-1). However, the researcher encountered considerable difficulty in determining whether the loss carryforward that was being disclosed was the accounting or the tax loss carryforward.

In addition, the analysis in Chapter Six indicated that except for the use of accelerated depreciation methods by two companies all occurrences of zero accumulated deferred income taxes were related to losses. This dramatic effect of losses on deferred tax accounts reinforces the idea that deferred income taxes are in practice working as an income smoothing device and not representing the deferral of pay-



ment of an expense as is implied by the use of the comprehensive tax allocation method. In other words, an expense is recorded in one period and then reversed in a later period when a loss occurs and it is discovered the expense was not required.

Chapter Six (Tables 6-5 and 6-6) also presented data to indicate that subsequent realization of loss carryforwards do in fact occur and often occur over a period of years. However, there is no way of knowing what proportion of tax loss carryforwards are ultimately realized based on current disclosure requirements.

### Summary

Avoiding, for the moment, the conceptual issue of how we should account for deferred income taxes, it is possible to assess whether the objectives for this research, as described in Chapter One, were achieved.

The primary objective was to determine if the increase in drawdowns observed in the recessionary period "was consistent with the traditional involuntary reversal argument or whether they may have resulted from the recognition of accounting losses." The data support the belief that the recognition of accounting losses was a highly important factor leading to the observed increase in the number and size of deferred income tax drawdowns. While involuntary reversals did occur, the data in Chapter Four would indicate they were relatively small, and the interviews in Chapter Five would indicate they were less frequent than much of the prior literature would suggest.

A second objective was to determine if "it is possible to identify each type of drawdown from the financial statements and to assess the extent of each type of drawdown." The conclusion is that it is not possible to determine the reason for a drawdown from an analysis of a company's financial statements. While a financial statement user may, with some confidence, interpret that a drawdown occurring in a loss year relates to the loss, it would be risky for the user to speculate as to the reasons for a drawdown when a company is profitable. As shareholders are assumed to be interested in the extent, timing and uncertainty of future

cash flows and as income taxes and timing differences influence all three of these factors, it appears that the level of disclosure is inadequate to estimate the cash impact and, therefore, should be increased.

A third objective was to provide data to Canadian accounting standard setters. This has been accomplished and is presented in Chapters Four, Five and Six. It is believed that these data provide strong support for additional disclosure. However, while the empirical data may convince many individuals that deferred income taxes do not qualify as liabilities, the final decision on the measurement of deferred income taxes remains conceptual. It is to this area that I now turn.

#### RECOMMENDATIONS

The CICA has indicated their intention to reconsider the entire area of accounting for income taxes, therefore, I will offer my personal views on the measurement and disclosure in this area of financial reporting.

The primary point that must be made is that any decision on accounting for income taxes is arbitrary because it is based on the timing differences between two different allocation systems for determining income: the income tax act and generally accepted accounting principles. To make matters worse, these two allocation systems have different objectives which, if anything, are becoming more divergent. Despite this a choice must be made and it should be internally consistent.

I would suggest that the standard setters consider the issue from both the preparers and the users viewpoint. From the preparers viewpoint, the recommendations must be reasonably simple to implement and preferably not lead to inappropriate fluctuations in significant balance sheet or income statement ratios. From the users point of view the data should be relevant, free from any significant manipulation and understandable. In addition, I suggest that the standard setters keep in mind Arthur Thomas' prescription on allocations.

"Do whatever they [accountants] can to reduce the variety of allocation alternatives currently available, and to keep the survivors as unsophisticated as possible. If, for the time being, financial statements must be incorrigible, at least they can be simple." (Thomas, 1975)

With these factors in mind my suggested recommendations will be considered. They are divided into three separate sections: measurement of deferred income taxes, accounting for loss carryforwards and accounting for subsequent recognition of loss carryforwards.

#### Measurement of Deferred Income Taxes

The options available for measuring timing differences<sup>(70)</sup> were outlined in Chapter Two. These options include liability treatment, net-of-tax treatment, the deferral approach and the flow-through approach.

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<sup>70</sup> Unless otherwise indicated, all references to timing differences or deferred income taxes refer only to CCA/depreciation timing differences.

## Liability Approach

### Definition of a Liability

No one would argue that deferred income taxes are a legal liability, but the existence of a liability does not necessitate a legally enforceable claim. A liability is defined by the FASB as follows:

"Liabilities are probable future sacrifices of economic benefits arising 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."

The FASB then goes on to describe three essential characteristics of a liability.

A liability has three essential characteristics: (a) it embodies a present duty or responsibility to one or more other entities that entails settlement by probable future transfer or use of assets at a specified or determinable date, on occurrence of a specified event, or on demand, (b) the duty or responsibility obligates a particular entity, leaving it little or no discretion to avoid the future sacrifice, and (c) the transaction or other event obligating the entity has already happened.

## Evaluation of Liability Treatment for Deferred Taxes

Before pursuing the evaluation of deferred income taxes it is necessary to state that I do not accept partial allocation as a viable method of implementing the liability method. If it is concluded that deferred income taxes do give rise to a liability then this implies comprehensive tax allocation. I can not see how some timing differences can be liabilities and others not as is implied by the accounting standards in the United Kingdom. The issue, if deferred taxes are interpreted as liabilities, is that of discounting, not recording only a partial amount.

It would have been possible to separate the discussion of liability treatment into two parts. The first would have been based on the assumption of no future fixed asset additions: a very strict FIFO interpretation of deferred income taxes. The second part would then reanalyze the issue assuming fixed asset additions in the future. However, it was concluded that this separation was not necessary. In our rapidly changing and uncertain world it is difficult to accept that many companies could remain profitable for any length of time without the purchase of additional assets

and if companies were to suffer losses there is clearly no liability.

The first characteristic of a liability requires a present duty or responsibility to one or more entities that entails settlement by probable future transfer or use of assets.(71) In the case of timing differences the duty or responsibility would be to the governments; however, the duty or responsibility will exist only if a company generates sufficient accounting income(72) at some future date so that the reversal of timing differences results in taxable income being larger than accounting income. I believe there is a potential duty or responsibility but believe the major question is whether the earnings of future income is

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71 It is important to note that the FASB's criteria for a liability does not require a cash outflow. As Milburn points out the use of CCA on future fixed asset additions to offset the reversal of timing differences is a sacrifice of a portion of an assets value.

72 The term accounting income is used intentionally. It is not sufficient to state that a company earn statement income because of the existence of permanent differences. For example when the inventory tax allowance was in existence a company generally had to earn a positive statement income equal to at least three percent of opening inventory before zero or greater accounting income would arise.



not only probable, but certain enough to say that a present duty or responsibility exists.

The empirical data provided in this thesis would indicate that there is sufficient doubt that a company will earn accounting income in future periods to argue that a present duty or responsibility does not exist. Based on personal interpretation and the empirical data, I conclude that while a potential duty or responsibility does exist a company is not under any present duty or responsibility, therefore, I do not believe the first characteristic is met.

This conclusion is supported by Kenley (1981), who states:

"Clearly therefore a provision for deferred or future tax does not meet these "essential characteristics" of a liability... There is no "present duty or responsibility" to meet such payments." (p. 28)

I anticipate disagreement by some with this conclusion but believe this will centre on how definitive an obligation must be before we call it a liability. To quote the FASB

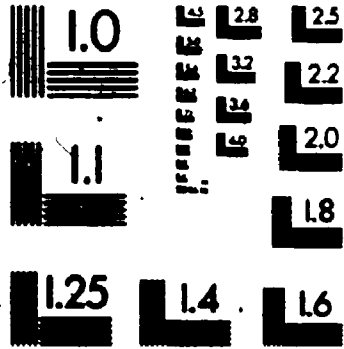
the concepts of equitable and constructive obligations must be applied with great care. To interpret equitable and constructive obligations too narrowly

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MICROCOPY RESOLUTION TEST CHART  
NBS 1010a  
ANSI and ISO TEST CHART No. 2



will tend to exclude significant actual obligations of an entity, while too interpret them to broadly will effectively nullify the definition by including items that lack an essential characteristic of liabilities." (SFAC No.6, par.40).

The second characteristic is that the duty or responsibility obligates a particular entity, leaving it little or no discretion to avoid the future sacrifice. Again, the incurrence of future accounting losses could eliminate the obligation. However, the intentional incurrence of losses can rarely be described as a discretionary act if we assume that company's are directed by rational management.

Another discretionary act that could be taken by management is a retroactive change in accounting policy that increases the amount of depreciation expense. Due to a larger amount of accumulated depreciation the accounting net book value of the assets will be reduced. Therefore, the timing difference that exists between the accounting net book value of assets and the tax net value (undepreciated capital cost) would be reduced. This action would change a so called liability into equity without changing the cash flows of the business in any way. I can think of no other liability that can be eliminated by such an adjustment. Therefore, to continue the assessment of the second charac-

teristic it is necessary to assume that the allocations that have determined the net book value of fixed assets are reasonable in the circumstances and in addition that the deferred tax credit is separable from the valuation of the asset. Accepting that losses are not discretionary, and that the book value of assets are appropriately determined, I would have to conclude that deferred income taxes meet the second characteristic of a liability.

I believe that it is this line of reasoning that has led Alex Milburn to conclude that deferred taxes give rise to a liability. It is impossible to dispute his assertion that the claiming of CCA on future asset purchases is an economic sacrifice. He has also implicitly asserted that the timing difference between CCA and depreciation are separate from the fixed assets or else I believe he would have been forced to conclude that net-of-tax treatment is necessary.

The third characteristic is that the transaction or event obligating the entity has already occurred. In the case of timing differences the transaction or event that has occurred is the claiming of CCA in excess of depreciation. But it is not the only event necessary to ensure an obligation even under a FIFO viewpoint such as Milburn's. A

company must earn accounting income in the future as well. Therefore, to accept ~~this~~ third definition we must assume that the earning of future income is probable enough to be able to state that the event obligating the entity has already occurred. Based on the empirical data I must reject that deferred income taxes meet this characteristic. Again, it is based on my belief that the earning of future accounting income is not probable enough to justify liability treatment.

This conclusion is supported by Rosenfield and Dent (1983) who state:

"The liability theory of deferred taxes should be rejected, because it would result in reporting liabilities before they are incurred." (p.52)

If one assumes that the likelihood of future income is sufficiently probable to indicate that a present duty does exist, then it is possible to conclude, using Milburn's argument, that deferred income taxes do give rise to a liability. However, this liability will not all come due at one point in the near future. Instead, it will come due over an extended period of time. To recognize this fact it would be necessary that the liability first be adjusted for

any changes in the tax rate and then discounted to recognize the time value of money. I would also suggest that the liability method would necessitate that serious consideration be given to what is included in deferred income taxes. If our concern is to measure a liability then all differences between tax values and book values should be considered, not just timing differences (see Table 1-3).

The process of discounting leads to considerable concern regarding implementation. For example, what is the appropriate discount rate to use, should the discount rate be adjusted each year, and perhaps most importantly what is being discounted? The basic point is that the implementation would be costly and complex; far from a simple solution that Thomas would suggest for an allocation related issue. In addition, in the current Canadian accounting environment, recommendations issued by the CICA apply to almost all Canadian corporations, both public and private. The added burden of discounting, particularly on smaller companies, is likely to face severe opposition.

I also question the relevance of a discounted deferred tax figure to a financial statement user. I suggest that what a user is interested in is some assessment of the likely im-

fact of income taxes on future cash flows and future income. It is not clear how discounting will improve this assessment sufficiently to justify the cost. If the liability method were applied without discounting this argument would be even stronger. The fluctuation in income because of a change in the tax rate or the introduction of a temporary surcharge would scarcely help in the estimation of future income.

#### Inference From Empirical Data

As was stated in Chapter Three, the issue of whether deferred income taxes are a liability or not is largely conceptual. However, it was also suggested that empirical evidence would provide insights. I have long accepted the argument that simply because deferred income taxes grow in dollar size or even as a percentage of assets, this is not sufficient for exclusion from liability treatment. Many items that are considered liabilities continually increase in size over time. For example, accounts payable, bonds payable or wages payable are likely to show continued in-

crease as a company grows and are likely to remain reasonably constant in size if the company remains static in size. In other words, this behaviour is similar in nature to that which is exhibited by deferred income taxes in a growing and prosperous company.

The telling point that the empirical data provides is what happens when the number decreases. Let us first consider the typical situation when bonds payable decrease. When this occurs the company has made a cash payment in most cases, although if the bonds are convertible we would see a change in the ownership structure of the company. Now let us change our analysis to the situation where a company's deferred income taxes decrease. While in some cases this does lead to a corresponding cash outflow, the empirical data suggests that in many cases and particularly when the decrease is large in size, no cash flows out of the business, it is simply the recognition of the benefit of a loss. This inference is based on a period of economic downturn and a reduction in the speed of write-offs permitted for CCA. If under such conditions net reversals in timing differences appear to occur primarily because of losses, it is difficult to interpret deferred income tax as anything but an artificial smoothing device. In other



words, the deferred income tax figure generally represents a permanent contribution of capital in most cases.

#### Analysis of the Governments Position

Although a traditional analysis of a liability would not consider the point of view of the person to whom the liability is presumably owed to, it may be useful to do so in this case. In my perception, current government legislation is implicitly stating that the government is making a conditional contribution of capital to the company. In simple terms they have implicitly said, "if the company is willing to continue its business at its current size or larger, or if the company suffers losses, then the capital associated with deferred income taxes is permanently granted to the company. Only if the company decides to contract in size and can continue to remain profitable do we demand that the company pay us this capital." In other words, it is assumed that the CCA rules are in place to encourage companies to invest and therefore contribute to society as a whole. Only if the company is implicitly going

out of business by reducing its fixed asset expenditures in nominal dollars, and, therefore, reducing its contribution to society, is there a potential need to return the contribution of capital. I know of no other liability that is so conditional from the point of view of whom the liability is due to.

#### Conclusion on Liability Treatment

In summary, I have rejected the liability method for accounting for deferred income taxes for several reasons. First, because I believe that the earning of future accounting income is not sufficiently probable for deferred income taxes to meet the FASB's three essential characteristics of a liability. Second, liability treatment, in my opinion, necessitates discounting which would lead to greater costs and complexity without any apparent benefit to the users. Third, if discounting were rejected but liability treatment adopted, it is questionable whether any benefit would be gained.

### Net-of-tax Approach

The net-of-tax approach allocates the timing differences that exist to the various assets or liabilities that give rise to them. For example, a deferred tax credit relating entirely to CCA/depreciation timing differences would be subtracted from the cost of fixed assets in a manner similar to accumulated depreciation. This implies that there are two separate future benefits from owning an asset: the tax shield benefit, and the operating benefits. While this may be consistent with how an investment decision is made on fixed assets there are problems with this approach.

- First, there are timing differences other than CCA/depreciation, some of which do not have an asset or liability which to offset. Second, it is believed that it may be confusing to a financial statement reader to see the timing differences allocated amongst various balance sheet accounts.

### Deferral Approach

If one considers the deferred tax figure as a deferred credit it is not possible to analyze it using a definitional approach as adopted by the FASB in SFAC No.3 and revised to incorporate non-profit companies in SFAC No.6. Deferred credits are not liabilities, nor are they equity, they are simply account balances created by following a series of rules that attempt to match revenues and expenses. It is difficult, if not impossible, to define the resulting balances for deferred income taxes in any manner except by defining them by using the series of rules. Because of this, it is necessary to evaluate deferred income taxes using criteria other than the definitions of FASB.

The primary objective of the deferral approach is that of matching. In other words its goal is to improve income measurement and not to value a liability. This has been typically illustrated using the example of the purchase of one asset that generates income over its entire life. In the case of the one asset company the argument is very compelling. The issue is whether the argument should be ex-

tended to multi-asset companies. I believe it should be but only for those rapid write-off assets such as Class 29 assets. The acquisition of these assets may lead to large swings in income if they are not measured in the determination of income. I believe it is important that we try to provide some measure of this to avoid the fluctuations in income that can result from the timing of significant purchases of Class 29 assets. This point may be far more significant in small companies rather than large companies. Although I do not have data to argue strenuously one way or the other I suspect that the lumpiness of Class 29 asset purchases in small corporations could lead to considerable fluctuations in income that may well be misinterpreted by the limited class of users of these financial statements.

A second reason for supporting comprehensive allocation on Class 29 assets using the deferral method is a belief that these timing differences do not represent shareholders' equity. It is very difficult to invoke the indefinite deferral argument on an asset that can be written off for income tax purposes in only three years. However, as has been argued, I do not believe that timing differences represent a liability even for Class 29 assets.

A third reason for supporting tax allocation on Class 29 assets was the frequency of their mention in the company interviews. It can be argued that the respondents prior training and experience has led them to believe that tax allocation is appropriate but there is no denying that they are also in a better position than I to evaluate the inner workings of income taxes on their companies.

#### Conclusion

I personally had great difficulty resolving this issue in a conclusive or convincing manner. There are at least three reasons for this. The first, is the adoption of a proprietary viewpoint which ultimately forces a segmentation of total equities into liabilities and owners' equity. There is no doubt in my mind that the government has a financial interest in each corporation, however, that interest is not clearly a liability nor an equity interest. The ultimate danger with any taxonomy and particularly one that only permits bifurcation is that some items do not neatly fit into one of the two divisions. The second reason is

closely connected to the first and is the tradition of calling income taxes an expense rather than a distribution of income. The third is the basic problem of allocations which lead to the impossibility of ever resolving the issue.

As stated, I believe that the decision on how to account for deferred income taxes is arbitrary. They arise primarily due to allocations and do not clearly fit into liability classification or a shareholders' equity classification. I must echo the words of Miller (1981)

"Some form of tax-effect accounting will probably survive in the years ahead. The selection of the basis to be applied is not as important as a requirement for the disclosure of adequate income tax details." (p.43)

It is to this important area that I turn my attention to.

Disclosure

The following recommendations on disclosure are believed to be desirable. The author, in making them, is not aware of any implementation problems that may be so severe as to warrant that these recommendations not be adopted. However, I believe that input from corporate management should be acquired before implementation and may necessitate some adjustment. In addition, unless otherwise stated, these recommendations are not conditional on the method ultimately chosen by the CICA to account for timing differences.

Currently public companies are required to disclose a reconciliation between their effective tax rate and the statutory tax rate. This recommendation requires that companies disclose the major permanent and rate differences that occurred during the year. It is recommended that this disclosure be extended to reconcile between the statutory tax rate and the current portion of income tax expense for the year. This would require disclosure of the major timing differences for the year. These timing differences should



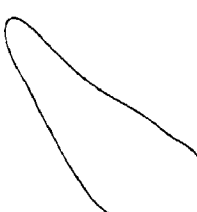
be segregated by major type with rapid write-off assets such as Class 29 assets disclosed separately.

As Chapter One indicated (Table 1-3) there are differences between the book value and tax value of assets and liabilities that are not currently reflected in a companies deferred income taxes. These timing differences can arise due to the issuance of flow-through shares, a Section 85(1) rollover, etc. There is no reason that I can think of that a user is only interest in the cash flow impact of timing differences as currently defined. As there is no present requirement to disclose the composition of accumulated deferred income taxes, it is recommended that companies provide a reconciliation between their net book value according to the financial statements and their net book value for income tax purposes. If possible, the difference relating to rapid write-off assets such as Class 29 assets should be disclosed separately.

An important observation from this study is that it is often not possible to determine the reason for an income statement drawdown. Because of this, users may not be in a position to understand the implications of a drawdown. Therefore, if some form of deferred income taxes is to re-

main it is recommended that disclosure of the reason for the drawdown be required, and if the company operates in more than one segment that the segment be disclosed. This would permit financial statement users to better assess the future cash flow implications of a drawdown.

A point of clarification is required when a company that suffers a loss decides to claim little or no CCA in order to minimize or eliminate the tax loss. This situation could be interpreted as either a drawdown due to a loss or a drawdown due to claiming less CCA than depreciation. As it is likely that the company would have claimed more CCA than depreciation if income was higher it is believed to be most appropriate to consider that the drawdown is related to the loss and not to inadequate CCA.



### Treatment of Loss Carryforwards

Current accounting practice permits a company to recognize the benefit of a loss carryforward, depending on the circumstances, in three different ways. These are: by setting

up an asset for the benefit if the company is virtually certain of realizing this benefit, by drawing down deferred income taxes, or if neither of these alternatives are possible then a company must delay recognition until actual realization, at which time it is shown as an extraordinary item.

If, as suggested in this study, some form of tax allocation remains, I believe that it is inconsistent to record deferred income taxes and not give recognition to a loss carryforward. Therefore, drawdowns in deferred income taxes should be permitted to continue.<sup>(73)</sup> Under the partial allocation method suggested in this thesis, all deferred income taxes would reverse prior to the expiry of the seven year loss carryforward period. Therefore, there is no need to consider a limitation on the size of the drawdown other than to say it can not exceed the amount of accumulated deferred income taxes.

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73 Although the researcher acquired little data during the research to indicate that companies are not drawing down deferred income taxes to recognize losses this possibility was suggested by a knowledgeable accountant. Therefore, it is believed that the accounting standard should require that drawdowns be recorded to recognize loss carryforwards.

As a loss carryforward is an existing condition whose realization is dependent on an uncertain future event, the earning of sufficient income in the carryforward period, it meets the definition of a contingent gain. There is minimal uncertainty as to the amount of potential benefit, except for changes in the income tax rate: the uncertainty relates almost entirely to the occurrence of the future event. It is recommended that accounting for loss carryforwards be treated as a contingency and as the potential realization would result in a gain then note disclosure and not accrual would be appropriate. Therefore, it is recommended that the Handbook section dealing with virtual certainty be eliminated and replaced with a section prohibiting the recording of an asset for the future tax benefits of loss carryforwards. If this is not accepted, then at a minimum companies should be required to indicate the portion, if any, of the loss carryforward they recognized due to having virtual certainty.

As it is reasonable to assume that financial statement users are interested in both future cash flows and future income, it is recommended that both the loss carryforward for accounting purposes and the loss carryforward for tax pur-

poses be disclosed in the notes to the financial statements.

### Subsequent Realization of Loss Carryforwards

The final issue to deal with is the accounting for the eventual realization of a loss carryforward. Currently, when a loss carryforward that has not previously been recognized is realized, it is recorded as an extraordinary item. The definition of an extraordinary item appears to conflict with the realization of a loss carryforward.

"Extraordinary items should include only gains, losses and provisions for losses which by their nature, are not typical of the normal business activities of the enterprise, are not expected to occur regularly over a period of years and are not considered as recurring factors in any evaluation of the ordinary operations of the enterprise." (Section 3480)


I do not believe that the realization of a previously unrecognized loss carryforward meets any portion of this definition. If income taxes are assumed to be typical of normal business activities then the benefit of a loss

carryforward should also be considered to be typical of normal business activities. It is also difficult to argue that the realization of unrecognized loss carryforwards are not expected to occur regularly over a period of years. The empirical data in Chapter Six (Table 6-6) would indicate that these items often do reoccur over a period of years. It is certainly hoped by management and shareholders that the realization of these items continue for several years until fully realized.

In my opinion, a more appropriate treatment given the potential re-occurring nature of these items is to require separate disclosure on the income statement as part of total income tax expense.(74)

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74 The accounting treatment that is being suggested is equivalent to that of an unusual item (3480.12).



CONCLUSION

This study has supplied evidence that losses are a very significant cause of the observed increase in deferred income tax drawdowns. It has not, however, ruled out the occurrence of the traditional involuntary drawdown. These involuntary drawdowns do occur but tend to be gradual and small in amount. The primary problem is that a financial statement user analyzing a consolidated financial statement can often not determine why the drawdown occurred, nor easily interpret the future impact of income taxes on a corporation.

It is not anticipated that this study will settle once and for all the debate concerning the recording of deferred income taxes. Arbitrary decisions must ultimately be decided by some political or arbitrary process. The economic reality is that timing differences do occur and are likely to continue occurring in the future. Therefore, some means other than a one figure measurement is required to communicate these differences to users as it is impossible to deny that they do influence future cash flows. As accountants are thought to be experts in the measurement and communi-

cation of economic data, we should seriously reconsider our practice in the area of accounting for corporate income taxes and make improvements as needed. I believe I have indicated several areas where there is considerable room for improvement and hope that the measurement issue will not stand in the way of communication.



APPENDIX A

PERMANENT DIFFERENCES

As was mentioned in chapter one, income tax expense is not based on pre-tax financial statement income (PTFS income), but rather on accounting income. A simple example will clarify the situation and indicate why permanent differences are considered in this analysis of deferred tax drawdowns.

Assume a company had PTFS income of \$1,000,000 in 1982. Included in this income were \$200,000 of dividends received on portfolio investments in Canadian companies. Also, assume the company's opening inventory was \$10,000,000 and that it recorded depreciation expense of \$2,000,000 and CCA of \$2,300,000. In such a situation the company's taxable income would be computed as follows:

PTFS INCOME	\$1,000,000
Less: Non-taxable dividends	(200,000)
3% inventory tax allowance	<u>(300,000)</u>
ACCOUNTING INCOME	500,000
Add depreciation	2,000,000
Subtract CCA	<u>(2,300,000)</u>
TAXABLE INCOME	<u>\$ 200,000</u>

With a tax rate of 40% the lower portion of the company's income statement would appear as follows:

PTFS Income	<u>\$1,000,000</u>
Tax expense- current	80,000
- deferred	<u>120,000</u>
	<u>200,000</u>
Net income	<u>\$ 800,000</u>

This example illustrates three different income figures. In this situation they range from \$200,000 for taxable income to \$1,000,000 for PTFS income, with accounting income falling in between at \$500,000. If opening inventory had been assumed to be \$50,000,000 instead of \$10,000,000, PTFS income of \$1,000,000 would result in an accounting loss of \$700,000 due to total permanent differences of \$1,700,000.

The CICA Handbook provides little discussion on permanent differences, however it does indicate that they do exist:

"Such items create no special problem in accounting for income taxes although, if the amounts are significant, they may need to be disclosed in the financial statements." (par. 3470.05)

As this section of the Handbook is not an italicized recommendation, companies have not been required to disclose

permanent differences that flow through its income statement. For years commencing on, or after, January 1, 1984, companies, whose securities are publicly traded, are required to disclose the components of those items that lead to a variation between "the relationship that that would normally be expected between income tax expense and pretax financial statement income" (par.3470.31). Therefore, companies are required to disclose those items that cause its effective tax rate to vary from its statutory tax rate.

In addition to permanent differences, rate differences can lead to a variation from the statutory tax rate and, thus, will have to be disclosed by public companies. Rate differences can occur when a company earns income in another country whose tax rate is different from that in Canada, or can be caused by the company having income that is taxed at rates different from the statutory tax rate (eg. manufacturing and processing profits). There is also the rate differences that arise when income is earned in various provinces.

In summary, although permanent differences do not create an accounting problem (there is no need for matching) they do create the problem of determining what income figure has

been used for determining total tax expense for the year. With the introduction of the 3% inventory tax allowance in 1977, a large difference between statement and accounting income is expected.

APPENDIX B

Mechanics of Recognizing Accounting Losses  
by Drawing Down Deferred Income Taxes

It is common to assume that declines in the accumulated deferred income tax account arise because of involuntary reversals in the timing of tax expenses or revenues and accounting expenses or revenues. For example, a company, that has claimed maximum CCA in prior years may find that the depreciation it must record for accounting purposes is in excess of the CCA available for the current year, if it had not made adequate purchases of fixed assets. This involuntary reversal will be referred to as a traditional drawdown or reversal as it is the type that is commonly used in textbooks to describe the process and need for recording deferred income taxes.

A drawdown can also occur when a company suffers an accounting loss. Because of the lack of previous discussion on this type of drawdown it might be useful to illustrate how this can occur. Exhibit B-1, shows a company that had

EXHIBIT B-1Drawdown Due to Loss

	19A	19B
Accounting income (loss)	\$10,000	(\$25,000)
Depreciation	4,000	4,000
Capital cost allowance	<u>(7,500)</u>	<u>0</u>
Taxable income	\$ 6,500	(\$21,000)
Taxes payable (40%)	<u>\$ 2,600</u>	<u>0</u>

Accumulated Deferred Taxes		
*Beginning of year	\$17,000	\$18,400
Addition (reduction) for year	<u>1,400</u>	<u>(7,650)</u>
End of year	<u>\$18,400</u>	<u>\$10,750</u>

\*represents \$41,000 of accumulated timing differences caused by CCA/depreciation differences. The average rate of accumulation is 41.46% (17,000 / 41,000) at the beginning of 19A and 41.35% (18,400 / 44,500) at the end of 19A.

Income Statement

	19A	19B
Income (loss) before tax	<u>\$10,000</u>	<u>(\$25,000)</u>
Taxes		
Current provision (recovery)	2,600	(2,600)
Deferred	<u>1,400</u>	<u>(7,650)**</u>
	<u>4,000</u>	<u>(10,250)</u>
Net income (loss)	<u>\$ 6,000</u>	<u>(\$14,750)</u>

\*\* Represents the drawdown in deferred tax to reflect the \$4,000 excess of depreciation over capital cost allowance and recognition of the tax loss carry-forward. See Exhibit B-2 for computations.

income of \$10,000 in 19A and a loss of \$25,000 in 19B. Permanent differences are not considered to simplify discussion, therefore, accounting income is equal to statement income. It is assumed that the company recorded \$4,000 of depreciation in both years and would continue to do so in the future. In 19A the company took the maximum CCA possible of \$7,500, but choose not to take any CCA in 19B, although it could have recorded up to \$6,000. At the beginning of 19A the balance in the accumulated deferred tax account was \$17,000 and represented \$41,000 of accumulated timing differences.

The year 19A portrays a build-up in deferred taxes. The company recorded \$3,500 more CCA than depreciation and, assuming a 40% tax rate, it would record a \$1,400 provision for deferred taxes. In 19B, the \$25,000 accounting loss is reduced to \$21,000 for tax purposes when depreciation is added back. Exhibit B-2, indicates how this loss may be recognized even though the full tax benefit of the loss is not yet realized. First, the company must carry the loss back one year, thus, \$6,500 of the loss is carried back resulting in a tax refund of \$2,600. The \$4,000 of depreciation in excess of CCA recorded in 19B is recognized by drawing down deferred taxes by \$1,654. The rate used is

the average rate of accumulation as the CICA requires that the deferral method be used for deferred income taxes. The remaining loss is available for application against future years income.

EXHIBIT B-2

Recognition of Accounting Loss

(\$25,000)		
Loss Carryback		Loss Carryforward
\$6,500	\$4,000	\$14,500
x 40%	x 41.35%	x 41.35%
<u>\$2,600</u>	<u>\$1,654</u>	<u>\$5,996</u>
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There is clearly some benefit relating to this \$14,500 of tax loss carry-forward. In economic terms, the value of the tax carry-forward benefit would be related to the probability of generating sufficient taxable income in the carry-forward period, the timing of that income and the tax rate in effect when the income is generated. As the net value is based on future events that have uncertainty, the accounting question that arises is whether we should recognize this benefit before we realize it, and if so, how?



Assuming the company does not meet the stringent conditions of virtual certainty, the company is allowed under paragraph 3470.48 to recognize the tax benefit of the carry-forward by drawing down its accumulated deferred tax by the lesser of:

1. The balance in the deferred tax account ( $\$18,400 - 1,654 = \$16,746$ ).
2. The amount of the timing differences that could be reversed in the loss carry-forward period times the average rate of accumulation ( $\$4,000 \times 5 \times 41.35\% = \$8,270$ ).
3. The amount of the loss carry-forward times the average rate of accumulation ( $\$14,500 \times 41.35\% = \$5,996$ ).

In this example the company should draw down its deferred tax by \$5,996 to reflect the benefit of the loss carry-forward. Thus, in 19B, the company would recognize the full benefit of its loss and report a net loss, after tax, of \$14,750. The reader of the statements would notice a large drawdown in the deferred tax account, yet there is no outflow of economic resources to the government with re-

gards to deferred taxes. The only disclosure that would be required under current Handbook provisions is an explanation of why the company's effective tax rate of 41% differs from the assumed statutory tax rate of 40%. This assumes the difference is material. Because the full tax benefit of the loss has been recognized in the financial statements the firm is not required to disclose the \$14,500 of loss carry-forward that has not yet been realized.

To summarize, the \$25,000 accounting loss can be separated into three components.

1. A \$6,500 carry-back that results in a refund of \$2,600 of income taxes previously paid. (75)
2. A \$4,000 reversal in timing differences in the current year due to recording depreciation while choosing not to claim any capital cost allowance. This gives rise to a drawdown in deferred income taxes of \$1,654 to re-

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75 Management may, at its option, increase the amount of the loss carry-forward by amending the 19A tax return to claim no CCA. In this example this would mean a smaller tax loss carry-forward but would not change the journal entry.

flect the reversal of timing differences that occurred in this period.

3. A \$5,996 drawdown in deferred income tax to recognize the loss carry-forward. This is based on the fact that management can decide not to take CCA in future years. For example, in 19C management could decide to claim no CCA. As they must record depreciation expense, another reversal in timing differences will occur. Therefore, the drawdown for the loss carry-forward is based on the fact that even if the company never records a taxable profit in the future, it will still have timing difference reversals, at least to the extent of the loss carry-forward.

The preceding example was simple and intended to illustrate what could occur. A few additional points will now be discussed. Let us assume that in 19C the company becomes very profitable, earning \$45,000, after a depreciation charge of \$4,000 and management decides to take \$6,000 in CCA. Exhibit B-3 shows that the amount of the drawdown relating to the loss carry-forward recognized in 19B is reinstated in

EXHIBIT B-3Realization of Tax Loss

	19C
Accounting income	\$45,000
Depreciation	4,000
Capital cost allowance	<u>(6,000)</u>
	43,000
Loss carry-forward	<u>(14,500)</u>
	<u>28,500</u>
Taxes payable (40%)	<u>11,400</u>

Accumulated Deferred Taxes

Beginning of year	\$10,750
Addition for year	800
Reinstatement of drawdown due to loss	<u>5,996*</u>
End of year	<u>\$17,546</u>

Income Statement

Income before tax	\$45,000
Taxes	
Current provision	11,400
Deferred	<u>6,796</u>
	<u>18,196</u>
Net income	<u>\$26,804</u>

\* It is not clear from the Handbook whether the dollar figure to be reinstated is \$5,996, the amount originally drawn down, or \$5,800, which is the timing differences reinstated, times the current tax rate (14,500 x 40%).

19C, when it is realized. Therefore, the following entries may be made relating to income taxes for 19C.


Current tax expense	11,400	
Deferred tax expense	6,796	
Taxes payable		11,400
Accumulated deferred taxes		6,796

If, for some reason such as having no accumulated deferred income taxes, the company had not recognized the benefit of the loss carryforward in 19B there would have been disclosure in the 19B financial statements of the amount of the unrecognized loss carryforward (amount and expiry date). In 19C, the profits of the firm would have been sufficient to allow recognition of the loss carryforward which would have been shown on the income statement as an extraordinary item. Assuming a continuation of a 40% statutory tax rate, this would imply total income tax expense of \$18,000 (\$17,200 current and \$800 deferred) and an extraordinary gain of \$5,800.

APPENDIX CCOMPANIES INCLUDED IN THE SAMPLE

1. AHED CORP.
2. ALGONQUIN MERCANTILE CORP
3. ANDRES WINES LTD.
4. ASTRAL BELLEVUE PATHE INC.
5. ATCO LTD.
6. BARBÉCON INC.
7. BLACK PHOTO CORP. LTD
8. BOMAC BATTEN LTD.
9. BOMBARDIER INC.
10. BUDD CANADA INC.
11. CANADA MALTING CO. LTD.
12. CANADIAN FOREMOST LTD.
13. CANADIAN HYDROCARBONS
14. CANADIAN MARCONI CO.
15. CANADIAN PACIFIC LTD.
16. CASSIDY'S LTD.
17. CELANESE CANADA INC.
18. CHUM LTD.
19. CONSOLIDATED-BATHURST INC.
20. CONSOLTEX CANADA INC.

21. CONSUMERS GLASS CO. LTD.
22. COOPER CANADA LTD.
23. CRESTBROOK FOREST INDUSTRIES
24. DALMYS (CANADA) LTD.
25. DOFASCO INC.
26. DOVER INDUSTRIES LTD.
27. DUPONT CANADA INC.
28. DYLEX LTD.
29. ELECTROHOME LTD.
30. FEDERAL PIONEER LTD.
31. FINNING TRACTOR & EQUIPMENT CO. LTD.
32. FIRAN CORP.
33. GESCO INDUSTRIES INC.
34. GREY GOOSE CORP. LTD.
35. HARDING CARPETS LTD.
36. HARRIS STEEL GROUP INC.
37. HARVEY WOODS LTD.
38. HAYES-DANA INC.
39. HERITAGE GROUP INC. (THE)
40. HOWDEN D. H. & CO. LTD.
41. INGLIS LTD.
42. INLAND NATURAL GAS
43. IRWIN TOY LTD.
44. JANNOCK LTD.

45. KELLY, DOUGLAS & CO. LTD.
  46. KELSEY-HAYES CANADA LTD.
  47. LAMBDA MERCANTILE CORP.
  48. MAHER INC.
  49. MARITIME ELECTRIC COMPANY LTD.
  50. MARITIME TELEGRAPH & TELEPHONE CO. LTD.
  51. MARKS & SPENCER CANADA INC.
  52. MCGRAW-HILL RYERSON LTD.
  53. NORMICK PERRON INC.
  54. PACIFIC NORTHERN GAS LTD.
  55. QUEBEC-TELEPHONE
  56. REICHHOLD LTD.
  57. REVELSTOKE COMPANIES LTD.
  58. ROBINSON LITTLE & CO. LTD.
  59. ROTHMANS OF PALL MALL CANADA LTD.
  60. SILVERWOOD INDUSTRIES LTD.
  61. SIMPSONS-SEARS LTD.
  62. SOBEYS STORES LTD.
  63. SOMERVILLE BELKIN INDUSTRIES LTD.
  64. STEINBERG INC.
  65. STRATHCONA RESOURCES INDUSTRIES
  66. TELE-METROPOLE INC.
  67. TRANS CANADA GLASS LTD.
  68. TRANS MOUNTAIN PIPE LINE CO. LTD.
- 



69. UAP INC.
70. UNION CARBIDE CANADA LTD.
71. UNITED TIRE & RUBBER CO. LTD.
72. VS SERVICES LTD.
73. VAN DER HOUT ASSOCIATES LTD.
74. VULCAN INDUSTRIAL PACKAGING LTD.
75. WAFERBOARD CORP. LTD.
76. WAJAX LTD.
77. WESTCOAST TRANSMISSION CO. LTD.
78. WESTMILLS CARPETS LTD.
79. WHITE PASS & YUKON CORP. LTD. (THE)
80. WOODWARD STORES LTD.

## APPENDIX D

## COLLECTION SHEET FOR ANNUAL REPORT DATA

IN 000's

NAME OF COMPANY _____	YEAR END _____				
	19	19	19	19	19
<u>INCOME STATEMENT</u>					
REVENUE	_____	_____	_____	_____	_____
DEPR., DEPL. & AMORT.	_____	_____	_____	_____	_____
INC. BEF. TAX	_____	_____	_____	_____	_____
INCOME TAX					
CURRENT	_____	_____	_____	_____	_____
DEFERRED	_____	_____	_____	_____	_____
TOTAL	_____	_____	_____	_____	_____
INC. AFT. TAX	_____	_____	_____	_____	_____
<u>EXTRAORDINARY ITEM</u>					
GROSS	_____	_____	_____	_____	_____
TAX	_____	_____	_____	_____	_____
NET	_____	_____	_____	_____	_____
NET INCOME	_____	_____	_____	_____	_____
MINORITY INTEREST (expense)	_____	_____	_____	_____	_____
EQUITY PICK-UP (revenue)	_____	_____	_____	_____	_____

BALANCE SHEET

INC TAX RECOVERABLE	_____	_____	_____	_____	_____
INVENTORY	_____	_____	_____	_____	_____
DEF. TAX	_____	_____	_____	_____	_____
TOTAL C/A	_____	_____	_____	_____	_____
DEF. TAX	_____	_____	_____	_____	_____
P.P & E	_____	_____	_____	_____	_____
ACC. DEP.	_____	_____	_____	_____	_____
NET	_____	_____	_____	_____	_____
LAND	_____	_____	_____	_____	_____
NET PL. & EQUIP	_____	_____	_____	_____	_____
GOODWILL	_____	_____	_____	_____	_____
OTHER ASSETS	_____	_____	_____	_____	_____
TOTAL ASSETS	_____	_____	_____	_____	_____
DEF. TAXES	_____	_____	_____	_____	_____
C/L	_____	_____	_____	_____	_____
LONG TERM DEBT	_____	_____	_____	_____	_____
DEF. TAXES	_____	_____	_____	_____	_____
SHAREHOLDERS' EQU.	_____	_____	_____	_____	_____
CAPITAL STOCK	_____	_____	_____	_____	_____
RET. EARN.	_____	_____	_____	_____	_____
TOT. LIAB & C/E	_____	_____	_____	_____	_____

OTHER

FIXED ASSET ADD.	_____	_____	_____	_____	_____
PROCEEDS FROM DISP.	_____	_____	_____	_____	_____
NON FUND EXPENSES	_____	_____	_____	_____	_____
DEF. TAX (SCFP)	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
PREFERRED DIV.	_____	_____	_____	_____	_____
ACCOUNTING CHANGE?	_____	_____	_____	_____	_____
TYPE	_____	_____	_____	_____	_____
OPENING D. T. CUR	_____	_____	_____	_____	_____
L.T.	_____	_____	_____	_____	_____
YEARS INC. EFFECT	_____	_____	_____	_____	_____
OTHER _____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
ENDING D. T. L.T.	_____	_____	_____	_____	_____
CUR	_____	_____	_____	_____	_____
WAS THERE TAKEOVER	_____	_____	_____	_____	_____
D.T. ON TAKEOVER	_____	_____	_____	_____	_____
SUB'S TOTAL ASSETS	_____	_____	_____	_____	_____
NOTES					
1) RECONCILIATION	_____	_____	_____	_____	_____
-ONLY MENTION	_____	_____	_____	_____	_____
-NOTHING	_____	_____	_____	_____	_____

2) INVEST. T. C.					
-FLOW THROUGH	_____	_____	_____	_____	_____
-REDUCE ASSET	_____	_____	_____	_____	_____
-SET UP D.T.	_____	_____	_____	_____	_____
3) DEPREC. POLICY					
-STR. LINE	_____	_____	_____	_____	_____
-ACCELERATED	_____	_____	_____	_____	_____
-BOTH	_____	_____	_____	_____	_____
4) AMOUNT OF D.T. NOT SET UP ON F/S	_____	_____	_____	_____	_____
5) LOSS CARRYFORWARD	_____	_____	_____	_____	_____
-CANADIAN OPERATING	_____	_____	_____	_____	_____
-INVEST T.C.	_____	_____	_____	_____	_____
-FOREIGN INCOME	_____	_____	_____	_____	_____
6) STD. NOTE	_____	_____	_____	_____	_____

OTHER DATA

19\_\_

19\_\_

19\_\_

19\_\_

19\_\_

APPENDIX E

## COMPANY-YEARS NOT INCLUDED IN THE DATA BASE

MISSING COMPANIES AND YEARS*	EXPLANATION
ASTRAL BELLEVUE PATHE INC. 1973, 1974 & 1975	Company was not listed on the TSE until October 12, 1979. It was listed on the Montreal Stock Exchange on February 21, 1974.
BOMBARDIER INC. 1973, 1974	As of February 1, 1976 Bombardier was purchased by MLW-Worthington. Data prior to 1975 for MLW-Worthington was not use as the combined company was very different from MLW-Worthington.
CANADIAN FOREMOST LTD., 1973, 1974	Not listed on the TSE until August 29, 1978.
FIRAN CORP. 1973, 1974, 1975 & 1976	Formed November 30, 1976 by amalgamation (pooling) of Firan International Limited and Glendan Corp. Since it was not clear who the acquirer was, data was not collected prior to 1977.
LAMBDA MERCANTILE 1973, 1974	The company was listed on the TSE as of December 31, 1974, but at present I have been unable to locate the one missing annual report.

MISSING COMPANIES AND YEARS*	EXPLANATION
ROTHMANS OF PALL MALL 1974	In 1976 the company changed their year-end from June 30 to March 31. For both the period ending June 30, 1975 and March 31, 1976 the company prepared income statements for a twelve month period. To avoid having overlapping data, the financial data from the June 30, 1975 annual report was discarded.
WAFERBOARD 1973, 1974	The company was not listed on the TSE until March 15, 1978.

\* For this column, year refers to the year assigned for the purpose of data analysis and is not necessarily the same as the actual year end of the company.



APPENDIX F

## EVALUATION OF COMPUTATION OF ADJUSTED INCOME

One significant problem in determining the relationship between income and deferred income tax is the computation of accounting income. To compute this figure it is necessary to eliminate any permanent differences. These were determined, to the extent possible, from a reading of each companies' financial statements and consideration of the three percent inventory allowance.

If the adjustments lead to an income figure (adjusted income) that more closely approximates accounting income, then one would expect two outcomes. First, that the variance in the effective tax rates is less when accounting income is used in the denominator, and second, that the effective tax rate is closer to the statutory tax rate when adjusted income is used in the denominator.(76) Consistent with the work of Thornton (1985), those companies having

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76 As defined in Chapter One, the effective tax rate is computed as follows:

$$\frac{\text{Total Income Tax Expense for the Year}}{\text{Income Before Income Tax}}$$

negative effective tax rates, on an unadjusted or adjusted basis have been eliminated from the evaluation. Also, the remaining observations have been split into two groups based on whether income was positive or negative. This was considered necessary as Thornton (1985) suggests that the behaviour of effective tax rates is different when companies have negative income rather than positive income.

For all observations with an effective tax rate, on an adjusted basis, less than zero or greater than 0.6 the annual report was reviewed again.

In nine cases the sign of the effective tax rate changed due to the adjustment with only two of these being a switch from positive to negative. This is a desirable outcome as a negative figure suggests a lack of correspondence between income and taxes.

Exhibit F-1(a) and F-1(b) provide effective tax rate computations for those companies that had positive income, while Exhibits F-2(a) and F-2(b) provide this data for those companies with negative income.

In general, the adjustments made to income led to effective tax rates that are more reflective of the statutory tax rate. One observation in 1982, Electrohome, had an effective tax rate after adjustment of 718.43%. If this observation is removed, then in all four years for positive income companies, both the mean and the median of the adjusted effective tax rates are in the range of 44%-51%.

The results for companies that had negative income are not as clear. However, as would be expected, in all four years the mean of the adjusted effective tax rate dropped. The diversity of the means over the years, although partially influenced by the small sample sizes, indicates that when negative income is encountered the behaviour of income taxes is clouded by the interaction of loss carryforwards and carrybacks. This provides added support for the findings of Thornton (1985).

In conclusion, it appears that the adjustments to the income reported on the financial statements produce numbers more consistent with the companies' accounting income.

TABLE F-1(a)

TOTAL INCOME TAX EXPENSE AS A PERCENTAGE OF  
INCOME BEFORE INCOME TAX AND EXTRAORDINARY INCOME  
(POSITIVE INCOME BEFORE TAX)

	1980	1981	1982	1983
SAMPLE SIZE	71	68	50	67
MEAN	40.41%	42.98%	41.44%	41.24%
STANDARD DEVIATION	11.44%	21.89%	14.04%	11.06%
MEDIAN	41.58%	41.81%	41.19%	40.50%
MAXIMUM VALUE	82.14%	200.00%	107.52%	79.00%
MINIMUM VALUE	4.99%	1.42%	5.62%	10.06%

TABLE F-1(B)

TOTAL TAX EXPENSE AS A PERCENTAGE OF  
ADJUSTED INCOME \*  
(POSITIVE INCOME BEFORE TAX)

	1980	1981	1982	1983
SAMPLE SIZE	71	66	50	67
MEAN	48.00%	46.65%	59.93%	48.46%
STANDARD DEVIATION	17.25%	8.37%	95.63%	14.13%
MEDIAN	47.28%	49.03%	46.80%	47.64%
MAXIMUM VALUE	143.75%	77.94%	718.43%	122.22%
MINIMUM VALUE	8.83%	.21.38%	14.89%	16.26%

\*Adjusted income is income before income tax and extraordinary items minus three percent of opening inventory, plus or minus any other permanent differences identified in the financial statement review.

TABLE F-2(a)

TOTAL INCOME TAX EXPENSE AS A PERCENTAGE OF  
INCOME BEFORE INCOME TAX AND EXTRAORDINARY INCOME  
(NEGATIVE INCOME BEFORE TAX)

	1980	1981	1982	1983
SAMPLE SIZE	5	5	23	6
MEAN	48.46%	63.98%	49.48%	61.56%
STANDARD DEVIATION	26.89%	41.46%	23.40%	36.73%
MEDIAN	60.97%	45.19%	46.82%	43.26%
MAXIMUM VALUE	73.68%	137.91%	112.30%	112.31%
MINIMUM VALUE	12.50%	42.84%	12.07%	28.09%

TABLE F-2(B)

TOTAL TAX EXPENSE AS A PERCENTAGE OF  
ADJUSTED INCOME \*  
(NEGATIVE ADJUSTED INCOME BEFORE TAX)

	1980	1981	1982	1983
SAMPLE SIZE	6	9	23	8
MEAN	32.90%	45.76%	36.99%	46.20%
STANDARD DEVIATION	15.23%	7.68%	12.29%	17.82%
MEDIAN	34.23%	44.86%	38.95%	40.75%
MAXIMUM VALUE	51.52%	61.31%	54.38%	77.16%
MINIMUM VALUE	12.08%	37.99%	9.93%	20.06%

\*Adjusted income is income before income tax and extraordinary items minus three percent of opening inventory, plus or minus any other permanent differences identified in the financial statement review.

APPENDIX G

## REGRESSION ANALYSIS

The purpose of this appendix is to outline the procedures used in the regression analysis and to consider the results of this analysis.

Determination of VariablesDependent Variable

The dependent variable used in the regression analysis was DTEPERAS. As indicated in Chapter Four, it is computed by dividing deferred income tax expense by the company's total assets for that year.

Independent Variables

Six independent variables were identified from the literature review for use in the regression analysis. One of these, INCPERAS, was defined in Chapter Four, but is repeated here for convenience.

$$\text{INCPERAS} = \frac{\text{ADJUSTED INCOME}}{\text{TOTAL ASSETS}}$$

The five other variables were computed in the following manner.

Growth in Fixed Asset Additions (GROWTH): This variable serves a similar purpose to the variable GROW that was defined in Chapter Four. It was computed as follows:

$$\text{GROWTH} = \frac{\text{Net Fixed Asset Additions X Year} - \text{Depreciation Expense}}{\text{Total Assets}}$$

where Year = 1 if 1980 or 1981  
Year = 1/2 if 1982 or 1983.

The purpose of the change in computation was to more readily interpret the variable in the analysis and to have its basis of computation similar to that of the dependent variable.

Prior Growth in Fixed Asset Additions (PRIGROWTH): This variable serves a similar purpose to the variable PRIGROW that was defined in Chapter Four. It was computed as follows:

$$\text{PRIGROWTH} = \frac{\text{Net Fixed Asset Additions of the Prior Year} - \text{Depreciation Expense}}{\text{Total Assets}}$$

Again, the purpose of the change in computation was to more readily interpret the variable in the analysis and to have its basis of computation similar to that of the dependent variable.

Economic Life of Assets (ELA): Livingstone indicates that the service life of an asset influences the probability of a drawdown. That is the shorter the service life of the assets the greater the probability of a drawdown. This variable could at best only be estimated if the researcher knew every asset that was purchased by the company. As this is clearly impossible, two options remain. First, the use of notes to the financial statements that describe a company's depreciation policy. The basic problem here is that it is quite common to list several assumed economic lives for various assets. The second possibility is to divide gross plant and equipment (excluding land) by depreciation expense for the year. Thus, economic life of assets was defined as follows:

$$\text{ELA} = \frac{\text{Year-end plant and equipment (excluding land)}}{\text{Depreciation expense}}$$

Class 29 Assets (CLASS29): As is commonly known, certain assets used "in Canada primarily in the manufacturing or



processing of goods for sale or lease" (ITR Schedule 11) are permitted accelerated write off as a Class 29 asset. As has been mentioned it is impossible to determine from public data the speed of tax deductibility that exists on assets purchased by companies, however, it is possible to determine those companies that are most likely to be acquiring assets with class 29 treatment. This can be accomplished by reviewing a company's reconciliation between the effective tax rate and the statutory tax rate to determine the magnitude of their manufacturing and processing (M&P) tax credit. (77) As this was not required disclosure until 1984, in many cases it was necessary to assume that what was true in 1984 was also the situation in 1980-1983. Operationally, a company was defined as a Class 29 company if its M&P credit averaged three percent or larger over the period for which M&P data was available.

Accounting Loss (LOSS): As it is anticipated that accounting income will only have an important influence on deferred income tax behaviour when it is negative, it was necessary to develop a variable that would take this into account.

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77 The maximum M & P tax credit is six percent.

Therefore, the variable LOSS was developed. The variable is set to zero when accounting income is positive and takes on the value of INCPERAS when accounting income is negative. This permits a break point or spline at zero accounting income.

#### Summary of Regression Model

The regression model is summarized as follows:

$$\Delta\text{TEPERAS} = f(\text{GROWTH}, \text{INCPERAS}, \text{ELA}, \text{PRIGROWTH}, \text{CLASS29}, \text{LOSS})$$

The anticipated results from this analysis are as follows:

1. Drawdowns are a function of GROWTH and LOSS. That is drawdowns can not be explained simply by use of a variable indicating lack of adequate growth in fixed assets.
2. Buildups in deferred income tax are primarily a function of GROWTH.
3. The magnitude of build-ups in deferred taxes are reasonably well explained by the traditional model of de-

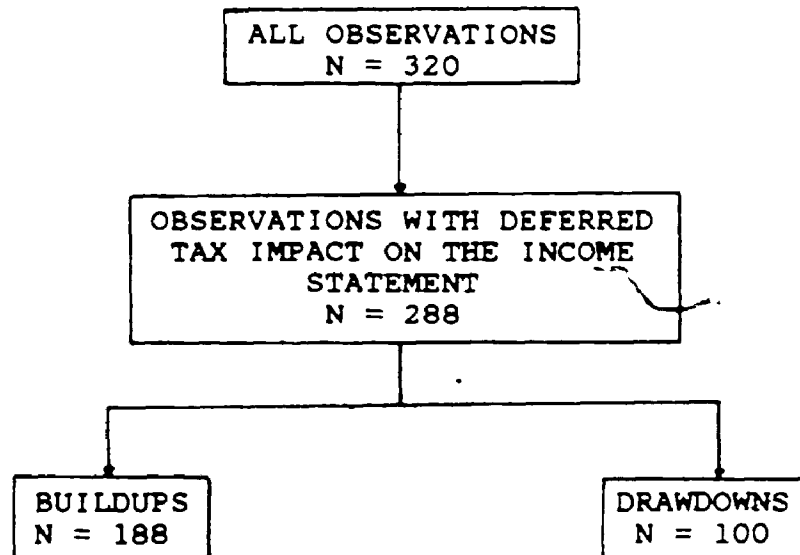
ferred income taxes, while the magnitude of drawdowns is best explained by the size of accounting losses.

These results would lead one to question the appropriateness of current practice with respect to deferred income taxes, as well as our interpretation of drawdowns. It would lead one to ask if deferred taxes are simply a deferred income account to be drawn down in poor economic times.

#### Nature of Regression Runs

Table G-1 provides an overview of how the 320 observations for the period 1980-83 were used in the regression runs. As the purpose of the regression analysis is to consider the income statement behaviour of deferred income tax, 32 observations having no income statement impact were discarded. Regressions were run by year for all the remaining observations and then the sample was divided into two groups based on the occurrence of a drawdown or buildup. This partitioning was considered necessary to verify that the factors associated with drawdowns were different from buildups.

TABLE G-1  
Overview of Regression Analysis



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Table G-2 provides summary data of the regression runs. The first group of runs includes all variables that were identified in the prior discussion. In not one of the four years were INCPERAS, ELA or PRIGROWTH significant at the 0.05 level. LOSS was significant at the 0.01 level in three years and at 0.05 level in the one other year. GROWTH was significant at the 0.01 level in 1980 and 1981, but was not considered significant in either of the two other

TABLE G-2  
RESULTS OF REGRESSION ANALYSIS  
ALL OBSERVATIONS HAVING A DEFERRED TAX EXPENSE ENTRY

YEAR	SAMPLE SIZE	VARIABLES										ADJUSTED R-SQUARE	SKEWNESS	KURTOSIS
		INTERCEPT	GROWTH	INCPERAS	EIA	PRIGROWTH	CLASS29	LOSS	LOSS	LOSS	LOSS			
1980	72	-0.00086 (0.225)	0.09266** (3.883)	0.01394 (0.849)	0.00021 (1.339)	0.02685 (0.933)	-0.00102 (0.437)	0.0925** (3.923)	0.560**	0.328	2.716			
1981	73	0.00065 (0.176)	0.10272** (4.092)	0.00244 (0.129)	0.00001 (0.018)	0.02127 (0.806)	0.00727** (2.732)	0.51736** (7.958)	0.629**	1.117	2.347			
1982	73	-0.00609 (1.280)	0.10272 (1.163)	0.04049 (1.766)	0.00009 (0.554)	0.05922 (1.770)	0.00140 (0.437)	0.12585* (2.421)	0.439**	-0.661	1.816			
1983	70	0.00166 (0.391)	0.07334 (1.004)	-0.00138 (0.080)	0.00006 (0.393)	0.05923 (1.907)	0.00372 (1.074)	0.37374** (7.559)	0.612**	0.985	1.115			
1980	72	0.00415** (2.804)	0.10534** (5.001)					0.10685** (7.789)	0.564**	0.349	2.497			
1981	73	0.00543** (3.551)	0.09521** (5.192)					0.48884** (9.374)	0.603**	1.166	2.911			
1982	73	0.00288 (1.522)	0.17143** (2.708)					0.20029** (5.637)	0.412**	-0.768	1.890			
1983	70	0.00543** (3.453)	0.10349 (1.624)					0.38870** (9.522)	0.605**	1.098	1.072			

\* Significantly different from zero at  $\alpha = 0.05$   
\*\* Significantly different from zero at  $\alpha = 0.01$

years. (78) CLASS29 was only significant in 1981 (0.01 level). These data are consistent with the predictions and indicate that fixed asset additions and accounting income are the primary influence on deferred income tax behaviour.

The analysis of all observations was repeated but only GROWTH and LOSS were used as independent variables. In all four years LOSS was significant at the 0.01 level and the parameter estimates remained similar to that of the prior runs. The variable GROWTH was significant at the 0.01 level in all years except 1983.

The residuals were analyzed and indicated that particularly in the years 1980 and 1982 a tendency for one or two companies that had very large residuals, to considerably influence the results. This would explain why the parameter estimates for LOSS are lower than would have been anticipated. The skewness and kurtosis measures indicate some weakness in the assumption of normality for the residuals. A review of the normal probability plot reinforces this

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78 The analysis was also conducted by not adjusting fixed asset additions for the impact of the half-year rule. The results were basically the same.

concern although it is difficult to establish a consistent pattern over the four years. What all of this suggests is that there are some items in any particular company in any particular year that leads to unusual behaviour in deferred income tax and thus a non-normal outcome of the variables. To consider whether this may be a company specific phenomena, the five highest and five lowest residuals were identified, by company, for each year. Out of a possibility for 20 (5 X 4) different companies to be represented in each group, there were 19 different companies in the lowest residual group and 17 different companies in the highest group. Therefore, it was concluded that there was not a tendency for any company to be a consistent outlier.

The next step was to separate the observations into buildups and drawdowns. When only buildups were considered it was expected that GROWTH would be the only significant variable in each year. To some extent this was true but GROWTH was not significant in 1983. Because of some concern about the distribution of the variables, Spearman Rank Correlation Coefficients were computed to investigate the association between GROWTH and DTEPERAS. The results are surprising and are presented in Table G-3. While there is a significant and positive association between GROWTH and

TABLE G-3

SPEARMAN RANK CORRELATION COEFFICIENTS BETWEEN  
GROWTH AND DTEPERAS FOR THOSE OBSERVATIONS  
HAVING BUILDUPS

YEAR	SAMPLE SIZE	SPEARMAN CORRELATION COEFFICIENT	PROB >  0
1980	58	0.46686	0.0002
1981	55	0.59913	0.0001
1982	34	0.38915	0.0229
1983	41	-0.04286	0.7902

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DTEPERAS in 1980-1982, there is basically no association between the two variables in 1983. Clearly, some other factors must be influencing this relationship in 1983 but no indication of this could be found by the regression technique.

When only those observations having drawdowns are considered the dominant variable is LOSS which was significant at the 0.01 level in all four years, while GROWTH was significant at the 0.05 level in 1983 only (Table G-4). If all sample companies could recognize the full benefit of their losses by drawing down deferred income taxes we would ex-



TABLE G-4  
 RESULTS OF REGRESSION ANALYSIS  
 OBSERVATIONS HAVING DEFERRED INCOME TAX DRAWDOWNS

YEAR	SAMPLE SIZE	VARIABLES				ADJUSTED R-SQUARED	SKEWNESS	KURTOSIS
		INTERCEPT	GROWTH	LOSS				
1980	14	-0.00512** (3.856)	-0.02658 (0.948)	0.09127** (13.708)	0.935**	-1.264	1.686	
1981	18	-0.00324 (1.057)	0.00827 (0.162)	0.34992** (5.355)	0.655**	0.071	4.688	
1982	38	-0.00933** (3.296)	0.10711 (1.415)	0.11042** (2.999)	0.235**	-1.027	1.400	
1983	29	-0.00209 (1.502)	0.11910** (2.484)	0.35986** (17.826)	0.932**	0.183	0.429	

pect the parameter estimate for LOSS to have a value of approximately 0.40 to 0.50. That is, a value approximating the average rate of accumulation. If some of the companies could not recognize the full benefit then we would expect a lower value for this parameter and a significant and negative value for the intercept. The results are consistent with the later condition. In 1980 and 1982 the parameter estimates for LOSS are much lower than expected and the intercept term is negative and significant, where as, in 1981 and 1983 the parameter estimates approach the anticipated value and the intercept, while still negative, is not significant. This suggests that at least some of the sample companies could not recognize the full benefit of the loss by drawing down deferred income taxes. Again the residuals were considered and as before there was a departure from normality in all years except 1983.

Because of the unexpected absence of significance for the variable GROWTH only those observations having a drawdown and positive accounting income were selected for the next test. It would be expected that these observations would have a significant and positive association between GROWTH and DTEPERAS. Therefore, a Spearman Rank Correlation Coefficient Test was run, by year, between these two variables.

TABLE G-5

SPEARMAN RANK CORRELATION COEFFICIENTS BETWEEN GROWTH  
AND DTEPERAS FOR THOSE OBSERVATIONS HAVING  
DRAWDOWNS AND POSITIVE ACCOUNTING INCOME

YEAR	SAMPLE SIZE	SPEARMAN - CORRELATION COEFFICIENT	PROB >  0
1980	10	-0.06667	0.8548
1981	9	-0.01667	0.9661
1982	17	-0.03186	0.9034
1983	20	0.58496	0.0067

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The results (Table G-5) are only consistent with the prediction in 1983. In the three other years the correlations are slightly negative and insignificant. This suggests that there are factors other than lack of growth causing these drawdowns to occur.

#### CONCLUSIONS

Despite some potential problems with the residuals, it appears that accounting losses are a primary cause of deferred tax drawdowns, while accounting income has little discernible impact on buildups. Buildups appear to be pri-

marily influenced by growth in fixed asset additions, yet there is little apparent association between growth and drawdowns in those cases where accounting income is positive. This suggests that other factors, quite possibly accounting losses in some of the subsidiaries are causing the drawdowns. This lack of symmetry in the factors influencing buildups and drawdowns leads one to seriously question the appropriateness of deferred tax accounting, at least in recessionary periods.

## APPENDIX H

SAMPLE COMPANIES HAVING AT LEAST ONE DRAWDOWN  
IN THE YEARS 1980-83

COMPANY	YEAR			
	1980	1981	1982	1983
1. AHED CORP.	(**)	0	0	0
2. ALGONQUIN MERCANTILE CORP				*
3. ANDRES WINES LTD.			*	
4. ASTRAL, BELLEVUE PATHE INC.		*	**	
5. ATCO LTD.		*	*	*
6. BARBECON INC.			*	
7. BOMAC BATTEN LTD. (Now named Prinicpal Neo-Tech)			(**)	(**)
8. BOMBARDIER INC.	*	**		
9. BUDD CANADA INC.			(*)	**
10. CANADA MALTING CO. LTD.				*
11. CANADIAN FOREMOST LTD.			(**)	
12. CANADIAN MARCONI CO.				*
13. CANADIAN PACIFIC LTD.				*
14. CASSIDY'S LTD.		*	(*)	*
15. CELANESE CANADA INC.			**	
16. CONSOLTEX CANADA INC.			*	*
17. COOPER CANADA LTD.	*			
18. CRESTBROOK FOREST INDUSTRIES			**	(*)
19. DOVER INDUSTRIES LTD.	0			*
20. DUPONT CANADA INC.	*		*	

21. DYLEX LTD.	*		*
22. ELECTROHOME LTD.	*	**	*
23. FEDERAL PIONEER LTD.		(*)	*
24. FINNING TRACTOR & EQUIPMENT CO. LTD.		*	(**) *
25. GESCO INDUSTRIES INC.		(**)	0
26. HARDING CARPETS LTD.	*	(**)	0
27. HARVEY WOODS LTD.	*	*	0
28. HAYES-DANA INC.		*	**
29. HERITAGE GROUP INC. (THE) (Now named Schneiders Inc.)	*	*	*
30. INGLIS LTD.	*	*	*
31. IRWIN TOY LTD.		*	
32. JANNOCK LTD.		(*)	*
33. KELLY, DOUGLAS & CO. LTD.	*	*	
34. LAMBDA MERCANTILE CORP.	*	*	
35. MAHER INC.		*	*
36. MCGRAW-HILL RYERSON LTD.	*		
37. NORMICK PERRON INC.	**	(**)	(**)
38. QUEBEC-TELEPHONE			*
39. REICHOLD LTD.		**	
40. REVELSTOKE COMPANIES LTD.	*	(**)	*
41. ROBINSON LITTLE & CO. LTD. (in receivership)	*	(**)	
42. SILVERWOOD INDUSTRIES LTD.	**	(*)	
43. SIMPSONS-SEARS LTD.		*	
44. SOMERVILLE BELKIN INDUSTRIES LTD.			*
45. STEINBERG INC.		*	**
46. TELE-METROPOLE INC.		*	

47. TRANS CANADA GLASS LTD.	*	*	*
48. TRANS MOUNTAIN PIPE LINE CO. LTD.	*	**	**
49. UAP INC.			*
50. UNION CARBIDE CANADA LTD.		(**)	(**)
51. UNITED TIRE & RUBBER CO. LTD.	*	(**)	(**)
52. VAN DER HOUT ASSOCIATES LTD.		**	0
53. VULCAN INDUSTRIAL PACKAGING LTD.	*	**	0
54. WAFERBOARD CORP. LTD.		**	
55. WOODWARD STORES LTD.		*	(*)
TOTAL NUMBER OF DRAWDOWNS	14	18	39

0 = no deferred tax on income statement.

\* = drawdown as a percent of assets was smaller than the mean.

\*\* = drawdown as a percent of assets was larger than the mean.

( ) = drawdown occurred with a current income tax recovery.

## APPENDIX I



## The University of Western Ontario

School of Business Administration  
London, Canada  
N6A 3K7

July 18, 1986

Dear Sir:

I am writing to ask for your participation in a study designed to enhance our understanding of the reasons and implications of a reduction in a company's deferred income tax on their financial statements.

A review of your company's financial statements indicates that your company experienced an income statement drawdown in deferred income taxes for the year ending . . . My previous research indicates that it is not always possible to determine the reason for a reduction in a company's deferred income taxes from a review of the company's financial statements.

Very specifically, I am asking for the opportunity to talk with you in order to determine the major reasons for the deferred income tax credit on your company's income statement. I expect that the phone interview would take perhaps ten but not more than fifteen minutes of your valuable time. I do not require an exact reconciliation of the income statement credit, only an explanation of the major components and whether it was primarily caused by a loss in one or more subsidiaries, lack of available capital cost allowance or some other cause.

Results of the study will be made available to you and to the accounting profession in aggregate form only in order to ensure confidentiality of the participants. The data will also assist us at Western's Business School in our continuing efforts to better train our students as users of financial information.

Your participation would be very much appreciated and all information received will be treated as confidential. I will contact your secretary in the next two weeks to arrange a phone interview.

Thank you for your assistance.

Sincerely,

Rick Robertson, CA  
Assistant Professor  
(519) 661-3216

DR:swl



## BIBLIOGRAPHY

- Accounting Principles Board, APB Opinion No. 11, "Accounting for Income Taxes," New York: AICPA, December 1967.
- Accounting Principles Board, APB Opinion No. 16, "Business Combinations," New York: AICPA, August 1970.
- American Institute of Certified Public Accountants. "Accounting Interpretations of APB Opinion No. 11." in Financial Accounting Standards: Original Pronouncements as of July 1, 1977. FASB, 1977.
- Barton, A. D. "Company Income Tax and Interperiod Allocation." Abacus (September 1970), pp. 3-24.
- Beaver, William H. and Dukes, Roland E. "Interperiod Tax Allocation, Earnings Expectations, and the Behavior of Security Prices." The Accounting Review (April 1972), pp. 320-332.
- \_\_\_\_\_. "Interperiod Tax Allocation and Delta- Depreciation Methods: Some Empirical Results." The Accounting Review (July 1973), pp. 549-559.
- Beaver, William, Kettler, Paul and Scholes, Myron. "The Association Between Market Determined and Accounting Determined Risk Measures." The Accounting Review (October 1970), pp. 654-682.
- Beechy, Thomas H. "Impact of Deferred Taxes on Net Income." Proceedings, 1981 Annual Conference of the CAAA, pp. 150-160.
- \_\_\_\_\_. Accounting for Corporate Income Taxes: Conceptual Considerations and Empirical Analysis. (CICA 1983).
- Beresford, Dennis R., Best, Lawrence C., and Weber, Joseph V. "Accounting for Income Taxes; Change is Coming." Journal of Accountancy (January 1984), pp. 72-76, 78.
- Beresford, Dennis R., Best, Lawrence C., Craig, Paul W., and Weber, Joseph V. Accounting for Income Taxes: A Review of Alternatives. FASB Research Report, FASB, 1983.

- Cawsey, T. F., Dipchand, C. R., Laiken, S. N., and Prout, H. W. "Are Deferred Tax Credits Necessary?" Cost and Management (May-June 1973), pp.7-12.
- Corey, Gordon R. "Discussion of Accelerated Depreciation and Deferred Taxes: An Empirical Study of Fluctuating Asset Expenditures." Empirical Research in Accounting, 1967, pp.118-123.
- Cumming, John, and Jacobs, Frederick R. "An Empirical Examination of the Loss Carryforward Provisions of APB No.11." Akron Business and Economic Review (Winter 1976), pp.21-27.
- Davidson, Sidney. "Accelerated Depreciation and the Allocation of Income Taxes." The Accounting Review (April 1958), pp.419-428.
- Davidson, Sidney, Rasch, Steven F. and Weil, Roman L., "Behavior of the Deferred Tax Credit Account, 1973-82." Journal of Accountancy (October 1984), pp.138-140, 142.
- Davidson, Sidney, Skelton, Lisa, and Weil, Roman L., "Comment on 'The Expected Behavior of Deferred Tax Credits'," Contained in "Professional Notes," The Journal of Accountancy (April 1977), pp.53-56.
- Dewhirst, John F. "Tax Allocation Reconsidered." Canadian Chartered Accountant (February 1972), pp.40-48.
- Dirksen, Charles and Chew, Milton C. Jr. "Deferred Taxes - Changes Over Time." Proceedings, 1980 Annual Conference of the CAAA, pp.92-99.
- Dopuch, Nicholas and Sunder, Shyam., "FASB's Statements on Objectives and Elements of Financial Accounting: A Review." The Accounting Review (January 1980), pp.1-21.
- Drummond, Christina S. R. and Wigle, Seymour L. "Let's Stop Taking Comprehensive Tax Allocation for Granted." CA Magazine (October 1981), pp.56-61.
- Financial Accounting Standards Board. Statement of Financial Accounting Concepts No.1. Stamford, Conn.: FASB, 1978.
- \_\_\_\_\_. An Analysis of Issues - Accounting for Income Taxes. Discussion Memorandum. Stamford, Conn.: FASB, 1983.

- Graul, Paul R., and Lenke, Kenneth W. "On the Economic Substance of Deferred Taxes." Abacus (June 1976), pp.14-33.
- Herring, Hartwell C., and Jacobs, Fred A. "The Expected Behavior of Deferred Tax Credits." The Journal of Accountancy (August 1976), pp.52-56.
- Institute of Chartered Accountants in England and Wales. Statement of Standard Accounting Practice No.15, Accounting for Deferred Taxation. October, 1978.
- International Accounting Standards Committee. International Accounting Standard 12, Accounting for Taxes on Income. July, 1979.
- Jarnagin, Bill D. and Booker, Jon A., Financial Accounting Standards: Explanation and Analysis (Chicago: Commerce Clearing House, Inc. 1985).
- Kenley, W. J., "Do We Need a Revision to or a Replacement of AAS3?" The Chartered Accountant in Australia (November 1981), pp.27-29.
- Laibstain, Samuel. "A New Look at Accounting for Operating Loss Carryforwards." The Accounting Review (April 1971), pp.342-351.
- Lanfranconi, Claude P., and Robertson, Darroch A. "Disclosure of Variations in the Effective Tax Rate in Canada: An Investigation of Some Factors Influencing Standard Setting." Working Paper No. 83-35, The University of Western Ontario, August 1983.
- \_\_\_\_\_. "The Behaviour and Disclosure of Changes in Deferred Taxes in a Recessionary Environment." In Proceedings, 1984 Annual Conference of the CAAA Toronto: Canadian Academic Accounting Association, 1984, pp.134-159.
- Lantz, Keith W., Synir, Andrew G., and Williams, John J. "Comment on 'The Expected Behavior of Deferred Tax Credits.'" Contained in "Professional Notes," The Journal of Accountancy (April 1977), pp.56-58.
- Lantz, Keith W., Synir, Andrew G., and Williams, John J. "A Second Look at the Expected Behavior of Deferred Tax Credits." Cost and Management (March-April 1978), pp.46-50.

- Livingstone, John Leslie. "Accelerated Depreciation, Cyclical Asset Expenditures and Deferred Taxes." Journal of Accounting Research (Spring 1967), pp.77-94.
- \_\_\_\_\_. "Accelerated Depreciation and Deferred Taxes: An Empirical Study of Fluctuating Asset Expenditures." Empirical Research in Accounting: Selected Studies, 1967, pp.93-117.
- \_\_\_\_\_. "Accelerated Depreciation, Tax Allocation, and Cyclical Asset Expenditures of Large Manufacturing Companies." Journal of Accounting Research (Autumn 1969), pp.245-256.
- Mateer, William H. "Tax Allocation: A Macro Approach." The Accounting Review (July 1965): pp.583-586.
- McCalden, T. W. "A Study of the Tax Allocation Basis of Accounting for Corporate Income Taxes." Unpublished Study, York University, April 1970.
- Milburn, J. Alex. "Comprehensive Tax Allocation: Let's Stop Taking Some Misconceptions for Granted." CA Magazine (April 1982), pp.40-46.
- Milburn, J. A., "Accounting for Corporate Income Tax." Issues Paper, November 30, 1983.
- Miller, Malcom C. "Whither Tax-effect Accounting? The Chartered Accountant in Australia (September 1981), pp.35-44.
- Nurnberg, Hugo. "Tax Allocation for Differences in Original Bases." Journal of Accounting Research (Autumn 1970), pp.217-231.
- Petri, Enrico, and Stickney, Clyde P. "Business Combinations: Some Unresolved Issues." Journal of Accountancy (April 1982), pp.64,66-68,70,72, 74,76,78,79.
- Price Waterhouse & Co. Is Generally Accepted Accounting for Income Taxes Possibly Misleading Investors?. Price Waterhouse & Co. 1967.
- Rosenfield, Paul and Dent, William C., "No More Deferred Taxes." Journal of Accountancy (February 1983) pp.44,45, 47,48, 50,52,54,55.
- Sands, J.E., "Deferred Tax Credits are Liabilities." The Accounting Review ( 1959) pp.584-590.

- Schwartz, Bill N., "Deferred Taxes: Compliance and Understandability." Journal of Accounting, Auditing and Finance (Spring 1983), pp.244-53.
- Securities and Exchange Commission, "Amendment to Regulation S-X to Provide for Improved Disclosure of Income Tax Expense." (November 28, 1973).
- Skelkel, Ted D., and Fazzi, Charles. "The Deferred Tax Liability: Do Capital-intensive Companies Pay It?" Journal of Accountancy (October 1984) pp.142, 144-146, 150.
- Smith, Ephraim P., and Vangermeersch, Richard G. "Excerpts From a Survey Report on Allocation and Impact of APB Opinion No. 11 on Deferred Taxes." The CPA Journal (March 1973), pp.246-247.
- Spacek, Leonard, "The Case for Income-Tax Deferral." New York Certified Public Accountant (April 1968), pp.271-76.
- Stickney, Clyde P. "Analyzing Effective Corporate Tax Rates." Financial Analysts Journal (July-August 1979), pp.45-54.
- Tihanyi, Eva. "Are Deferred Taxes Capitalized Into Share Values?" Collected Papers, The Canadian Region of the American Accounting Association Annual Conference, June, 1975.
- Thomas, Arthur L. "The Allocation Fallacy and Financial Analysis." Financial Analysts Journal (September-October 1975), pp.37-41.
- Thornton, Daniel B. "Inflation Accounting and the Canadian Corporate Tax Base: Evidence for 1983." (forthcoming).
- Thornton, Daniel B. The Financial Reporting of Contingencies and Uncertainties: Theory and Practice. Vancouver: The Canadian Certified General Accountants' Research Foundation, 1983.
- Van Horne, James C. "A Look at the Loss Carry-Forward." The Accounting Review (January 1963), pp.56-60.
- Voss, William M. "Accelerated Depreciation and Deferred Tax Allocation." Journal of Accounting Research (Autumn 1968), pp.262-269.
- Waterhouse, John H. "A Descriptive Analysis of Selected Aspects of the Canadian Accounting Standard-Setting Proc-

ess." in Research to Support Standard Setting in Financial Accounting: A Canadian Perspective ed. Sanjoy Basu and J. Alex Milburn (Toronto: Clarkson Gordon Foundation 1982), pp.95-134.

Williams, Doyle Z. "Reporting Loss Carryovers in Financial Statements." The Accounting Review (April 1966), pp.226-234.

Wolk, Harry I., and Tearney, Micheal G. "Discounting Deferred Tax Liabilities: Review and Analysis." Journal of Business Finance & Accounting (Spring 1980), pp.119-133.

\_\_\_\_\_. "Income Tax Allocation and Loss Carryforwards: Exploring Uncharted Ground." The Accounting Review (April 1973), pp.292-299.

impact of income taxes on future cash flows and future income. It is not clear how discounting will improve this assessment sufficiently to justify the cost. If the liability method were applied without discounting this argument would be even stronger. The fluctuation in income because of a change in the tax rate or the introduction of a temporary surcharge would scarcely help in the estimation of future income.

#### Inference From Empirical Data

As was stated in Chapter Three, the issue of whether deferred income taxes are a liability or not is largely conceptual. However, it was also suggested that empirical evidence would provide insights. I have long accepted the argument that simply because deferred income taxes grow in dollar size or even as a percentage of assets, this is not sufficient for exclusion from liability treatment. Many items that are considered liabilities continually increase in size over time. For example, accounts payable, bonds payable or wages payable are likely to show continued in-