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DEPRECIATION, INCENTIVES AND CAPITAL EXPENDITURE

A STUDY OF NEW ZEALAND PUBLIC COMPANIES WITH  
SPECIAL REFERENCE TO THE EFFICACY OF SPECIAL  
DEPRECIATION AND INVESTMENT ALLOWANCES

VOLUME I

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## CORRIGENDA

Pages 73, 74, 81: Under section 27 (3) of the Companies Act 1901 it became obligatory for all companies to appoint auditors. However, it was not until the Companies Act 1933 came into force that companies were required by Statute to present annual accounts to their members and to keep proper books of account.

Page 76: The method of arriving at the amount of fixed assets accumulated cost or valuation less accumulated depreciation applies in respect of investments other than those of which the market value (or, in the case of investments not having a market value, their value as estimated by the directors) is shown either as the amount of the investment or by way of note.

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A B S T R A C T

Special depreciation and investment allowances were introduced to stimulate the capital outlays of firms. In this investigation we determine the extent to which these allowances actually influenced the timing or amount of capital expenditure undertaken by fifty-five companies which participated in a questionnaire survey. These companies accounted for about thirty per cent of the capital expenditure on plant and machinery undertaken in 1970-71 by establishments analysed in Statistics of Industrial Production. The annual accounts of the above companies and those of fifty-six other companies were also examined.

From the 1963-64 income year, a company was permitted to claim special depreciation without charging a similar amount. Prior to 1969, no more than ten per cent of the companies whose accounts were examined were known to take advantage of this ruling. From the 1968-69 income year, a company was also permitted to claim ordinary depreciation without charging a similar amount. This change in taxation practice has enabled companies to compute their depreciation charges on plant and machinery on the straight-line method. In 1973, eighteen per cent of the companies whose accounts were examined used this method.

All of the companies which disclosed in their annual accounts the method used to account for investment allowance reflected the tax saving arising from claiming that allowance in a lower taxation charge in the year in which investment allowance was claimed.

Given realistic assumptions and values for relevant variables, special depreciation increased the net present value of capital

expenditure proposals by between 1.7 and 4.5 per cent of the cost of the qualifying asset.

In respect of the year ended 31 December 1971, 9.2 per cent of the participants in the questionnaire survey answered that special depreciation resulted in the acquisition of qualifying assets at an earlier time than would have been the case if that allowance had not been available. Seventeen per cent of the companies gave a similar answer in respect of investment allowance. Firms which were responsive to the timing effect of special depreciation and investment allowance accounted for less than five and eleven per cent respectively of the capital expenditure on plant and machinery undertaken by participants.

If special depreciation or investment allowance had been abolished or suspended for a period of three to four years from 31 December 1970, it is estimated that the value of minor capital expenditure projects approved by participants in 1971 would have been two per cent less than actual approvals. In addition, three firms would have delayed or abandoned major capital expenditure projects.

Participants generally used capital expenditure decision techniques which were less sensitive than discounted cash flow methods to special depreciation and investment allowances.

Firms which answered that the most significant constraint on further capital expenditure was an inadequate rate of return on proposals considered, and fast-growth companies, were more responsive to the timing effect of special depreciation than were other firms. There were no other statistically significant relationships between firms' responsiveness to the abolition, suspension or timing effect of special depreciation or investment allowance and the large number of variables considered.

On the basis of the results presented herein, it is concluded that the timing and amount of capital expenditure undertaken by participants in the questionnaire survey were influenced to a very minor extent by special depreciation and investment allowances.

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This investigation would not have been possible without the kind assistance of a large number of people. I express my gratitude to those who participated in the pre-testing of my questionnaires, to the company executives and chartered accountants in public practice who completed my lengthy questionnaires and to officials of four Government Departments who provided useful information. Finally, I am pleased to acknowledge the substantial help and encouragement provided by my Supervisor, Professor G.J. Schmitt, Dean of the School of Management Studies. I remain, however, responsible for any errors.

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## I N T R O D U C T I O N

Since World War II, New Zealand Governments have intervened in the economy to a great extent in an attempt to achieve a faster rate of economic growth and development, and to attain other policy objectives. A large number of policies designed to stimulate particular types and classes of activity has been implemented. Many of these aim to influence the timing, amount and nature of capital expenditure undertaken by firms. Two important instruments introduced for this purpose were special depreciation and investment allowances.<sup>1</sup>

Special depreciation enabled a firm to advance its depreciation claims<sup>2</sup> on certain assets whereas investment allowance permitted a firm to claim a given percentage of the cost of a qualifying asset in the year in which it was first used to earn assessable income. A firm with sufficient taxable income to benefit from these allowances paid less tax in the initial years of the life of an asset than otherwise. In the case of special depreciation the firm's depreciation claim in later years was reduced. In this way, these allowances increased the net present value of capital expenditure proposals and were expected to result in firms accepting capital expenditure proposals which otherwise would be deferred or rejected.

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<sup>1</sup> From 1 April 1975, these allowances were replaced by the single first year depreciation scheme, an outline of which is given in Chapter II.

<sup>2</sup> Throughout this thesis a distinction is made between depreciation which is charged against revenue in the annual accounts of a company and depreciation which is claimed in the company's tax return.

In this investigation we shall determine the extent to which special depreciation and investment allowances stimulated capital expenditure undertaken by a sample of New Zealand public companies engaged in significant manufacturing activities. For this purpose a mail questionnaire survey was conducted, the results of which form the basis of the findings presented herein.

Special depreciation and investment allowances were intended to stimulate capital outlays on the footing that increased expenditure was itself a desirable objective; presumably on the assumption that it would result in increased output and/or more efficient means of production. This investigation is concerned with the efficacy of these allowances in stimulating capital expenditure. The question of whether the resulting capital expenditure led to increased output and/or more efficient methods of production is not examined.

There is a large number of variables which might be expected to affect the efficacy of special depreciation and investment allowances. These include the methods used to account for the allowances in the annual accounts of public companies (which in turn are influenced by accounting theory and company law), the adequacy of rates of depreciation permitted for taxation purposes, the pricing policies of firms, and the extent to which the decision to sell or scrap significant items of plant and machinery is dependent on the book value (accumulated cost net of accumulated depreciation charge) of such assets. Although these topics are interesting in themselves, they are discussed in order to deal comprehensively with the efficacy of special depreciation and investment allowances.

The following is an outline of the contents of the report.

In Part One the traditional approach to accounting for depreciation is reviewed, an outline history of the treatment of depreciation for taxation purposes is presented, and the influence of law on accounting for depreciation is assessed. A study of these topics enables the depreciation practices of companies in the recent past to be examined in historical perspective.

The results of an analysis of the annual accounts of a sample of public companies are discussed in Part Two. The methods used by the sample companies from 1962 to 1973 to determine the amount at which buildings, plant and machinery were stated, and the methods of accounting for depreciation (including special depreciation), investment allowance and income tax allocation in respect of differences between depreciation charged and claimed, are examined.

Opinions on the adequacy of rates of depreciation permitted for taxation purposes are reported in Part Three.

The final part, Part Four, is devoted to a study of the efficacy of special depreciation and investment allowances. The theoretical effects of these allowances are examined, previous research is reviewed and the effect of special depreciation and investment allowances on the timing, amount and nature of capital expenditure project approvals of participants in a questionnaire survey is investigated. Depreciation and pricing, and the relevance accorded the book value of plant and machinery to the decision to sell or scrap such assets, are also discussed.

A summary of this investigation and of the conclusions derived is given in Chapter XV.

The findings reported in Part Two are based on an analysis of the annual reports of one hundred and eleven public companies engaged in significant manufacturing activities. Fifty-five of these companies participated in a mail questionnaire survey. Data collected in this survey form the basis of the findings of Parts Three and Four.

Participants in the questionnaire survey accounted for about thirty per cent of the capital expenditure on plant and machinery undertaken in 1970-71 by establishments analysed in the Statistics of Industrial Production. Thus the conclusions reported are based on a study of companies which account for a very significant proportion of total capital expenditure on plant and machinery. However, as participants may differ in some significant way from non-participants, the finding presented herein may not apply to non-participants. Further research would be necessary to confirm whether the conclusions of this investigation apply to companies in general.

P A R T   O N E

DEPRECIATION POLICIES IN PERSPECTIVE

The depreciation policies of public companies reflect the influence of accounting theory, taxation policies and procedures, and company law. Aspects of these are reviewed below to assist in explaining the policies adopted by certain companies during the period 1962-73 (see Part Two).

In Chapter I several alternative valuation bases are reviewed. As the determination of a suitable basis is beyond the scope of this investigation, the historic cost basis is assumed to be appropriate. This leads to a discussion of the aim of accounting for depreciation in historic cost accounting, the allocation problem and depreciation methods. An outline history of the treatment of depreciation for taxation purposes is presented in Chapter II. The influence of law on accounting for depreciation is assessed in Chapters III and IV. The first of these discusses depreciation and the Companies Act whereas the second considers the treatment of depreciation in determining profits available for distribution.

CHAPTER ITHE VALUATION AND DEPRECIATION OF TANGIBLEFIXED ASSETSABSTRACT

Several valuation bases are briefly reviewed. It is assumed that the historic cost basis meets the information needs of users of financial reports. The purpose of accounting for depreciation, the allocation problem and depreciation methods are discussed.

In historic cost accounting, accounting for depreciation aims to distribute the cost of a tangible fixed asset, less its estimated residual value, over its estimated useful life. This process gives expression to the concept of matching costs with revenue as applied to such assets.

It is submitted that expectations as to the pattern of the following factors over the life of an asset should be considered in forming an ex ante opinion as to the reasonableness of the allocation of the cost of an asset, less its estimated residual value, over its assessed economic life; (a) use, (b) efficiency, (c) profitability, (d) revenue (e) obsolescence and physical deterioration, (f) repairs and maintenance expenditure, and (g) the degree of uncertainty. Generally, one or more of these factors will be of greater importance than other factors in estimating the economic life of an asset and in determining the amount of depreciation which should be charged in each period. Although consideration of the above factors will not produce a precise amount which should be charged for depreciation, it should be possible to form an opinion as to the reasonableness of the depreciation programme.

If the estimated life of an asset is short and if its estimated residual value at the end of that life is small, the diminishing value method results in a very high depreciation rate. This may distort periodic income. The diminishing value method also results in an unsatisfactory depreciation rate if the expected residual value is zero or less.

The impact of alternative depreciation policies on reported income increases in importance as the assumptions of stable prices, constant technology and zero growth become less realistic.

## INTRODUCTION

In the first part of this chapter several bases which may be used to determine the gross amount at which plant, machinery and buildings are stated are briefly reviewed. This is followed by a discussion of depreciation and historic cost accounting. The purpose of accounting for depreciation, the allocation problem and depreciation methods are examined.

## THE VALUATION OF TANGIBLE FIXED ASSETS

Financial accounting is concerned with the measurement of assets, liabilities, owners' equity and income. For this reason, assets are required to be valued. Several bases are reviewed below.<sup>1</sup>

### (a) Historic Cost

Under this basis assets are stated at their acquisition cost which is an objective, verifiable amount a large proportion of which results from an exchange transaction at arm's length.<sup>2</sup> The main criticisms of the historic cost basis are that :

<sup>1</sup> There is a large number of bases advocated by writers. We will review the most important of these. It should be noted that most bases contain several variants which are not discussed.

<sup>2</sup> For a discussion of historic costs see Carl T. Devine, "Asset Cost and Expiration", in Morton Backer (ed.), Modern Accounting Theory, Prentice-Hall, Englewood Cliffs, 1966, 141-8; Eldon S. Hendriksen, Accounting Theory, Irwin, Homewood, 1970, 266-8; W.A. Paton and A.C. Littleton, An Introduction to Corporate Accounting Standards, American Accounting Association, Illinois, 1967, 24-45; David Solomonds, "Economic and Accounting Concepts of Cost and Value", in Morton Backer (ed.), op.cit., 117-40.

- (1) In periods of inflation or deflation the amount at which assets are stated may be substantially understated or overstated relative to some other basis.
  - (2) The validity of additions of historic costs of different time periods during which the general level of prices or specific prices have changed, may be questioned.
- (b) Historic Cost Adjusted for Changes in the Purchasing Power of Money

This basis attempts to overcome some of the weaknesses of the historic cost basis measured in monetary terms without deviating from the principles of that basis. Assets are restated in terms of comparable dollars and fictional gains and losses arising from changes in the value of the monetary unit are isolated.<sup>3</sup>

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<sup>3</sup> See American Institute of Certified Public Accountants, Accounting Principles Board, "Financial Statements Restated for General Price Level Changes", Statement No. 3, American Institute of Certified Public Accountants, New York, 1969; American Institute of Certified Public Accountants, Staff of the Research Division, Reporting the Financial Effects of Price Level Changes, American Institute of Certified Public Accountants, New York, 1963; Institute of Chartered Accountants in England and Wales, "Accounting for Changes in the Purchasing Power of Money : Provisional Statement of Standard Accounting Practice No. 7", Accountancy, 85 (1974), 108-20; Henry W. Sweeney, Stabilized Accounting, Holt, Rinehart and Winston, New York, 1964; George Terborgh, Realistic Depreciation Policy, Machinery and Allied Products Institute, Chicago, 1954.

(c) Current Replacement Cost

Under this basis assets are recorded at the cost of acquiring similar assets or services at today's prices. Current replacement cost may be estimated by adjusting historic costs for specific price changes.<sup>4</sup>

(d) Current Market Price

Assets are valued at their expected market re-sale price.<sup>5</sup>

(e) Discounted Cash Flow

The most subjective basis listed is that of discounted cash flow. The value of an asset under this basis is the present value of future net receipts. This requires the estimation of expected cash inflows and outflows and the selection of an appropriate rate of interest.<sup>6</sup>

<sup>4</sup> American Accounting Association, Committee on Concepts and Standards - Long-lived Assets, "Accounting for Land, Buildings and Equipment : Supplementary Statement No. 1", The Accounting Review, 39 (1964), 693-9; Edgar O. Edwards and Philip W. Bell, The Theory and Measurement of Business Income, University of California, Berkely, 1967; Myron J. Gordon, "The Valuation of Accounts at Current Cost", in Stephen A. Zeff and Thomas F. Keller (eds.), Financial Accounting Theory : Issues and Controversies, McGraw-Hill, New York, 1964, 385-99; R.S. Gynther, Accounting for Price Level Changes : Theory and Procedures, Pergamon Press, Oxford, 1966; Eldon S. Hendriksen, Accounting Theory, op.cit., 268-9; P.R.C. Robinson, "Practical Application of Replacement Value Theory of Accounting" in Victoria University of Wellington, Department of Accountancy, Accounting Information and the Effects of Changing Prices, Victoria University of Wellington, Wellington, 1969; Robert T. Sprouse and Maurice Moonitz, A Tentative Set of Board Accounting Principles for Business Enterprises, American Institute of Certified Public Accountants, New York, 1962.

<sup>5</sup> Raymond J. Chambers, Accounting Evaluation and Economic Behavior, Prentice-Hall, Englewood Cliffs, 1966.

<sup>6</sup> Eldon S. Hendriksen, op.cit., 261-4.

### Which Basis?

From the information requirements of users of financial reports, it is possible to determine an appropriate income determination model. Plant, machinery, buildings and other assets are stated on a basis that is consistent with that income determination model. Thus the depreciation policy selected is independent of the valuation basis adopted.<sup>7</sup> As income determination models are beyond the scope of this work it will be assumed, for the purposes of the following discussion, that the historic cost basis meets the information requirements of users of financial statements. This basis is almost universally used in determining the gross amount at which plant and machinery is stated by listed manufacturing companies.<sup>8</sup> Accounting for the depreciation of this class of asset is of primary interest in this investigation.

### DEPRECIATION AND HISTORIC COST ACCOUNTING

Obsolescence and physical deterioration limit the life of most classes of tangible fixed assets acquired for the purpose of earning profits.<sup>9</sup> The length of the life of an asset is related to the nature of the asset and the conditions under which it is used. The pattern of obsolescence and physical deterioration may differ from asset to asset and during the life of an asset. Although

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<sup>7</sup> Except for discounted cash flow and current market price bases.

<sup>8</sup> See Chapter V.

<sup>9</sup> Physical deterioration is sometimes divided into the following classifications : wear and tear, effluxion of time, inadequacy and the effect of the elements.

repairs and maintenance may decrease the rate of deterioration, expenditure of this type cannot prevent the scrapping or demolition of plant, machinery or buildings. New products, processes and techniques render existing assets obsolete. Obsolescence may occur gradually or suddenly and may be expected or unexpected. The above facts are recognised in accounting for depreciation. However, we shall see in the following discussion that the fact of depreciation is not necessarily accounted for in the period in which obsolescence or physical deterioration takes place.<sup>10</sup>

#### The Purpose of Accounting for Depreciation

The most frequently quoted definition of accounting for depreciation is probably that formulated in 1944 by the then Institute of Accountants and re-affirmed in 1953. The Institute's definition states that :

"Depreciation accounting is a system of accounting which aims to distribute the cost or other basic value of tangible capital assets, less salvage (if any), over the estimated useful life of the unit (which may be a group of assets) in a rational and systematic manner. It is a process of allocation, not of valuation".<sup>11</sup>

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<sup>10</sup> For a further discussion on the physical nature of depreciation see George Terborgh, Dynamic Equipment Policy, McGraw-Hill, New York, 1949, 16-28 and 60-73.

<sup>11</sup> American Institute of Certified Public Accountants, Committee on Terminology, "Review and Resume", Accounting Terminology Bulletin No. 1, American Institute of Certified Public Accountants, New York, 1953, 25. For a discussion of the historical development of accounting for depreciation see A.C. Littleton, Accounting Evolution to 1900, American Institute, New York, 1933, 223-41; P.D. Woodhouse, "Depreciation : The Development of an Accounting Concept", The Accounting Review, 31 (1956), 71-6; John B. Canning, The Economics of Accountancy, Ronald Press, 1929, 129; Stephen Gilman, Accounting Concepts of Profit, Ronald Press, New York, 1939, 414.

The above definition provided for the valuation of tangible fixed assets at "cost or other basic value". This choice of valuation basis is consistent with the Institute's view that the historic cost basis should be abandoned if better results could be obtained by using an alternative basis.<sup>12</sup>

At the date of acquisition, the cost of an asset<sup>13</sup> may be viewed as a capitalisation of the services expected to be received from its use.<sup>14</sup> A proportion of the cost of the asset is therefore charged against the revenue of those periods which benefit from its use. This allocation of cost :

"..... simply gives expression to the concept of matching effort and accomplishment as applied to the cost of the asset".<sup>15</sup>

and it does not matter if the periodic depreciation charge is not in "accord with the observed physical deterioration" or obsolescence of the asset.<sup>16</sup>

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<sup>12</sup> Reed K. Storey, The Search for Accounting Principles : Today's Problems in Perspective, American Institute of Certified Public Accountants, New York, 1964, 46.

<sup>13</sup> In the following discussion we will consider the case of an individual asset. The discussion is also applicable where a group of homogeneous assets is considered as a separate entity.

<sup>14</sup> Perry Mason, Principles of Public Utility Depreciation, as quoted by Stephen Gilman, op. cit., 489.

<sup>15</sup> W.A. Paton and A.C. Littleton, op. cit., 17.

<sup>16</sup> loc. cit.

In the above definition the purpose of accounting for depreciation is to distribute the cost of an asset, less its residual value, over its estimated useful life. It is not intended to provide funds for the replacement of the asset. The cost or other basic value is distributed by way of a non-cash charge against revenue and hence there is no change in funds which results from accounting for depreciation.

The useful or economic life of an asset must be estimated in order to determine the period over which the cost of the asset is to be allocated.<sup>17</sup> The estimated useful life of an asset is the period during which that asset is expected to provide the the most profitable means of obtaining the relevant services. This period will often be shorter than the physical life of the asset. Although estimation of the useful life of an asset is largely a technical question, obsolescence of the asset, its product or the processes used must be considered.

The estimated salvage, scrap or residual value of an asset at the end of its estimated useful life will frequently be relatively small. The cost of demolition or removal of an asset should be deducted from the gross residual value. For this reason, the net residual value may be negative.

Estimates of the economic life of an asset and of its residual value are normally subject to wide margins of error. These errors may distort periodic income although total actual income over the actual life of an asset will be unchanged.

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<sup>17</sup> The life of an asset may be estimated in periods or in units of output. These bases are related as the rate of use in each period will affect the life of the asset measured in terms of periods.

### The Allocation Problem

The cost of an asset, less its expected residual value determines the aggregate amount of depreciation which is to be distributed over the assessed life of the asset. This raises the following question : What proportion of the aggregate depreciation should be allocated to each period? According to the definition quoted above accounting for depreciation does not attempt to measure the rate of obsolescence and physical deterioration. Therefore, these factors alone cannot be used for the purpose of determining the amount of depreciation which is to be charged in each period. Similarly, the change in the market price of an asset cannot be accounted for as depreciation as accounting for depreciation "is not a process of valuation".<sup>18</sup>

The American Institute of Accountants stated that depreciation should be allocated in a "systematic and rational manner".<sup>19</sup> A depreciation allocation may be said to be systematic if the cost of an asset, less its residual value, is distributed according to a planned programme and is not distributed so as to manipulate reported profit from period to period. The foregoing does not imply that the rate or method of depreciation should remain unaltered if changed circumstances or a revised assessment of the life and/or residual value of an asset suggest that existing judgments and estimates are inappropriate. A rational allocation is one which, on the basis of the best data available, appears to be reasonable. In forming an ex ante opinion as to the

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<sup>18</sup> American Institute of Certified Public Accountants, Committee on Terminology, op. cit., 25

<sup>19</sup> op. cit.

reasonableness of a proposed allocation of the cost of an asset, less its residual value, over its estimated useful life, expectations as to the pattern of the following factors over the life of the asset might be considered :

- (1) use,
- (2) efficiency,
- (3) profitability,
- (4) revenue,
- (5) obsolescence and physical deterioration,
- (6) repairs and maintenance,
- (7) interest rate, and
- (8) uncertainty.<sup>20</sup>

These factors are discussed below.

If the acquisition cost of an asset is viewed as a capitalisation of the services expected to be received during its useful life, it follows that the amount of depreciation charged in each period should be related, in part at least, to the rate of use of the asset. It has been asserted that errors in estimating the number of units to be produced during the life of an asset may be very large.<sup>21</sup>

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<sup>20</sup> See George L. Baltista and Gerald R. Crowningshield, "Accounting for Depreciation and Repair Costs", NAA Bulletin, 45 (1963), 21-30; Robert L. Dixon, "Decreasing Charge Depreciation - A Search for Logic", The Accounting Review, 35 (1960), 590-7; Oscar S. Gellein, "The Decreasing-Charge Concept", Journal of Accountancy, 100 (1955), 56-61; Orace Johnston, "Two General Concepts of Depreciation", Journal of Accounting Research, 6 (1968), 29-37; Issaac N. Reynolds, "Selecting the Proper Depreciation Method", The Accounting Review, 36 (1961), 239.

<sup>21</sup> Edward Stamp, Depreciation : Factors Governing Choice Of Method, New Zealand Society of Accountants, Wellington, 1963, 5. The rate of use of an asset may also be estimated in terms of the number of hours an asset is expected to be operated during a given period.

For this reason there has been a tendency to understate the importance of this factor. As the rate of use of an asset and its estimated useful life (measured in periods) are related, difficulties encountered in estimating the rate of use are also encountered in assessing the life of an asset in periods. Sometimes it is suggested that data on the expected rate of use of an asset is not readily available. However, this data is necessary in evaluating the proposal to acquire the relevant asset and in preparing operating budgets. Data on the actual rate of use of an asset is normally recorded for control and other purposes. Thus the data required to take the rate of use of an asset into account in determining the amount of depreciation to be charged in each period will generally be available, especially in the case of major assets.

Where the services received from an asset are closely related to the rate of use of the asset, the unit of output or production method may be the most suitable depreciation method. If other factors are important, an alternative depreciation method might be used.

In addition to the rate of use of an asset, its efficiency is relevant in measuring the services received in each period. Some assets reach a high level of efficiency in the initial period and later a decline occurs. This is reflected by increased shut-down time, an increase in rejected output and the use of the asset in operations requiring less precision. Major assets may not achieve a high level of efficiency for a number of periods. Whatever the expected pattern of efficiency, this factor is relevant in allocating the cost of an asset less its residual value over its economic life.

An asset is acquired by a business enterprise normally for the purpose of earning profits. The contribution which an asset is expected to make in each period enables the firm to make a profit and should commonly be the most important factor in estimating the useful life of an asset and in determining the amount of depreciation charged in each period. In addition to the profitability factor, the expected pattern of revenue might be considered in forming an ex ante opinion as to the reasonableness of the proposed allocation of depreciation charges. Unlike other factors discussed above, the profitability and revenue factors attempt to assess the reasonableness of the depreciation allocation in financial terms.

Although accounting for depreciation does not measure the rate of obsolescence and physical deterioration, the traditional approach states that "occurrences during the year" may be taken into account.<sup>22</sup> Thus the expected pattern of obsolescence and physical deterioration, together with other factors, is of some importance in determining the amount of the periodic depreciation charge.

The firm's repair and maintenance policy will affect the length of the economic life of an asset, its residual value and its efficiency. For these reasons expected repairs and maintenance is relevant in considering the reasonableness of the periodic depreciation charge.

A number of writers have argued that the rate of return on the amount at which an asset is stated net of accumulated

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<sup>22</sup> American Institute of Accountants, Committee on Terminology, op. cit., 25.

depreciation charge should not be influenced by the method of providing for depreciation.<sup>23</sup> This requires that an asset be valued on the discounted cash flow basis and that expectations at the time of acquiring the asset be used for the purpose of computing the periodic depreciation charge. Under the above procedure, the rate of interest is an important variable in determining the amount of depreciation which is to be charged in each period. As the historic cost basis does not regard the rate of interest as relevant in determining the gross amount at which an asset is stated, this factor is not relevant in determining the periodic depreciation charge.

The last factor, the degree of uncertainty, recognises the possibility of significant errors in estimating the economic life of an asset and its residual value and in allocating aggregate depreciation over the assessed life of the asset. Where the life and residual value of an asset are particularly difficult to estimate, a decreasing charge method might be preferred. Under methods of this type a higher proportion of the cost of an asset less its residual value is allocated to the early years of the life of an asset than is allocated by a constant charge method. Thus the effect on reported income of over-estimating the life of an asset might be smaller under a decreasing charge method than under the latter method.

It is submitted that expectations as to the pattern of the following factors over the life of an asset should be

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<sup>23</sup> Harold J. Bierman Jr., "Depreciable Assets : Timing of Expense Recognition", The Accounting Review, 36 (1961), 613-8; Orace Johnston, op. cit., 29-37; Issaac N. Reynolds, op. cit., 239-48.

considered in forming an ex ante opinion as to the reasonableness of the allocation of the cost of an asset less its estimated residual value over its assessed economic life; (a) use, (b) efficiency, (c) profitability, (d) revenue, (e) obsolescence and physical deterioration, (f) repairs and maintenance expenditure, and (g) the degree of uncertainty. In any given situation, all of the above factors will not be of equal importance. Generally one or more factors will be crucial in estimating the economic life of the asset and in measuring the services expected to be received from the use of the asset in each period. These crucial factors should be given a greater weighting than other factors in forming an ex ante opinion as to the reasonableness of the planned programme of depreciation charges.

As accounting for depreciation is dependent on estimates and judgements made by directorates and managements, the accuracy of which cannot be determined for a significant period, the depreciation charge is one of the most subjective items included in a profit and loss statement. Consideration of the above factors will not produce a precise amount which should be charged for depreciation. However, it should be possible to form an opinion on the reasonableness of the depreciation programme.

A systematic and rational depreciation charge may be computed by using a recognised depreciation method, or a special programme may be required to allocate the cost of an asset, less its residual value, over its estimated useful life.

### Depreciation Methods

Two decreasing charge depreciation methods are the diminishing value and sum of the digits methods. The cost of an asset net of accumulated depreciation charge under the former method declines in the form of a geometric progression having a common ratio of one minus the depreciation rate. The amount at which an asset is stated net of accumulated depreciation charge under the sum of the digits method declines in the form of an arithmetic progression.

Some features of the diminishing value method become evident on studying the formula for determining the periodic rate of depreciation (d)<sup>24</sup> :

<sup>24</sup> The proof of this formula is given below. The amount at which an asset is stated net of accumulated depreciation charge (A) at the end of the first period is given by :

$$A_1 = C(1-d)$$

and at the end of the second period :

$$A_2 = C(1-d)(1-d)$$

Therefore, at the end of n periods the amount at which an asset is stated net of accumulated depreciation charge is given by :

$$A_n = C(1-d)^n$$

To determine the periodic rate of depreciation required to reduce the amount at which an asset is stated net of accumulated depreciation charge to the estimate residual value at the end of n periods, we let :

$$A_n = S \quad S = C(1-d)^n$$

and solve for d :

$$d = 1 - \sqrt[n]{\frac{S}{C}}$$

The above proof is taken from D.J. Brown, "Time to Abandon the Reducing Balance Method?", Accountancy, 82 (1971), 581-2.

$$d = 1 - \sqrt[n]{\frac{S}{C}}$$

where :

n is the estimated useful life of the asset in periods,

S is the estimated residual value at the end of that life, and

C is the cost of the asset.

The residual value (S) is a significant variable in determining the depreciation rate (d). If this variable has a nil value, then  $\frac{S}{C}$  is zero and the depreciation rate is one hundred per cent.<sup>25</sup> Where an asset has an estimated life of more than one period, this result is inconsistent with the matching principle. To some extent this difficulty may be overcome by assuming a positive residual value and thereby determining an approximate rate. If the expected residual value is negative, then the depreciation rate may be obtained for uneven periods only.<sup>26</sup> Moreover, the rate will exceed one hundred per cent.<sup>27</sup> For these reasons a purist would reject this method.

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<sup>25</sup> ibid., 582-3.

<sup>26</sup> If the costs of removing or demolishing an asset are expected to exceed the gross salvage value, the expected residual value will be negative.

<sup>27</sup> D.J. Brown (op. cit., 583) gives the following example. Assume that the cost of an asset is eighty dollars, that its expected life is three periods and that its expected residual value is minus ten dollars. According to the formula given above, the depreciation rate is one hundred and fifty per cent. The net amount at which the asset is stated at the end of each period (A) is calculated as follows :

.....(Continued at the foot  
of next page.)

An important feature of the diminishing value method is that as the number of periods and the residual value approach zero, the depreciation rate rises sharply. For example, if an asset has an estimated life of five periods and if the residual value is expected to be five per cent of the cost of the asset, then the depreciation rate is approximately forty-five per cent. In contrast, if the estimated life is three periods and the expected residual value is one per cent of cost, the depreciation rate will be approximately seventy-nine per cent. For assets with short lives and low residual value, the high depreciation rate may result in an inappropriate distribution of depreciation. Where assets have a longer life and/or a higher residual value, the initial depreciation charge under the diminishing value method may also unduly distort income if a major expansion takes place.<sup>28</sup>

Although the periodic rate of depreciation is independent of the estimated residual value of the asset under the straight-line and sum of the digits methods, the amount of depreciation charged in each period is affected by the amount of the residual value. The amount of depreciation allocated

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$$\begin{aligned} A_1 &= 80 (1-1.50) \\ &= 40 \\ A_2 &= 80 (1-1.50)^2 \\ &= +20 \\ A_3 &= 80 (1-1.50)^3 \\ &= -10 \end{aligned}$$

$$(A_3 = S)$$

<sup>28</sup> Distortion of periodic income as a result of charging high rates of depreciation on the diminishing value method was given as the most important reason for certain companies switching to the straight-line method. See Chapter V and Appendix D.

to the initial periods by the diminishing value method tends to be larger than that distributed by the sum of the digits method.

The straight-line method results in a constant charge relative to time. It has been supported for its simplicity<sup>29</sup> and its conservatism.<sup>30</sup>

The rate of use of an asset is given special emphasis under the unit output or production method. A constant amount of depreciation is charged against revenue for every unit produced.

Two increasing charge methods are the annuity and sinking fund methods.<sup>31</sup> As considerable weight is given to the interest factor, these methods are inappropriate in providing for the depreciation of tangible fixed assets under historic cost accounting.

In Table I-1 the diminishing value, sum of the digits and the straight-line methods are compared. It is assumed that the asset has a life of ten periods and an estimated residual value of five per cent of the cost of the asset. The depreciation charge in the first period is 25.9, 17.29 and 9.5 per cent of the cost of the asset under the diminishing value, sum of the digits and the straight-line methods respectively. More than half of the cost of the

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<sup>29</sup> George O. May, Financial Accounting : A Distillation of Experience, Macmillan, New York, 1959, 146; W.A. Paton and A.C. Littleton, op. cit., 17; Edward Stamp, op. cit., 4.

<sup>30</sup> George O. May, op. cit., 146. This view was not explained by May.

<sup>31</sup> The straight-line method may be regarded as a special case of the annuity method where the interest rate is zero.

TABLE I-1  
COMPARISON OF SELECTED DEPRECIATION METHODS<sup>1</sup>

Period	Diminishing Value Method			Sum of the Digits Method			Straight Line Method		
	Periodic Depreciation Charge	Accumulated Depreciation Charge	Cost less Accumulated Depreciation Charge	Periodic Depreciation Charge	Accumulated Depreciation Charge	Cost less Accumulated Depreciation Charge	Periodic Depreciation Charge	Accumulated Depreciation Charge	Cost less Accumulated Depreciation Charge
	P E R C E N T O F C O S T O F A S S E T								
1	25.900	25.900	74.100	17.290	17.290	82.710	9.500	9.500	90.500
2	19.192	45.092	54.908	17.580	32.870	67.130	9.500	17.000	81.000
3	14.221	59.313	40.687	13.775	46.645	53.355	9.500	27.500	71.500
4	10.538	69.851	30.149	12.065	58.710	41.290	9.500	38.000	62.000
5	7.809	77.660	22.340	10.355	69.065	30.935	9.500	47.500	52.500
6	5.786	83.446	16.554	8.645	77.710	22.290	9.500	57.000	43.000
7	4.287	87.733	12.267	6.935	84.645	15.355	9.500	66.500	33.500
8	3.177	90.910	9.090	5.225	89.870	10.130	9.500	76.000	24.000
9	2.354	93.264	6.736	3.420	93.290	6.710	9.500	85.500	14.500
10	1.745	95.009	4.991	1.710	95.000	5.000	9.500	95.000	5.000

<sup>1</sup>Assumption: The asset is estimated to have a life of ten periods and a residual value of five per cent of the cost of the asset.

asset is charged to revenue in the first three periods under the diminishing value method. This compares with four and five periods for the sum of the digits and the straight-line methods respectively. Ninety per cent of the cost of the asset is allocated by the end of the eighth period under the two decreasing charge methods. Under the straight-line method a similar percentage of the cost of the asset is not allocated until the tenth period.

Although the above analysis suggests that the choice of depreciation method may have a material effect on reported income it should be noted that a mature static firm which replaces the same number of a given type of asset each year will, assuming stable prices and constant technology, charge the same amount for depreciation under the three methods compared above. This also holds if each asset is charged against revenue on purchase or disposal. Moreover, the amount charged for depreciation is equivalent to the amount spent in acquiring replacement assets. If the above assumptions are relaxed, alternative depreciation policies will have varying effects on periodic income. Thus the impact of alternative depreciation policies increases in importance as the above assumptions become less realistic.

#### Errors in Estimating the Life and/or Residual

##### Value of an Asset

As the periodic depreciation charge is based partly on the estimated life of an asset and its residual value at the end of that life, material errors in these estimates require an adjustment to be made during the life of the

asset. The accumulated depreciation charge at the commencement of the period in which the error is recognised may be re-calculated on the basis of the revised estimates. Any difference between the accumulated charge under the alternative estimates and that calculated under the original estimates represents an adjustment to the income of prior periods and should be credited or debited to the appropriation account. The depreciation charge for the current period should be calculated on the basis of the revised estimates.

#### CONCLUSION

Given historic cost accounting, accounting for depreciation aims to allocate the cost of a tangible capital asset, less its expected residual value, over its estimated useful life. This process gives expression to the concept of matching costs with revenue as applied to such assets.

Depreciation should be allocated in a systematic and rational manner. A depreciation allocation may be said to be systematic if the cost of an asset, less its residual value, is distributed according to a planned programme and is not distributed so as to manipulate reported profit from period to period. A rational allocation is one which, on the basis of the best data available, appears to be reasonable. It is submitted that expectations as to the pattern of the following factors over the life of an asset should be considered in forming an ex ante opinion as to the reasonableness of the allocation of the cost of an asset, less its estimated residual value, over its assessed economic life; (a) use, (b) efficiency, (c) profitability, (d) revenue, (e) obsolescence and physical deterioration, (f) repairs and

maintenance expenditure, and (g) the degree of uncertainty. Generally, one or more factors will be of greater importance than other factors in estimating the economic life of an asset and in determining the amount of depreciation which should be charged in each period. Although consideration of the above factors will not produce a precise amount which should be charged for depreciation, it should be possible to form an opinion on the reasonableness of the depreciation programme.

Under the diminishing value method, the expected residual value is a significant variable. If this variable is zero or less, a depreciation rate of one hundred per cent or a negative rate will result. Furthermore, if the estimated life of an asset is short and if the expected residual value is small, the periodic rate may be very high. In these circumstances the diminishing value method is unsatisfactory.

The annuity and sinking fund methods were rejected because of the importance given to the rate of interest.

Finally, it was noted that a static firm would, given stable prices and constant technology, charge the same amount for depreciation under the straight-line, diminishing value and sum of the digits methods. This also holds if each asset is charged to revenue on acquisition or on disposal. Thus the impact of alternative depreciation policies on periodic income increases in importance as the above assumptions become less realistic.

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CHAPTER II  
AN OUTLINE HISTORY OF THE TREATMENT  
OF DEPRECIATION FOR TAXATION PURPOSES<sup>1</sup>

ABSTRACT

A taxpayer has been permitted to claim a deduction for depreciation on plant and machinery since income was first taxed in the 1892-93 income year. This deduction, which was given legislative approval in 1894, was based on the diminishing value method and was granted at the discretion of the Commissioner of Taxes. Although a deduction for the depreciation of premises was not permitted until 1917, an exemption in lieu of depreciation was granted up to 1917, and again between 1923-30 during which time a deduction for the depreciation of buildings was withdrawn.

Prior to 1 April, 1940 a taxpayer was permitted to claim a deduction for depreciation without charging the same amount against revenue in his financial records. However, this freedom was limited under the Commissioner's discretionary power. In 1945 special depreciation was introduced and this was also required to be charged against revenue before a claim was granted.

Although concessionary rates of depreciation were phased out in the late 1950s, they returned in the 1960s in greater number. The 1960s also saw the return of the taxpayer's freedom to account for depreciation for financial reporting purposes, without reference to the Department's depreciation policy.

INTRODUCTION

In this chapter the historical treatment of depreciation for taxation purposes is examined with a view to highlighting those policies and procedures which have influenced, or are influencing, the treatment of depreciation for financial

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<sup>1</sup>This chapter is based on an unpublished essay entitled "Describe and Discuss New Zealand Taxation Law and Departmental Practice in Respect of Depreciation Allowances Since 1891 : An Interim Report", submitted by the writer in 1971 in part fulfilment of the requirements of the Degree of Master of Philosophy prior to transferring to the present degree. Significant amendments have been made in the light of further research. The implications of the Department's depreciation policy for company directors and auditors, which were included in the above essay, are presented in Chapter III.

reporting purposes. This report does not purport to be an exhaustive historical study. The limited purpose of the enquiry and the lack of primary source materials have restricted the depth of this investigation.<sup>2</sup>

The following topics are discussed :

- (1) Formulation of a Depreciation Policy for Taxation Purposes,
- (2) Inquiries into the Taxation System 1922 and 1924,
- (3) The 1940 Departmental Review of Depreciation Policy,
- (4) The Introduction of Initial and Special Depreciation Allowances,
- (5) The Report of the Taxation Committee, 1951,
- (6) Depreciation Policy 1951-67,
- (7) The 1967 Review of Taxation,
- (8) Depreciation Policy since 1967.

#### FORMULATION OF A DEPRECIATION POLICY FOR TAXATION PURPOSES

On 8 September, 1891, Parliament passed the Land and Income Assessment Bill. This Act was a major development in the history of New Zealand's public finances as it provided for the assessment of income for taxation in the year ended 31 March, 1893 and for subsequent years.<sup>3</sup>

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<sup>2</sup>The main sources consulted were; Acts of Parliament, Parliamentary Debates, Financial Statements, Commissions and Committees of Inquiry and articles published in The Accountants' Journal. A full list may be found in the chapter references which are given on pages 69-72.

<sup>3</sup>Some direct taxes were levied on income in the 1840s but these were short-lived. Prior to 1893, the main tax was a property tax. For a brief note on these early developments see Taxation Review Committee, "Taxation in New Zealand", Appendix to the Journals of the House of Representatives, 1967, 1, B-18, 456, (Chairman: L.N. Ross).

Under Schedule C every company (other than a life insurance company) carrying on any business in New Zealand was liable for income tax assessed :

"... in respect of the gains and profits derived or received from such business."<sup>4</sup>

Although the terms "gain" and "profit" were not defined, Schedule F provided that :

"All losses and outgoings actually incurred by any ... company in production of the income shall be deducted from the gross amount of [its] income."<sup>5</sup>

In addition, section two prohibited a deduction for :

"Any disbursements or expenses whatever not being money wholly and exclusively laid out or expended for the purposes of such business ..."<sup>6</sup>

and any deduction for repairs to premises, and repairs or alterations to any implements, utensils or machinery :

"... beyond the sum usually expended in any year for such purposes."<sup>7</sup>

The prohibition of a deduction for the repair of implements, utensils or machinery beyond the sum usually expended was part of the fundamental distinction between items of a capital and of a revenue nature.

As the Act did not explicitly grant a deduction for depreciation, a taxpayer's right to such a deduction was subject to paragraphs one and two of Schedule F. Under these provisions it would have been difficult to argue that depreciation expense represented an "outgoing actually incurred".

In 1894, the above Act was amended to permit (among other

<sup>4</sup> Land and Income Assessment Act 1891, Schedule C, par.1.

<sup>5</sup> ibid., Schedule F, par.1.

<sup>6</sup> ibid., Schedule F, par.2(f).

<sup>7</sup> ibid., Schedule F, par.2(a).

things) a deduction for depreciation. The following sub-paragraph was added as a proviso to paragraph two :

"(a) Provided that the Commissioner may allow such deduction for depreciation of any implements, utensils or machinery as he may consider just in respect of the diminishing value during any year by reason of fair wear and tear, not being of a kind that could be made good by repairs, or by the implements, utensils, or machinery being rendered obsolete or useless."<sup>8</sup>

In introducing the above amendment, the then Colonial Treasurer informed Parliament that the above system of depreciation :

"... had been carried on ever since the department had been taxing income, and it was desired to put the system on a proper footing."<sup>9</sup>

In explaining the concept of depreciation adopted for taxation purposes, the Department wrote that a deduction :

"... is not intended to provide for the loss of capital invested, but simply represents the annual loss through wear and tear (as affecting income-earning capacity), other than that which can be made good by repairs."<sup>10</sup>

A deduction for depreciation under the Land and Income Assessment Act 1891 was at the discretion of the Commissioner of Taxes. He was authorised to grant or refuse a deduction for depreciation, and, having decided to grant a deduction, the Commissioner was given further discretionary powers to permit such deduction as he considered just. The equivalent United Kingdom statute required any deduction granted to be "just and reasonable".<sup>11</sup> It is clear that the New Zealand

<sup>8</sup>Land and Income Assessment Amendment Act 1894, s.81(1).

<sup>9</sup>Hon. J.G. Ward, New Zealand Parliamentary Debates, 86 (1894), 878.

<sup>10</sup>New Zealand Official Year-Book 1897, Government Printer, Wellington, 1897, 392.

<sup>11</sup>Richard Bird, "Depreciation Allowances and Countercyclical Policy in the United Kingdom 1945-60", Canadian Tax Journal, 11 (1963), 254.

Commissioner's sense of justice was to be influenced by the Chief Inspector of Machinery, who was his expert adviser on rates of depreciation.<sup>12</sup>

Under the Commissioner's discretionary authority, depreciation claims were computed in the 1892-93 income year and in subsequent years on the diminishing value method.<sup>13</sup> This method, along with other aspects of the Department's original policy, was apparently adopted from the English system.<sup>14</sup>

<sup>12</sup>Hon. J.G. Ward, op.cit., 876. Also see A.K. Newman, New Zealand Parliamentary Debates, 86, 877, and J. McGowan (Commissioner of Taxes), "Land and Income Tax", in New Zealand Official Year-Book 1895, Government Printer, Wellington, 1895, 280.

<sup>13</sup>It is interesting to speculate whether the words "in respect of the diminishing value" of section 81(1) of the Land and Income Assessment Amendment Act 1894 were intended to be, and were interpreted as, an authorisation by Parliament to grant depreciation claims computed on the diminishing value method rather than merely stating that a deduction may be permitted for the diminution in value of the relevant assets. Following omission of the words quoted above from Land and Income Assessment Act 1900, some depreciation claims were granted on the straight-line method (for example, motor vehicles).

<sup>14</sup>From 1878 a deduction for depreciation was granted, on the diminishing value method, in England. Prior to that year, some district assessors, apparently with the approval of the Commissioner, granted a deduction for depreciation which was generally based on the procedures adopted by the taxpayer for financial reporting purposes. There were no fixed rules. In 1878 legislation was passed to standardise existing practices. As the diminishing value method was used by the majority of taxpayers who provided for depreciation, it was adopted for taxation purposes. See Royal Commission on the Taxation of Profits and Income, Final Report, Cmd 9474, H.M.S.O., London, 1955, 96, pars. 308-13 (Chairman: C.J. Radcliffe); Richard Bird, op.cit., 254; B.E.V. Sabine, A History of Income Tax, George, Allen and Unwin, London, 1966, 120.

For evidence that New Zealand adopted the substance of the English system, see Hon. J.G. Ward, op.cit., 878. The Parliamentary Debate on the Land and Income Tax Assessment Amendment Bill 1894 does not include any information on the reasons for adopting the diminishing value method. The Commissioner of Inland Revenue, Mr. D.A. Stevens, indicated in a letter dated 3 May, 1972 that his Department's files did not contain any information on the reason for adopting the diminishing value method. He did suggest that this method was probably used by the majority of taxpayers who provided

The first schedule of standard rates was compiled after the Commissioner and the Chief Inspector had discussed rates of depreciation with many taxpayers and visited a number of plants.<sup>15</sup> This approach was intended to produce a schedule of rates which was acceptable to the majority of taxpayers and at the same time conformed to the general policy quoted above. Individual taxpayers who were unable to accept the schedule rates were invited to submit a case for special rates to the Commissioner. These two features of schedule rates (consultation with taxpayers and the right to apply for special rates) continue to be a feature of the Department's depreciation policy.

The Commissioner's wide discretionary powers were similar to those given to tax commissioners in England,<sup>16</sup> Australia and South Africa.<sup>17</sup> The right of taxpayers to object to or appeal against the exercise of the Commissioner's discretion was discussed in a series of court cases. In P. and O. Steam Navigation Co. v. Leslie it was held that a taxpayer could not request the court to increase a deduction for depreciation.<sup>18</sup> Thus, where the Commissioner was of the opinion that the

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for depreciation at that time. This view was supported by Mr. C. Rosen, a retired Regional Controller of the Department, who was of the view that the majority of companies in the 1890s were British-owned and were using the diminishing value method for financial reporting purposes. For this reason the diminishing value method was adopted for taxation purposes in New Zealand.

<sup>15</sup> J. McGowan, op.cit., 280.

<sup>16</sup> B.E.V. Sabine, op.cit., 120.

<sup>17</sup> "Adjuster", "Land and Income Tax Notes", The Accountants' Journal, 10 (1932), 283-4.

<sup>18</sup> "Adjuster", "Land and Income Tax Notes", The Accountants' Journal, 9 (1931), 208-9. The case referred to is reported: 82 L.T. 137; 4 Tax Cases, 177.

depreciation claimed by the taxpayer was of a type that could be made good by repairs, the amount allowed as a deduction was unchallengeable, as this was a matter to be considered by the Commissioner.<sup>19</sup> Moreover, once the Commissioner had exercised his discretion as to the sum allowed, in view of the full facts and in the absence of fraud, he could not subsequently alter his decision and allow a smaller amount of depreciation in respect of past years.<sup>20</sup>

Under the Department's original depreciation policy, a deduction for a loss on the disposal of a depreciable asset, which was regarded as an allowance for obsolescence,<sup>21</sup> was permitted when the asset was actually discarded in the normal course of business.<sup>22</sup> The loss incurred on the sale of a depreciable asset at a price less than its written-down value for taxation purposes was not deductible.<sup>23</sup> Nor was a deduction permitted when a depreciable asset was discarded following a change in the character of the business.<sup>24</sup>

As many taxpayers did not maintain adequate records, the Commissioner experienced considerable difficulty in applying the above depreciation policy. The Act was amended in 1893 to

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<sup>19</sup>Eastern Extensions Australasia and China Telegraph Co. v. Commissioner of Taxes (New Zealand), (1904), 24 N.Z.L.R. 308.

<sup>20</sup>Wood Bros. Ltd. v. Commissioner of Taxes (New Zealand), (1909), 11 G.L.R. 484. The Commissioner was entitled to revise the rate of depreciation applicable in future years.

<sup>21</sup>New Zealand Official Year-Book 1897, Government Printer, Wellington, 1897, 392.

<sup>22</sup>loc.cit.

<sup>23</sup>"Adjuster", "Land and Income Tax Notes", The Accountants' Journal, 4 (1926), 369.

<sup>24</sup>loc.cit.

permit the Commissioner to inspect taxpayers' accounts and to require them to produce such particulars as he considered necessary. Despite this, inadequate records relating to depreciation claims continue to create difficulties for the Department.<sup>25</sup>

The depreciation policy adopted by the Commissioner in line with the Act did not require taxpayers to charge the same amount of depreciation as was claimed for taxation purposes. On the contrary, the Department encountered some difficulties in educating taxpayers to the view that their tax returns, and not their own records, were subject to the provisions of the Act. However, by 1905 the Department reported that :

"... after these years ... the Department has succeeded in thoroughly establishing the principle, and taxpayers now recognise that the return must be prepared in accordance with the Assessment Act, and not with what they have deemed to be the year's profit for their own purposes."<sup>26</sup>

It can be seen that the main features of New Zealand's depreciation system for taxation purposes can be traced back to the 1890s. The dominance of the diminishing value method for plant and machinery, the wide discretionary powers of the Commissioner and the concept of depreciation are all part of the Department's current depreciation policy. On the other hand, an allowance for depreciation on buildings, a closer link between depreciation charged and claimed, and the introduction

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<sup>25</sup>See the evidence of D.G. Clark (Commissioner of Taxes) presented to the Royal Commission Appointed to Inquire into Land and Income Tax in New Zealand, "Land and Income Taxation", Appendix to the Journals of the House of Representatives, 1924, 1, B-5, 184-5 (Chairman: W.A. Sim). The Report of the Royal Commission is discussed below.

<sup>26</sup>New Zealand Official Year-Book 1905, Government Printer, Wellington, 1905, 575.

of concessionary rates of depreciation were added to (and some later deleted from) the Department's policy, in the 1900s.

Changes in the Department's Depreciation Policy 1900-1922

Until 1917 depreciation had not been permitted on buildings. Under the original Act a special exemption of five per cent on the capital value of land and buildings was granted in lieu of depreciation on buildings and as a concession to those taxpayers who, by providing their own premises, could not claim a tax deduction for rent. The Finance Act 1917<sup>27</sup> amended section 86(1) of the Land and Income Tax Act 1916<sup>28</sup> to permit a deduction for the depreciation of premises. This deduction was withdrawn in 1923 when the special exemption was re-introduced.<sup>29</sup> However, in 1930 depreciation on buildings once again became a deductible expense.<sup>30</sup>

The Land and Income Tax Act 1916 limited the period during which the Commissioner was permitted to alter an assessment to four years from the end of the year of assessment.<sup>31</sup> In 1920, that Act was amended to authorise the Commissioner to revise an assessment in any year for the purposes of taxing depreciation claims recovered on the sale of an asset. The amendment stated that :

"Where ... the Commissioner has, for any year of assessment, ... allowed a deduction in respect of the depreciation of any premises, implements, utensils or machinery and the taxpayer at any time afterwards

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<sup>27</sup>s.30.

<sup>28</sup>This was an amending and consolidating Act.

<sup>29</sup>Land and Income Tax Act 1923, s.86(1)(a).

<sup>30</sup>Land and Income Tax Amendment Act 1930, s.6.

<sup>31</sup>s.16.

sells such premises ... or machinery at a price in excess of the amount at which the value of those assets has been reduced by such allowance, the Commissioner may make a revised assessment for that or any subsequent year without allowing such deduction or without allowing such proportion thereof as he thinks fit, and may recover the additional amount of income-tax accordingly." <sup>32</sup>

In practice, the Commissioner disallowed the depreciation claim (or part thereof) in the year of sale and, where necessary, in the immediately preceding year or years. <sup>33</sup>

#### INQUIRIES INTO THE TAXATION SYSTEM 1922 AND 1924

The first committee appointed to inquire into income tax in New Zealand reported in 1922.<sup>34</sup> Although many of the rules governing the deduction of depreciation had been applied by the Department under the Commissioner's discretionary powers, the report did not discuss the system of depreciation employed at the time. The committee's only recommendations on matters related to the concept of depreciation called for a depletion allowance for coal mine owners similar to that granted to forest owners and a deduction for the amortization of goodwill. <sup>35</sup>

A more comprehensive inquiry into income tax was undertaken by a Royal Commission which reported in 1924.<sup>36</sup> Although the Commission's recommendations were no more significant than the earlier committee's recommendations, the report

<sup>32</sup> Land and Income Tax Amendment Act 1920, s.17.

<sup>33</sup> C.A. Staples, A Guide to New Zealand Income Tax Practice, Financial Publications, Wellington, 1940, 32-3.

<sup>34</sup> Committee Appointed to Inquire into the Taxation of the Dominion of New Zealand, "Taxation", Appendix to the Journals of the House of Representatives, 1922, 1, B-5, 1-21, (Chairman: D.W. Hunt).

<sup>35</sup> ibid., 13.

<sup>36</sup> Royal Commission Appointed to Inquire into Land and Income Tax in New Zealand, op.cit., 1-255.

included valuable minutes of evidence which covered a wider area than the recommendations suggest.

In his submissions, the Commissioner of Taxes informed the Commission that :

"Depreciation is left under our Act, as it is under all the other Income-tax Acts, to the discretion of the Commissioner, and I think that it may just as well be left there."<sup>37</sup>

In supporting the view that the rates of depreciation were adequate, the Commissioner said that :

"The rates as at present allowed are higher than the general body of taxpayers write off."<sup>38</sup>

He later added :

"... it is contended that depreciation should be allowed whether it is written off or not. I do not think that would be right, and I see there is a recommendation to that effect in the report of the British Commission."<sup>39</sup>

The Commissioner supported the above view by referring to the difficult task which his officers had in preventing taxpayers from claiming more than the cost of the asset.<sup>40</sup> It would appear that this problem could have been solved by requiring taxpayers to supply adequate information on additions and deletions to assets and on depreciation claimed in previous years. However, the Commissioner was of the opinion that the best solution would be to eliminate separate records of depreciation for financial and taxation purposes. In supporting such a change in practice, the Commissioner said :

"I think it is only fair that if a taxpayer wants depreciation allowed he should show the genuineness

<sup>37</sup> ibid., 38.

<sup>38</sup> loc.cit.

<sup>39</sup> loc.cit.

<sup>40</sup> loc.cit.

of his claim."<sup>41</sup>

The Federated Sawmillers' Association submitted that the rates of depreciation applicable to assets generally used by its members were inadequate. They were also critical of the diminishing value method :

"Depreciation on diminishing value is quite inadequate, and is improperly spread over the life of the machinery ... the only equitable basis is an annual allowance ... on the prime cost of plant and machinery, at such rates as would wipe off this cost during the 'life' of these assets."<sup>42</sup>

One would have expected the submissions of the Commissioner and the Federated Sawmillers' Association to have produced a discussion by the Commission on the merits of maintaining separate sets of account for financial and taxation purposes and on the merits of the diminishing value method of depreciation. This was not so. The Commission ignored these issues in making its recommendations.<sup>43</sup>

#### THE 1940 DEPARTMENTAL REVIEW OF DEPRECIATION POLICY<sup>44</sup>

In 1940 taxpayers were invited to make submissions to the Department on rates of depreciation applicable to plant

<sup>41</sup>loc.cit.

<sup>42</sup>ibid., 184-5.

<sup>43</sup>The Commission was apparently satisfied with the Commissioner's undertaking to amend the rates applicable to sawmillers if it were proved that the existing rates were inadequate.

<sup>44</sup>Two factors may have influenced the Commissioner to review tax rates of depreciation on plant and machinery in 1940. First, New Zealand's war effort was financed, in part, from increased taxation. The maximum rate of company tax was increased in stages from 37.5 per cent in the 1937-38 income year to 44.5 per cent in the 1941-42 year. An "additional tax" of fifteen per cent was first levied in the 1938-39 year. This was increased to 33.33 per cent in the 1941-42 year. These increases were expected to be, and to a large extent were, temporary. For this reason, there was an additional incentive

and machinery.<sup>45</sup> The objective of the review was to provide :

"... insofar as practicable, for a reasonable general average rate of depreciation on plant and machinery."<sup>46</sup>

Prior to the closing date for submissions, the Commissioner distributed a proposed scheme and suggested that submissions be related to the proposal.<sup>47</sup> This scheme represented a more fundamental change in the Department's depreciation policy than a review of existing rates.

A limitation on the taxpayer's right to maintain separate records for financial and taxation purposes was the most significant feature of the proposal.<sup>48</sup> The taxpayer was entitled to claim in each year, for each class of asset, the lesser of :

- (1) the amount calculated by applying the schedule rate of depreciation to the written down value of the assets,

or,

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for companies to minimise taxable income during the war years. The timing of depreciation claims was therefore of greater importance to the Department than previously. Secondly, it was possibly felt that companies should not be permitted to distribute amounts which were not assessable for company or personal income tax. Prior to the Commissioner's 1940 scheme, this could have occurred if the accumulated depreciation claim exceeded the accumulated depreciation charge. Note that from the early 1930s until the 1941-42 income year dividends were treated as non-assessable income for taxation purposes. (Data on rates of taxation and the treatment of dividends were taken from the Taxation Review Committee, op.cit., 61 and 461-3.)

<sup>45</sup> A circular letter dated 26 January, 1940 signed by J.M. Park, Commissioner of Taxes, and a copy of the attached text of a public notice published in various newspapers. The review did not cover rates of depreciation on buildings as these were reviewed earlier and as a revised schedule first applied in the income year which commenced on 1 April, 1939.

<sup>46</sup> loc.cit.

<sup>47</sup> J.M. Park, circular letter dated 15 March, 1940.

<sup>48</sup> ibid., 1, par.2.

- (2) the amount of depreciation charged for financial reporting purposes.<sup>49</sup>

In the first year of the scheme, the schedule rate was to be applied to the cost net of accumulated provision for depreciation of each class of asset for financial reporting purposes at 1 April, 1940, or equivalent balance date.<sup>50</sup> A taxpayer who had previously charged depreciation in excess of that claimed was at a disadvantage under the proposed scheme. The New Zealand Society of Accountants submitted that companies in this category should be permitted to revalue their assets for financial reporting purposes.<sup>51</sup> The excess depreciation, resulting from the upward valuation, was to be credited to a depreciation reserve and disclosed on the liability side of the balance sheet.<sup>52</sup> The Society also submitted that in future periods depreciation charged in excess of the amount permitted as a deduction by the Department should be credited to the reserve and not be regarded as depreciation written-off (the asset account) for the purposes of the Commissioner's scheme.<sup>53</sup>

A joint committee of Christchurch bodies interested in depreciation policy suggested that the Commissioner should delete from the proposal his intention to consider each year separately.<sup>54</sup> This submission was intended to permit taxpayers

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<sup>49</sup> ibid., 1, par.4.

<sup>50</sup> ibid., 1, par.3.

<sup>51</sup> New Zealand Society of Accountants, Vigilance Committee, "Question of Depreciation : Reply to Commissioner's Letter", The Accountants' Journal, 18 (1940), 340-1.

<sup>52</sup> loc.cit.

<sup>53</sup> loc.cit.

<sup>54</sup> ibid., 341. This view was supported by the New Zealand Society of Accountants.

to adjust for depreciation charged in excess of that claimed in a later year. Under the Commissioner's scheme, an adjustment was prohibited until the relevant asset was discarded.

The substance of the Society's submissions was accepted by the Commissioner. Companies were entitled, under the revised scheme, to revalue their plant and machinery and to credit any excess depreciation to a depreciation reserve.<sup>55</sup> In contrast to the Society's submissions, the depreciation reserve was to be deducted from the diminishing value of the relevant assets in the company's balance sheet.<sup>56</sup> Those companies wishing in future years to charge more depreciation than that claimed were permitted to credit the excess to the depreciation reserve.<sup>57</sup> Further, a company was permitted to adjust for depreciation charged in excess of that claimed in a subsequent year. This was possible, as the revised scheme permitted depreciation to be written-off for taxation purposes through the profit and loss account, the depreciation reserve account or partly through each account.<sup>58</sup>

The above adjustments were intended to enable taxpayers to claim the maximum depreciation deduction :

"... without inflating assets or affecting the revenue account."<sup>59</sup>

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<sup>55</sup> Commissioner of Taxes, Depreciation : Schedule of Rates Fixed by the Commissioner of Taxes for Allowances in Income-Tax Assessments, Land and Income Tax Department, Wellington, 1940, 1, par.4(c).

<sup>56</sup>loc.cit.

<sup>57</sup>loc.cit.

<sup>58</sup>ibid., 1, par.4(d).

<sup>59</sup>ibid., 1, par.4(c).

It was necessary to charge against profit at least the maximum amount of depreciation permitted as a deduction for taxation purposes in order to minimise taxation, unless a depreciation reserve had previously been created. In that case, the charge against profit, together with the amount debited to the depreciation reserve, was required to be the same as the amount claimed.

The Commissioner's original and revised proposal liberalized the right of taxpayers to claim a deduction for a loss on selling or discarding a depreciable asset other than a building.<sup>60</sup> The loss was deductible whether the asset was disposed of in the normal course of business, on liquidation, or on the sale of the business.<sup>61</sup> In contrast, a loss on disposing of a building was not deductible.<sup>62</sup>

The computation of depreciation claims on the diminishing value method was reaffirmed.<sup>63</sup> Some assets which were previously depreciated for taxation purposes on the straight-line method were converted to the diminishing value method.<sup>64</sup> Buildings, bridges and wharves continued to be deductible on the straight-line method.<sup>65</sup>

Taxpayers were entitled to submit a case for special rates where :

<sup>60</sup> ibid., 3, par.7.

<sup>61</sup> loc.cit.

<sup>62</sup> loc.cit. Note also that depreciation recovered on the sale of a building was not assessable.

<sup>63</sup> ibid., 1, par.4.

<sup>64</sup> ibid., 5. For example, motor vehicles, other than those owned by licensed transport operators who previously charged depreciation on the straight-line method.

<sup>65</sup> loc.cit.

"... on account of special circumstances, rates in excess of those specified ... are considered warranted in respect of a substantial portion of the assets as a whole as against individual items or a minor portion thereof."<sup>66</sup>

When one considers that this scheme was adopted under the Commissioner's discretionary powers, one realises the extent of those powers.

In the Land and Income Tax Amendment Act 1945, the above scheme was given some legislative support. The following proviso was added to section 80(1) of the Land and Income Tax Act 1923 which authorised a deduction for depreciation:

"Without limiting the discretion of the Commissioner ... it is hereby declared that he has power and has always had power to refuse in whole or in part to allow any deduction ... in any case where he is not satisfied that complete and satisfactory accounts have been kept by or on behalf of the taxpayer and that sufficient depreciation has been provided in the taxpayer's accounts."<sup>67</sup>

This amendment supports the argument that the Commissioner's scheme was designed to force taxpayers to maintain satisfactory accounts. However, the amendment went further by requiring that sufficient depreciation be charged. The Commissioner interpreted this provision to imply that "sufficient depreciation" was not less than "such deduction for depreciation as he considered just". Moreover, directors were forced to imply that the deduction for depreciation which was sufficient and just in the Commissioner's opinion, also disclosed a "true and correct" view in their opinion.

Limitations on the taxpayer's right to charge such ordinary depreciation as the taxpayer thought proper remained

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<sup>66</sup>ibid., 3, par.8.

<sup>67</sup>Land and Income Tax Amendment Act 1945, s.16(3) (Emphasis added).

a part of the Department's policy until 31 March, 1968. The situation was complicated by the introduction of special depreciation in 1945 and initial depreciation in 1950. These developments are discussed below.

#### INTRODUCTION OF INITIAL AND SPECIAL DEPRECIATION ALLOWANCE

As part of the 1945 Budget proposals, the Hon. Walter Nash announced the introduction of a special depreciation allowance of twenty per cent on the cost of new plant, machinery and premises acquired or erected on, or after, 1 April, 1946.<sup>68</sup> Although the allowance was to be spread evenly over five years and was in addition to ordinary depreciation, special depreciation was to be taken into consideration in determining the diminished value of the asset for ordinary depreciation purposes.<sup>69</sup>

The Minister informed Parliament that :

"Our objective is the maximum equipment we can get at the earliest possible date, so that we can expand our production. Because the obtaining of that equipment, plant, and buildings on to-day's basis means higher prices we are providing for a greater proportion of depreciation allowance than is normal."<sup>70</sup>

Given the expectation that prices would fall in the future, a businessman would tend to defer capital expenditure. The Government, on the other hand, hoped that special depreciation would offset the high prices and reduce risks associated with

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<sup>68</sup> Hon. Walter Nash, "Financial Statement", Appendix to the Journals of the House of Representatives, 1945, B-5, 14-5.

<sup>69</sup> loc.cit.

<sup>70</sup> Hon. Walter Nash, New Zealand Parliamentary Debates, 269 (1945), 786-7.

a possible fall in future prices.<sup>71</sup> Thus the main reason for the introduction of special depreciation was to compensate for price rises.

When legislation was introduced to Parliament, the Minister revealed that the rate of special depreciation had been increased to thirty per cent, spread in the following manner :

ten per cent in the first year,  
 eight per cent in the second year,  
 six per cent in the third year,  
 four per cent in the fourth year, and  
 two per cent in the fifth year.<sup>72</sup>

In addition, the commencement date was advanced to 1 April, 1945, although the deduction for the 1945-46 income year was granted in the 1946-47 year.<sup>73</sup>

The Act provided that :

"Where the Commissioner is satisfied that any premises, plant or machinery has been acquired, erected, installed or extended by a taxpayer on or after [1 April, 1945] and not later than [31 March, 1948] the Commissioner may, in his discretion, in calculating the assessable income derived by the taxpayer, allow ... such deduction by way of special depreciation in accordance with this section as he thinks just."<sup>74</sup>

The Commissioner was also given authority, subject to his

<sup>71</sup>It is suggested, however, that limited capacity in those industries which produced capital equipment in New Zealand and other countries was a more significant constraint on capital expenditure than expectations relating to future prices. The shortage of capacity was a result of the War and the rearmament programmes adopted overseas.

<sup>72</sup>Hon. Walter Nash, New Zealand Parliamentary Debates, 272 (1945), 289-90.

<sup>73</sup>Land and Income Tax Amendment Act 1945, ss.15(1) and (7).

<sup>74</sup>ibid., s.15(1) (Emphasis added).

discretion, to refuse any claim for special depreciation in any case where he was not satisfied that :

- (a) complete and satisfactory accounts had been kept, and
- (b) sufficient depreciation had been provided for in the taxpayer's accounts.<sup>75</sup>

Although this section gave the Commissioner powers similar to those which he had in respect of ordinary depreciation, he adopted a blanket ruling and did not exercise his discretion. In the Commissioner's opinion, it was now necessary to charge special depreciation in addition to ordinary depreciation before he would concede that "sufficient" depreciation had been provided in the taxpayer's accounts. Furthermore, a just claim for depreciation now included a claim for special depreciation.<sup>76</sup> In contrast, ordinary tax rates of depreciation were deemed to provide a sufficient allowance for fair wear and tear and for obsolescence for price control purposes.<sup>77</sup>

From 1 April, 1950 initial depreciation was deductible at the rate of thirty per cent on the cost of;

- (a) plant, machinery or equipment acquired or installed to be used wholly for an agricultural or farming business, and
- (b) buildings acquired or erected to provide accommodation for employees engaged in the

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<sup>75</sup>ibid., s.15(5).

<sup>76</sup>G.J. Schmitt, "Tax Incentives", in Victoria University of Wellington, Department of Accountancy, 19th Advanced Accountancy Seminar, Victoria University of Wellington, 1970, 8, par.25.

<sup>77</sup>During the course of an interview held in December, 1973 an official of the Department of Trade and Industry informed the writer that ordinary tax rates of depreciation have been recognised as an admissible cost for price control purposes since prices were first controlled. There are a number of minor exceptions to this general rule. See Chapter XIV.

above businesses.<sup>78</sup>

Unlike special depreciation, the full claim for initial depreciation was available in the year in which the qualifying asset was first used. Initial depreciation, which was allowed in addition to ordinary depreciation and as an alternative to special depreciation in a limited number of instances, was deductible at the discretion of the Commissioner who was authorised to allow such deduction as he thought just.

Although the legislation did not give the Commissioner explicit authority to refuse a deduction where he was of the opinion that "sufficient depreciation" had not been provided in the taxpayer's accounts, the Commissioner applied the section as if such a provision had been included. Apparently relying on his discretionary authority, the Commissioner did not consider a deduction for initial depreciation to be "just" unless an equivalent charge was made in the taxpayer's accounts.<sup>79</sup>

Initial depreciation was extended in 1953 to allow a deduction on the cost of a new building acquired or erected on, or after, 1 April, 1953 to provide accommodation for an employee engaged in a business other than a farming or agricultural business.<sup>80</sup> In line with previous practice, the deduction in the first income year in which the allowance applied (1953-54) was granted in the following year.<sup>81</sup>

In 1953 the Commissioner was also given retrospective

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<sup>78</sup>Land and Income Tax Amendment Act (No.2) 1950, s.8.

<sup>79</sup>G.J. Schmitt, op.cit., 8-9, pars.24-9.

<sup>80</sup>Land and Income Tax Amendment Act 1953, s.12.

<sup>81</sup>loc.cit.

authority to assess tax on any initial depreciation recovered on the disposal of an asset. This provision applied to buildings, notwithstanding that ordinary depreciation recovered on the sale of buildings was not assessed.<sup>82</sup>

THE REPORT OF THE TAXATION COMMITTEE 1951

A twelve-man committee, appointed to inquire into New Zealand's income tax system, presented its report in 1951.<sup>83</sup>

The committee supported the principle of depreciation deductions in reporting that :

"All physical assets lose their value through use and age, some more rapidly than others. This process of wear, tear, and obsolescence has been recognised for taxation purposes as a cost of production and is covered by depreciation allowances."<sup>84</sup>

With the post-war inflation in mind, the report went on to state :

"Normal depreciation allowances are limited to the original cost of the asset. To the extent that the allowance does not provide adequate funds to replace the producing assets, capital is lost."<sup>85</sup>

Nevertheless, the committee considered that a change to a replacement cost basis of allowing depreciation for taxation purposes would be impractical. As an alternative, the committee recommended that :

"... in place of the present special and initial depreciation allowances and schedule rates ... in respect of plant, machinery, equipment and fittings, taxpayers shall be entitled at their discretion to allowances for depreciation at rates up to a maximum

<sup>82</sup>loc.cit.

<sup>83</sup>Taxation Committee, "Taxation", Appendix to the Journals of the House of Representatives, 1951, 1, B-5, 1-134, (Chairman: T.N. Gibbs).

<sup>84</sup>ibid., 41, par.149.

<sup>85</sup>ibid., 42, par.279.

of 20 per cent per annum on the diminishing value of such assets."<sup>86</sup>

The committee added that in respect of plant, machinery, equipment and fittings the diminishing value method :

"... seemed to be well justified. It gives a better spread of depreciation over the life of the asset in that, on the one hand, the allowance is greater in the years when the asset is new and requires limited expenditure for maintenance, and, on the other hand, the allowance is less when the asset is old and requires increased expenditure on maintenance."<sup>87</sup>

In relation to buildings, the committee recommended that the time limits on special and initial depreciation allowances be abolished<sup>88</sup> and (subject to the above recommendation) that :

"... the standard rates and existing practice of the Department in regard to depreciation of buildings shall continue."<sup>89</sup>

Finally, we should note that the committee, while accepting the Commissioner's need for discretionary powers, recommended that a taxpayer be given the right to appeal against the exercise of such powers.<sup>90</sup> It was not until 1960, when the Boards of Review were established and the Land and Income Tax Act 1954 was amended (to permit an appeal against the Commissioner's discretion), that this recommendation was actioned.

The committee's view that the time limits on special and initial depreciation should be abolished was based on the fact that inflation had continued and that these concessionary rates of depreciation were essential as ordinary rates were

<sup>86</sup> ibid., 70, par.287.

<sup>87</sup> ibid., 70, par.288.

<sup>88</sup> ibid., 71, par.291.

<sup>89</sup> loc.cit. (Emphasis omitted.)

<sup>90</sup> ibid., 102, par.435.

inadequate in times of rising prices.

The committee was in favour of greater discretion for taxpayers in determining rates of depreciation. Although the merging of taxation and financial records in respect of depreciation policy was not discussed, the committee recommended that taxpayers choose any rate up to a maximum of twenty per cent. Had this recommendation been accepted, the past history of depreciation policy in New Zealand and the desire of taxpayers to minimise taxation would suggest that they would have claimed and charged depreciation at the maximum rate.

#### DEPRECIATION POLICY 1951-1967

The terminating dates for initial and special depreciation concessions were extended annually by one year until 1955. In that year, inflation was given as the reason for withdrawing special depreciation<sup>91</sup> on buildings (with the exception of farm and agricultural buildings) and other than where a firm contract had been entered into on, or before, 22 July, 1955. Special depreciation had previously been extended to 31 March, 1956.<sup>92</sup>

In the 1956 Budget, the Minister said :

"Special depreciation for taxation purposes, which has served a useful purpose in stimulating industrial expansion, would be anomalous in the changed circumstances."<sup>93</sup>

Although special depreciation on plant, machinery and

<sup>91</sup>It is interesting to note that special depreciation was introduced to compensate for the effects of inflation and that it was withdrawn to aid in the control of inflation.

<sup>92</sup>Hon. J.T. Watts, "Financial Statement 1955", Appendix to the Journals of the House of Representatives, 1955, 1, B-6, 12.

<sup>93</sup>Hon. J.T. Watts, "Financial Statement", Appendix to the Journals of the House of Representatives, 1956, 3, B-6, 20.

farm buildings had been extended in 1955 to on, or before, 31 March, 1957, the legislature again withdrew a concessionary rate of depreciation before its expiry date.

In the 1958 Budget of the Hon. A.H. Nordmeyer initial depreciation was withdrawn. The Minister said :

"For some years past there has been an initial depreciation allowance to a small section of tax-payers on restricted classes of assets. Government has decided that there is not now the same justification for the initial depreciation allowance."<sup>94</sup>

This concession was continued for firm contracts made on, or before, 26 June, 1958 in the case of farm equipment. Initial depreciation on employee accommodation was continued to include accommodation completed on, or before, 31 March, 1959. Of all the assets covered by special and initial depreciation, only initial depreciation on employee accommodation was not withdrawn before its expiry date.

By 1959, a "just" claim and a "sufficient" charge for depreciation consisted of ordinary depreciation for those companies which had not entered binding contracts entitling them to concessionary rates. These companies were now in the same position as they were between 1 April, 1940 and 31 March, 1945.

An extensive revision of maximum ordinary tax rates of depreciation was undertaken in 1957. A wide range of rates was increased with effect from the income year which commenced on 1 April, 1957.<sup>95</sup>

The Land and Income Tax Amendment Act 1959 expanded the

<sup>94</sup>Hon. A.H. Nordmeyer, "Financial Statement", Appendix to the Journals of the House of Representatives, 1958, 1, B-6, 26.

<sup>95</sup>Selected ordinary tax rates of depreciation included in the 1957 schedule are compared with those of the 1940 schedule in Appendix A.

legislation relating to the assessment of depreciation recovered on the sale of a depreciable asset. The Commissioner was given authority, subject to certain exceptions, to limit the deduction for depreciation granted to a purchaser of used building to the maximum amount which the previous owner would have been entitled to claim.<sup>96</sup> The compulsory acquisition of an asset by the Crown, or a Local Authority, was deemed to be a sale for the purposes of determining whether depreciation had been recovered.<sup>97</sup> An amendment was also made to permit a taxpayer to deduct depreciation recovered on the disposal of a depreciable asset (other than a building) from the cost of a replacement asset.<sup>98</sup> The reduced cost of the replacement asset was to be depreciated in the normal manner.

In 1960, the Minister of Finance considered that the balance of payments crisis had been sufficiently overcome to justify the re-introduction of special depreciation on plant and machinery (including passenger-service vehicles) acquired, installed or extended on, or after, 1 April, 1960 at a rate of twenty per cent.<sup>99</sup> Unless the Commissioner determined otherwise, the concession was to be spread over five years at six, five, four, three and two per cent respectively.

Whereas special depreciation was introduced in 1945 to

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<sup>96</sup>Land and Income Tax Amendment Act 1959, s.14(1).

<sup>97</sup>ibid., s.17. This amendment overruled the decision in John Hudson and Co. Ltd. v. Kirkness (1954) 1 All E.R. Rep.29, in which it was held that a compulsory acquisition was not a sale. Section 117 was also amended to permit the assessment of depreciation recovered where a taxpayer "sells or otherwise disposes" of an asset at a "price or for a consideration".

<sup>98</sup>ibid., s.16.

<sup>99</sup>Land and Income Tax Amendment Act 1960, s.15.

offset high prices it was re-introduced :

"To encourage the modernisation and expansion of plant and equipment in industry."<sup>100</sup>

Under section 114A, which authorised the deduction of special depreciation, the Commissioner was given authority to allow such deduction as he thought fit. In contrast, the Land and Income Tax Amendment Act 1945 permitted such deduction as the Commissioner thought just. The Commissioner was again given authority to disallow any deduction where proper books of account were not kept and where sufficient depreciation was not charged in the taxpayer's accounts.

Initial depreciation reappeared from 1 April, 1961 at a rate of twenty per cent on the cost of buildings acquired or erected to provide employee accommodation.<sup>101</sup> As with the previous allowance for initial depreciation, there was no provision requiring "sufficient depreciation" to be provided in the taxpayer's accounts. However, the Commissioner again disallowed any claim for initial depreciation which had not been charged in the taxpayer's financial records.

From 1 April, 1962, special depreciation was extended to employee accommodation as an alternative to initial depreciation. The deduction for special depreciation on plant, machinery and buildings was permitted over a four year period at the rate of ten, five, three and two per cent respectively.<sup>102</sup> In addition, section 114A was amended to give the Commissioner power to refuse a deduction where proper accounts were not

<sup>100</sup> Hon. A.H. Nordmeyer, New Zealand Parliamentary Debates, 322 (1960), 807.

<sup>101</sup> Land and Income Tax Amendment Act 1961, s.6.

<sup>102</sup> Land and Income Tax Amendment Act (No.2) 1962, s.7.

kept or where sufficient depreciation was not provided.<sup>103</sup> Prior to this amendment it would have appeared that, but for the Commissioner's discretionary authority, the absence of both requirements was necessary before he had authority to disallow a deduction.

The Commissioner's 1940 depreciation scheme requiring taxpayers to claim no more ordinary depreciation than that charged and its subsequent application to initial and special depreciation, was the dominant feature of depreciation accounting until 1963. On 3 December of that year, the Minister of Finance announced that, with effect from the income year commencing on 1 April, 1963, companies would not be required to charge special and initial depreciation in order to qualify for these concessions.<sup>104</sup> This policy implemented part of an Export Development Conference recommendation that all depreciation claims be granted without reference to the amount of depreciation provided in a taxpayer's financial accounts.<sup>105</sup>

The new policy was subject to :

"... the Commissioner ... being satisfied that a company's accounts adequately disclose the position. Before agreeing the Commissioner will require to be assured by the company's auditor that he is satisfied that fair and proper disclosure has been made to the shareholders in the company's accounts."<sup>106</sup>

This requirement was apparently made under the Commissioner's discretionary powers. It is doubtful whether the Commissioner

<sup>103</sup>loc.cit.

<sup>104</sup>Hon. H.R. Lake, "Tax Exemption Concession", Statements by Ministers of the Crown, 23/63, 10.

<sup>105</sup>G.J. Schmitt, "Depreciation : Tax Claims and Accounting Charges", The Accountants' Journal, 49 (1971), 229-30.

<sup>106</sup>Hon. H.R. Lake, op.cit., 10 (Emphasis added).

has, in fact, enforced disclosure of tax charges and claims in all cases where the new policy was applied.<sup>107</sup>

In announcing the change in policy, the Minister apparently conceded that the previous policy may have distorted reported income :

"It is expected that this proposal will enable companies to take full advantage of the Government's incentives for development and growth without unduly distorting their current trading results."<sup>108</sup>

An additional depreciation concession was introduced in 1964, which, unlike previous legislation granting concessionary rates of depreciation, did not require proper books of account to be kept or sufficient depreciation to be written-off in the taxpayer's accounts.<sup>109</sup>

As it was possible for special and initial depreciation to be withdrawn after a taxpayer was committed to a capital expenditure programme and before the erection, acquisition, installation or use of the relevant assets, submissions were made to Government that these allowances should continue after the terminating date for approved development plans. The Government accepted this recommendation.<sup>110</sup> To obtain the concession after its expiry date, it was necessary to have a development plan approved and to enter into a firm contract, or to acquire, install or erect a substantial part of the assets included in the plan, before the concession expired.<sup>111</sup>

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<sup>107</sup>See Chapter V.

<sup>108</sup>Hon. H.R. Lake, op.cit., 10.

<sup>109</sup>The particular allowance referred to above is granted under section 114B of the Land and Income Tax Act 1954.

<sup>110</sup>Hon. R.D. Muldoon, "Financial Statement", Appendix to the Journals of the House of Representatives, 1967, 1, B-6, 20.

<sup>111</sup>Land and Income Tax Amendment Act (No.2) 1967, ss.12 and 15.

THE 1967 REVIEW OF TAXATION

The Taxation Review Committee reported its findings on a study of taxation in New Zealand in October, 1967.<sup>112</sup> The committee discussed the various methods of depreciation and reported that :

"In principle, taxpayers should be given the option of using either the straight-line or the diminishing value method."<sup>113</sup>

However, the committee recommended that optional methods of calculating depreciation for taxation purposes should not be introduced. In evaluating the methods used for taxation purposes, the committee said that :

"... it seems that the general body of taxpayers is content with the diminishing value method."<sup>114</sup>

The concept of depreciation, which has remained unchanged since 1891, was quoted with approval, although the committee was of the opinion that obsolescence was assuming a greater importance. Nevertheless, the committee was able to report that :

"It appears that taxpayers are generally satisfied with the present schedule of rates applicable to the depreciation of plant and machinery. Our opinion is that they are adequate."<sup>115</sup>

Although submissions were made that the rates for buildings were inadequate, the committee, after noting that buildings generally appreciate in value and that special rates are available in certain circumstances, concluded that the ordinary rates as applied to buildings were adequate.

<sup>112</sup>Taxation Review Committee, op.cit., 1-582.

<sup>113</sup>ibid., 243, par.607.

<sup>114</sup>loc.cit.

<sup>115</sup>ibid., 244, par.609.

On the question of special and initial depreciation, the committee stated that :

"The allowances discriminate between taxpayers and between particular kinds of investment and as a result distortions are entered into the economy." <sup>116</sup>

This comment was followed by a recommendation that such allowances should be used sparingly and should be subject to adequate control. <sup>117</sup>

The committee recommended that depreciation allowances permitted for taxation purposes should be deductible without reference to the amount of depreciation charged by the taxpayer. <sup>118</sup> And that :

"... the Companies Act 1955 should be amended to provide that companies taking advantage of this depreciation procedure should be required to disclose the difference between the amount of depreciation claimed for tax purposes and the amount written-off in the accounts, and also to state clearly the consequential taxation effects." <sup>119</sup>

The first of these recommendations was accepted by Government. Section 13 of the Land and Income Tax Amendment Act 1968 deleted the words "or that sufficient depreciation has been provided for in the taxpayer's accounts" from the following sections: <sup>120</sup>

- (a) 113(2) ordinary depreciation,
- (b) 113 B(3) additional depreciation on certain assets used for scientific research,

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<sup>116</sup>ibid., 251, par.631.

<sup>117</sup>ibid., par.632.

<sup>118</sup>ibid., 253, par.637.

<sup>119</sup>ibid., par.638.

<sup>120</sup>This legislative amendment was not necessary. All that was required was that the Commissioner amend his interpretation of "sufficient" under his discretionary authority. This he did in 1963 and prior to that when special depreciation was introduced and withdrawn. See G.J. Schmitt, "Depreciation : Tax Claims and Accounting Charges", op.cit., 229.

- (c) 113 D(3) additional depreciation on fishing boats,
- (d) 114 A special depreciation on plant and machinery and certain buildings.

Although the Government announced that the Companies Act would be amended, an amendment has not yet been introduced to Parliament.<sup>121</sup>

The Government did not accept the committee's view that special and initial depreciation should be withdrawn. Although these concessions have been merged, supplementary and additional depreciation concessions have since been extended. As these concessions discriminate between taxpayers and particular kinds of capital expenditure, they would have been unacceptable to the Ross Committee.

#### DEPRECIATION POLICY SINCE 1967

In 1968, section 113 of the Land and Income Tax Act 1954 was amended to exclude a deduction for the fact of a building (other than a temporary building) becoming obsolete or useless.<sup>122</sup> This amendment gave legislative support to a long-standing departmental ruling that a loss on the sale of premises (other than temporary buildings) is not deductible.<sup>123</sup> We have already seen that the loss on discarding an asset is regarded as an allowance for obsolescence.<sup>124</sup>

<sup>121</sup>A recommendation to amend the Companies Act, similar to that made by the Ross Committee, was made by the Special Committee to Review the Companies Act. See Special Committee Appointed to Review the Companies Act, Final Report, Government Printer, Wellington, 1973, 100-1, par.251 (Chairman: Hon. Mr. Justice Macarthur).

<sup>122</sup>Land and Income Tax Amendment Act (No.2) 1968, s.22(1).

<sup>123</sup>J.L. Fahy, "Land and Income Tax Amendment (No.2) Act 1968", The Accountants' Journal, 47 (1969), 376.

<sup>124</sup>A loss on the sale of a building is deductible if the building was acquired for speculation or resale at a profit.

The Forestry Committee of the National Development Conference recommended that buildings which were in essence an integral part of the plant they housed should be depreciated at the rate applicable to that plant.<sup>125</sup> This recommendation was accepted by the Government and the Land and Income Tax Amendment Act 1969 amended the definition of a temporary building to include :

"Any building which -

- (c) In the opinion of the Commissioner -
  - (i) Was erected, and is used, for the purpose of housing specific plant or machinery; and
  - (ii) Will necessarily require to be demolished in effecting the removal or replacement of that plant or machinery."<sup>126</sup>

The Commissioner set a general rate of ten per cent on the diminishing value method for such buildings. Unlike ordinary depreciation recovered on the disposal of other buildings, that recovered on the disposal of temporary buildings is assessable.

Section 13 of the Land and Income Tax Amendment Act 1973 granted a meat export slaughterhouse or a meat-packing house the right to capitalise and depreciate the cost of demolishing a building previously used wholly for the purposes of those businesses, and demolished for the purpose of erecting a replacement building or altering or extending an existing building to satisfy certain hygiene standards. The written down value of the demolished building for taxation purposes is added to the cost of the new building and depreciated in the normal manner.

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<sup>125</sup>Report of the Forestry Committee to the Plenary Session of National Development Conference, Government Printer, Wellington, 1969, 33, par.104 (Chairman: A.L. Poole).

<sup>126</sup>Land and Income Tax Amendment Act 1969, s.3.

The same Act provided that where a suspensory loan or a grant is made by the Government for the purpose of acquiring specific assets, the amount of the grant or loan is to be deducted from the cost of the relevant assets for the purpose of calculating depreciation claims.<sup>127</sup>

Few changes were made in the Inland Revenue Department's depreciation policy between 1968 and 1973. Despite this, the 1973 Budget suggested that considerable changes may be forthcoming.<sup>128</sup> The Minister stated that concessionary rates of depreciation would be reviewed with a view to determining the most appropriate form of assistance.<sup>129</sup> Moreover, a new emphasis on cash grants and selective assistance was evident.<sup>130</sup>

In the 1974 Financial Statement it was stated that "better economic performance depend[s] fundamentally on increased productivity"<sup>131</sup> and that policies directed toward that goal are to be formulated.<sup>132</sup> The importance of increased exports was also emphasised.<sup>133</sup> Some components of the new policy were announced. Encouragement is to be given to industries to identify and promote products and services with growth potential, additional technical assistance is to be made available to firms, the use of natural resources is to

<sup>127</sup>Land and Income Tax Amendment Act 1973, s.14(3).

<sup>128</sup>Hon. W.E. Rowling, Financial Statement, Government Printer, Wellington, 1973, 39.

<sup>129</sup>loc.cit.

<sup>130</sup>ibid., 15.

<sup>131</sup>Hon. W.E. Rowling, Financial Statement, Government Printer, Wellington, 1974, 4.

<sup>132</sup>loc.cit.

<sup>133</sup>loc.cit.

be expanded.<sup>134</sup> Firms will be encouraged to expand those activities which are in the national interest and to phase out those activities which are inefficient.<sup>135</sup>

Under the new policy additional, special and supplementary depreciation and the investment allowance, together with the first year ordinary depreciation claim, will be replaced, with effect from 1 April, 1975, by a single first year allowance.<sup>136</sup> In the second and subsequent years ordinary tax rates of depreciation will continue to apply. Although the first year allowance will not have a terminating date, the Minister stated that :

"An advantage of the new simplified system is that the rate of first year allowance for each class of asset can be altered from time to time according to the degree of incentive required."<sup>137</sup>

The new first year allowances are as follows:

	per cent
New plant and machinery	
Auckland and Wellington metropolitan areas:	40
Elsewhere:	60
Secondhand plant and machinery	
Auckland and Wellington metropolitan areas:	30
Elsewhere:	50
New farm buildings:	40
Capital expenditure to meet hygiene standards on meat export slaughterhouses, meat-packing houses, fish processing buildings and fish cool stores:	30

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<sup>134</sup> ibid., 5-6.

<sup>135</sup> loc.cit.

<sup>136</sup> ibid., 11.

<sup>137</sup> ibid., 12.

per cent

Meat export cool stores, employee accommodation, approved new tourist accommodation projects and certain facilities in existing licensed hotels: 22<sup>138</sup>

Although a lower rate of first year allowance on plant and machinery applies in Auckland and Wellington metropolitan areas, one might have expected a far more selective programme in the light of the 1973 Financial Statement. Moreover, there is no provision for a taxpayer who is unable to absorb the first year allowance to receive a cash grant as an alternative.

Taxpayers who entered into a binding contract on, or before, 30 May, 1974 and acquired qualifying assets on, or after, 1 April, 1975 may elect to receive the allowances applicable prior to the introduction of the new scheme or to receive the first year allowances given above.<sup>139</sup>

Depreciation concessions, which were originally introduced to compensate for inflation arising from the special conditions of the early post-war period and which were re-introduced to encourage production, will be used, in a modified form, from 1 April, 1975 to encourage increased productivity. It will be argued in a later chapter that to the extent that depreciation concessions affect capital expenditure decisions, they encourage the accumulation of

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<sup>138</sup> loc.cit. It is doubtful whether this scheme could have been successfully introduced under the pre-1963 rule that accumulated depreciation claims be limited to the accumulated depreciation charge. The reported profit before- and after-tax of companies undertaking significant capital expenditure programmes may have been reduced to such an extent that the results would have been unacceptable to shareholders and other providers of finance.

<sup>139</sup> loc.cit.

qualifying assets rather than their efficient use.<sup>140</sup>

The period from 1960 to the present saw the re-introduction of concessionary depreciation allowances and the return of the taxpayers' freedom to claim ordinary and concessionary rates of depreciation without reference to the amount of depreciation charged for financial reporting purposes.

#### SUMMARY

For taxation purposes a deduction for depreciation has been permitted since income was first taxed. The concept of depreciation, the wide discretionary powers of the Commissioner and the establishment of schedule rates in consultation with taxpayers are all features of the Inland Revenue Department's current depreciation policy which can be traced to the original policy, first applied in the 1892-93 income year. The diminishing value method was adopted under the Commissioner's discretionary authority in the 1892-93 income year. Although other methods have been used since that year, the diminishing value method continues to be the most common method of depreciating plant and machinery.

Prior to 1940, a taxpayer was free to determine his own depreciation policy for financial reporting purposes. However, difficulties in administering the Department's depreciation policy led to a restriction of this freedom under the Commissioner's discretionary powers. From 1 April, 1940 taxpayers were required to limit depreciation claimed on plant to the lesser of the amount charged or the amount calculated according to the schedule rates. Concessionary rates of

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<sup>140</sup> See Chapter IX.

depreciation, which were first introduced in 1945 and which have applied in almost all years since, were required to be charged in order to qualify for a claim. This situation prevailed until the income year which commenced on 1 April, 1963, when claims for special and initial depreciation were granted without requiring similar amounts to be charged. Since the 1968-69 income year, depreciation policy for financial reporting purposes has been completely liberated from the Inland Revenue Department's depreciation policy.

Although concessionary rates of depreciation were substantially expanded and diversified in the 1960s and early 1970s, most of these are to be replaced by a single first year allowance. This scheme will apply from 1 April, 1975.

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CHAPTER III  
DEPRECIATION AND THE COMPANIES ACT

ABSTRACT

The Companies Act 1901 required the directors of public companies to provide shareholders with an audited balance sheet. The 1955 Act made it mandatory for the directors to present an audited profit and loss account and balance sheet to the shareholders, and substantially expanded the amount of information required to be disclosed in the Annual Accounts. The basis of valuation and the method of depreciation are to be determined by the directors. Any depreciation in excess of that reasonably necessary for the purpose is required to be treated as a reserve that is, as an appropriation of profits.

To minimise taxation under the Commissioner of Taxes' 1940 scheme, it was necessary for the accumulated depreciation charge for each class of asset to be not less than the accumulated depreciation claim computed at maximum ordinary and (if applicable) special tax rates of depreciation. This may have resulted in the charging of depreciation which was in excess of that which in the opinion of the directors was reasonably necessary for the purpose and the creation of secret reserves, the prevention of which was a major intention of the Eighth Schedule.

Since the income year which commenced on 1 April, 1968 depreciation claims have been granted without reference to the amount of depreciation charged. Directors are now able to comply with the Act without making interest-free loans to the government.

INTRODUCTION

As a company is a creature of law, one might expect company law to be a significant influence on the treatment of depreciation in the Annual Reports of listed companies. The impact of the Companies Act on accounting for depreciation is assessed in this chapter. First, the relevant provisions of that Act are summarised. Secondly, the implications of those provisions for the Commissioner of Taxes' 1940 scheme for the treatment of depreciation are examined.

THE COMPANIES ACT

Disclosure of information on the activities of companies was intended to play a major role in protecting shareholders, creditors and others from loss as a result of fraud and other

malpractices.<sup>1</sup> It is therefore surprising that public company directors were not required to provide shareholders with an audited copy of the company's balance sheet prior to 1901.<sup>2</sup>

Audited profit and loss accounts were not mandatory under the Companies Act until 1 January, 1957.<sup>3</sup>

Initially, an auditor was required to express an opinion on the "truth and correctness" of the balance sheet.<sup>4</sup> The 1955 Act replaced this standard with what was then regarded as a more flexible standard<sup>5</sup> requiring the accounts to give a "true and fair view" of the company's state of affairs and of its results.<sup>6</sup>

In addition to this overriding standard, accounts prepared under the 1955 Act were required to comply, so far as applicable, with minimum disclosure requirements specified in the Eighth Schedule.<sup>7</sup> These provisions were designed to prevent, among other things, the creation of secret reserves.<sup>8</sup>

<sup>1</sup>H.C. Edey and Prot Panitpakdi, "British Company Accounting and the Law 1844-1900", in A.C. Littleton and B.S. Yamey (eds.), Studies in the History of Accounting, Sweet and Maxwell, London, 1956, 357-60.

<sup>2</sup>Companies Act 1901, s.27(3).

<sup>3</sup>This was the date from which the Companies Act 1955 became effective. See s.166.

<sup>4</sup>For example, the Companies Act 1901 and 1933, ss.27 and 141 respectively.

<sup>5</sup>See T.R. Johnston, "Is the Standard 'True and Fair View of the State of Affairs' Attainable in a Balance Sheet?" in Victoria University of Wellington, 15th Advanced Accountancy Seminar, Victoria University of Wellington, Wellington, 1966, 7.

<sup>6</sup>Companies Act 1955, s.166.

<sup>7</sup>ibid., ss.153(2) and 156(3).

<sup>8</sup>L.C.B. Gower, The Principles of Modern Company Law, Stevens, London, 1957, 424.

In the past, such reserves had been used to materially misrepresent the financial state of some companies.<sup>9</sup>

A provision is defined for the purposes of the Schedule to

"... mean any amount written-off or retained by way of providing for depreciation, renewals, or diminution in value of assets or retained by way of providing for any known liability of which the amount cannot be determined with substantial accuracy."<sup>10</sup>

and a reserve :

"... shall not ... include any amount written-off or retained by way of providing for depreciation, renewals, or diminution in value of assets or retained by way of providing for any known liability."<sup>11</sup>

Moreover where :

"Any amount written-off or retained by way of providing for depreciation, renewals or diminution in value of assets, not being an amount written-off or retained before the 1st day of September 1955 ... is in excess of that which in the opinion of the directors is reasonably necessary for the purpose, the excess shall be treated for the purposes of this Schedule as a reserve and not as a provision."<sup>12</sup>

The effect of the above provisions of the Eighth Schedule is that a company may not treat depreciation in excess of that reasonably necessary for the purpose in the same manner as that considered reasonably necessary. The former is required to be treated as a reserve and should therefore be appropriated.<sup>13</sup> This applies to the depreciation charge for the period and to the accumulated depreciation

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<sup>9</sup>loc.cit.

<sup>10</sup>Companies Act 1955, Eighth Schedule, par.2(1).

<sup>11</sup>loc.cit.

<sup>12</sup>ibid., par.2(2).

<sup>13</sup>G.J. Schmitt, "Depreciation : Tax Claims and Accounting Charges", The Accountants' Journal, 49 (1971), 228-9.

provision. The question of what is a reasonably necessary provision is a matter for the directors to decide.

The Schedule also provides for the method or methods of arriving at the amount of fixed assets to be disclosed.<sup>14</sup> The method is accumulated cost or valuation less accumulated depreciation.<sup>15</sup> This method does not apply to intangible assets or investments or where the replacement of fixed assets is provided wholly or partly by charging the cost of replacement assets to a provision for renewals or where the cost of replacements is charged direct to revenue.<sup>16</sup> For the purposes of the Act, the amount of fixed assets (net of depreciation) at the commencement of the Act could be treated as a valuation of the assets on that date.<sup>17</sup>

In the balance sheet the accumulated cost or valuation of each class of fixed assets and the related accumulated depreciation provision is required to be disclosed.<sup>18</sup> The amount charged to revenue by way of provision for depreciation, renewals or diminution in value of fixed assets is required to be stated separately. If a provision for depreciation or renewals is not charged against revenue, that fact must be stated.<sup>19</sup> Similarly, if depreciation or the replacement of fixed assets is provided for by some method other than a depreciation charge or provision for renewals, the method by

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<sup>14</sup> Companies Act 1955, Eighth Schedule, par.3(3).

<sup>15</sup> ibid., 11(1).

<sup>16</sup> ibid., par.11(2).

<sup>17</sup> ibid., par.11(1).

<sup>18</sup> ibid., par.11(3).

<sup>19</sup> ibid., par.15(2).

which it is provided for must be disclosed.<sup>20</sup>

The aggregate amounts respectively of material capital reserves, revenue reserves and provisions (other than provisions for depreciation) are to be disclosed under separate headings.<sup>21</sup> The source or sources of any increases, or the application or applications of any decrease, in such reserves must be stated.<sup>22</sup> In the profit and loss account the amount set aside or proposed to be set aside to or withdrawn from reserves is required to be disclosed.<sup>23</sup>

The Schedule also requires any material change in the basis of accounting to be disclosed by way of a note to the accounts, if not otherwise stated.<sup>24</sup>

The Companies Act allows directorates considerable freedom in accounting for depreciation, renewal or replacement of fixed assets. They are, however, required to disclose certain information on the policies and practices adopted. For this reason, the Act has not been a major influence on the policies and practices adopted, but it has had some impact on the standard of disclosure adopted by public companies.<sup>25</sup>

#### THE COMMISSIONER OF TAXES' 1940 SCHEME AND THE COMPANIES ACT

The Commissioner of Taxes' 1940 scheme did not affect the amount at which depreciable assets were stated, net of

<sup>20</sup>loc.cit.

<sup>21</sup>ibid., par. 6 .

<sup>22</sup>ibid., par.7.

<sup>23</sup>ibid., par.13(1)(f).

<sup>24</sup>ibid., par.15(4)(c).

<sup>25</sup>Report of the Special Committee to Review the Companies Act, Final Report, Government Printer, Wellington, 1973, 98, par.247, (Chairman: Hon. Mr. Justice Macarthur).

depreciation, in the Annual Reports of those companies which charged the same, or a larger, amount of depreciation than that claimed. On the other hand, companies which regarded taxation rates of depreciation as more than adequate were required to state depreciable assets at a lesser amount, net of depreciation, than previously, in order to minimise taxation. For these companies, a conflict may have arisen between the Commissioner's scheme and the requirement that the balance sheet produce a "true and correct view". The introduction of special depreciation from 1 April, 1945 may have increased this conflict. Those directorates which had previously regarded ordinary tax rates of depreciation as adequate were unable to claim ordinary and special depreciation without reducing the net amount at which the relevant assets were stated by a larger amount than that previously deemed necessary.

As the Companies Act 1933 did not require the directors to provide shareholders with an audited copy of the profit and loss account, a similar problem did not arise in respect of that account.<sup>26</sup>

For some directorates compliance with the requirements of the Companies Act 1955 would have conflicted with the desire to minimise taxation. Those directorates which regarded ordinary and special depreciation as more than "reasonably necessary for the purpose"<sup>27</sup> could not treat the excess as a reserve in the manner prescribed by the Eighth

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<sup>26</sup>Since 1860 the model Articles of Association have stated that profit and loss account is to be audited. A conflict may have arisen under the articles adopted by some companies.

<sup>27</sup>Companies Act 1955, Eighth Schedule, par.2(2).

Schedule without reducing the amount of depreciation permitted as a claim for taxation purposes. These directorates were forced to choose between compliance with the Act and the minimisation of taxation.

As the directors are required to determine whether the depreciation charge is "reasonably necessary for the purpose", the conflict between this requirement of paragraph two of the Eighth Schedule and the desire to minimise taxation was more serious for them than for auditors. Before the latter could report that the relevant provision was not adhered to it may have been necessary to show that :

"... the amounts of the provisions are so far in excess of what would normally be considered reasonable that the directors could not possibly have been acting in good faith." <sup>28</sup>

The auditors were, however, required to consider the adequacy of the depreciation charge for the period and the accumulated depreciation provision in forming an independent opinion on the "truth and fairness" of the profit and loss account and balance sheet.

The Commissioner's requirement that the accumulated depreciation claim for each class of asset be no greater than the corresponding accumulated depreciation charge may have resulted in the creation of secret reserves, the prevention of which was a major intention of the Eighth Schedule. Despite this, there is little evidence that directors or auditors were concerned about the provisions of the Companies Act 1955 and their implications for the Commissioner's 1940

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<sup>28</sup> T.R. Johnson, G.C. Edgar and P.L. Hays, The Law and Practice of Company Accounting in New Zealand, Butterworths, Wellington, 1972, 87.

scheme.<sup>29</sup>

Those directorates which regarded ordinary and special depreciation as less than reasonably necessary for the purpose were able to charge depreciation in excess of that claimed. The Commissioner required the excess depreciation to be separated from depreciation which was charged and claimed.<sup>30</sup>

With effect from the income year which commenced on 1 April, 1963 companies were permitted to claim initial and special depreciation without charging similar amounts in their financial accounts. This relaxation was extended to ordinary tax rates of depreciation for the 1968-69 and subsequent income years. Directorates are now able to adopt a depreciation policy for financial reporting purposes which is independent of that prescribed for taxation purposes and to comply with the requirements of the Companies Act 1955 without making interest-free loans to the government.

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<sup>29</sup> Between 1940 and 1968 The Accountants' Journal contained no articles dealing with this conflict. Some writers appear to have been unaware of the Commissioner's scheme. See W.S. Gilkinson, "Depreciation", The Accountants' Journal, 37 (1958), 51-2 and Edward Stamp, Depreciation: Factors Governing Choice of Method, New Zealand Society of Accountants, Wellington, 1963, 11. In his 1963 article of the same title, Gilkinson refers to depreciation reserves but does not discuss them in relation to the Companies Act. See "Depreciation", The Accountants' Journal, 42(1963), 6-7. T.K. Cowan discussed the question of charging and claiming the same amount of depreciation, but did not analyse the problem in terms of the Eighth Schedule. See "Accounting and Tax Laws", The Accountants' Journal, 42(1963), 155-6 and "Special Depreciation and Deferred Income Tax", The Accountants' Journal, 43(1964), 53.

<sup>30</sup> This view appears to be similar to that of W.S. Gilkinson who distinguished between a reserve created under the Commissioner's scheme and a reserve as defined by the Act. See "Depreciation", The Accountants' Journal, 42(1963), 6-7. It is suggested that the excess should have been identified by a name which did not include the word "reserve".

## CONCLUSION

The Companies Act 1901 required the directors of public companies to provide shareholders with an audited balance sheet. The 1955 Act made it mandatory for the directors to present an audited profit and loss account and balance sheet to the shareholders, and substantially expanded the amount of information required to be disclosed in the Annual Accounts. The basis of valuation and the method of depreciation are to be determined by the directors. Any depreciation in excess of that "reasonably necessary for the purpose" is required to be treated as a reserve that is, as an appropriation of profits.

Under the Commissioner of Taxes' 1940 scheme it was necessary to charge depreciation at not less than maximum tax rates in order to minimise taxation. This may have resulted in the charging of depreciation in excess of that "reasonably necessary for the purpose" and the crediting of such amounts to depreciation provisions. There is little evidence of concern by directors or auditors relating to the possible conflict between the requirements of the Eighth Schedule of the Companies Act and the desire to minimise taxation.

With effect from the income year which commenced on 1 April, 1963 companies were permitted to claim initial and special depreciation without charging a similar amount. This relaxation was extended to ordinary depreciation in the 1968-69 income year. Directorates are now able to adopt a depreciation policy which is independent of that prescribed for taxation purposes and complies with the requirements of the Companies Act 1955.

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CHAPTER IV  
DEPRECIATION AND PROFITS AVAILABLE  
FOR DISTRIBUTION

ABSTRACT

Since Lee v. Neuchatel Asphalte Co. (1888)<sup>1</sup> it has been held that, in the absence of special circumstances, losses of fixed capital need not be made good in determining profits available for distribution. Thus it is not legally necessary to provide for depreciation. If depreciation is provided for, any provision in excess of that reasonably necessary for the purpose may be used to increase profits available for distribution.

As the decisions discussed apply to the question of profits available for distribution only, they have not influenced the treatment of depreciation for financial reporting purposes.

INTRODUCTION

As the word "profit" has not been defined in successive Companies Acts, the law relating to profit available for distribution (and the treatment of depreciation in determining that profit) is found, for the most part, in the decisions of the Courts.<sup>2</sup> The development of the law is considered under the following headings :

- (a) The Law Before Lee v. Neuchatel Asphalte Co. (1888),
- (b) The Lee Case,
- (c) Further Development of the Lee Decision,
- (d) The Companies Act 1903,
- (e) Common Law Since 1903, and
- (f) Concluding Comments.

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<sup>1</sup>41 Ch. D. 1.

<sup>2</sup>The law discussed below is not concerned with the calculation of a "true and fair" profit. It is concerned with the determination of distributable profits only. For other purposes, depreciation has been treated differently. This is illustrated by way of four selected cases which are presented in Appendix B.

THE LAW BEFORE LEE v. NEUCHATEL ASPHALTE CO. (1888)

The principle that capital could not be returned to shareholders was apparently deduced from the United Kingdom's Companies Clauses Consolidation Act of 1845, which prohibited statutory companies from paying dividends which reduced their capital.<sup>3</sup> Although later Acts did not contain a similar restriction,<sup>4</sup> the Courts interpreted the absence of such a prohibition as implying that the payment of dividends out of capital was against the provisions of the relevant Acts read as a whole.

In Davidson v. Gillies<sup>5</sup> the plaintiff argued that in determining the profits available for distribution no provision had been made for maintenance, repairs, depreciation and renewal of the company's tramways, which were worn out. It was alleged that if an adequate provision were made, there would be no profits available for distribution. Jessel M.R. held that the articles of the company required an adequate provision to be made.

Although the above case did not test the general principles relating to the maintenance of capital, it highlights the principle that, in the absence of special circumstances, the articles determine the method of calculating the profits of a company.

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<sup>3</sup> L.C.B. Gower, Principles of Modern Company Law, Stevens, London, 1957, 107.

<sup>4</sup> H.C. Edey and P. Panitpakdi state that the select committee on Joint Stock Companies 1841-4 (U.K.) were "doubtful ... whether the payment of dividends out of capital was susceptible of sufficiently accurate determination to be legislated upon, and made no recommendation on this". "British Company Accounting and the Law 1844-1900" in A.C. Littleton and B.S. Yamey (eds.), Studies in the History of Accounting, Sweet and Maxwell, London, 1956, 347-8.

<sup>5</sup> (1879) 16 Ch. D. 347.

The maintenance of capital rule was strengthened in Flitcroft's<sup>6</sup> case where it was held that it was ultra vires a company to return its capital without complying with the statutory provisions relating to a reduction in capital.<sup>7</sup>

The main reason for restricting the payment of dividends out of capital was to give some protection to creditors.<sup>8</sup> On the other hand, creditors were not protected from a loss of capital resulting from expenditure upon, and reasonably incidental to, the company's objectives.<sup>9</sup>

Up until this point, the capital maintenance rule had not been "thoroughly tested in any of its possible points of weakness."<sup>10</sup> The first test was in Lee v. Neuchatel Asphalte Co.,<sup>11</sup> which is considered below.

#### THE LEE CASE

The Neuchatel Asphalte Company proposed to pay a dividend from the surplus of current receipts over current expenditure. The plaintiff alleged :

- (1) that the company's main asset, a concession, had depreciated in value,
- (2) that a large part of the capital of the company had been lost, and

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<sup>6</sup> re Exchange Banking Company (1882), 21 Ch. D. 519.

<sup>7</sup> For a criticism of the application of the ultra vires doctrine to the question of profits available for distribution see T.R. Johnston, G.C. Edgar and P.L. Hays, The Law and Practice of Company Accounting in New Zealand, Butterworths, Wellington, 1972, 161.

<sup>8</sup> re Exchange Banking Company, op.cit., 533.

<sup>9</sup> Trevor v. Whitworth (1887), 12 App. Cas. 409, 425; Guinness v. Land Corporation of Ireland (1882), 22 Ch. D. 349, 375.

<sup>10</sup> B.S. Yamey, "The Case Law Relating to Company Dividends", in W.T. Baxter and S. Davidson (eds.), Studies in Accounting Theory, Sweet and Maxwell, London, 1962, 431.

<sup>11</sup> (1888) 41 Ch. D. 1.

- (3) that there could be no dividend until the loss and depreciation had been made good,

whereas the defendant argued :

- (1) that there had been no loss of capital, and  
 (2) that there was no legal requirement to make good any loss resulting from depletion.

The articles of the company stated that any disputes as to the amount of the company's profits were to be determined at a general meeting and that the directors were not bound to provide for renewal or replacement of any lease or of the company's interest in any concession.

On the evidence, Stirling J. concluded that the value of the main asset had increased since the formation of the company, and that the plaintiff had failed to establish a case for the Court to interfere with the decision of the company.<sup>12</sup>

On appeal, the appellant also argued that the division of the annual proceeds from a wasting asset, without providing for depletion, resulted in a reduction of capital and that the relevant article was ultra vires.

Although Cotton L.J., appeared to acknowledge the force of the above argument, he was not prepared to decide in favour of the appellant. His decision sought to establish that the objectives of the company included the making of a profit which required :

"... a consumption year by year of part of the capital of the company."<sup>13</sup>

His Lordship expressly limited his decision to the particular

<sup>12</sup>ibid., 17.

<sup>13</sup>loc.cit.

case of wasting assets.<sup>14</sup>

Lindley L.J., who had no hesitation in upholding the decision of the Lower Court, stated that the determination of profits was a matter :

"... very judiciously and properly left, to the commercial world."<sup>15</sup>

He went on to add :

"If a company is formed to acquire and work a property of a wasting nature ... the capital expended in acquiring the property may be regarded as sunk and gone, and if the company retains assets sufficient to pay its debts, it appears to me that there is nothing whatever in the Act to prevent any excess of money obtained by working the property over the cost of working it from being divided..."<sup>16</sup>

The existing rule relating to dividend payments was discussed by Lindley L.J. :

"... the proposition that it is ultra vires to pay dividends out of capital is very apt to mislead, and must not be understood in such a way as to prohibit honest trading."<sup>17</sup>

The Lee decision is important, from our point of view, for two reasons :

- (1) The rule that dividends could not be paid out of capital was rejected, and
- (2) It was held that it was not necessary to provide for depletion.

In later cases which are discussed below, the Lee decision was extended to assets other than wasting assets.

#### FURTHER DEVELOPMENT OF THE LEE DECISION

In Bolton v. Natal Land and Colonisation Co.<sup>18</sup> it was

<sup>14</sup> loc.cit.

<sup>15</sup> ibid., 21.

<sup>16</sup> ibid., 24.

<sup>17</sup> loc.cit.

<sup>18</sup> (1892) 2 Ch. 124. The purchase and sale of land was a principal objective of the company.

held that a decline in the value of land was a loss of fixed capital and was therefore irrelevant in determining distributable profits.

In Verner v. Commercial Investment Trust,<sup>19</sup> the defendant, whose objectives included investing in various securities,<sup>20</sup> proposed to pay a dividend from the excess of current revenue over current expenses, without making good a substantial decline in the market value of its portfolio.

Stirling J. reviewed the decision in the Lee case and applied the principle of that case to the facts before the Court. He concluded that the Trust was entitled to pay the proposed dividend.

The decision of the Lower Court was unanimously affirmed by the Court of Appeal. Lindley L.J., in a joint statement with Smith L.J., stated :

"The broad question ... is, whether a limited company which lost part of its capital can lawfully declare or pay a dividend without first making good the capital which has been lost. I have no doubt that it can - that is to say, there is no law which prevents it in all cases and under all circumstances."<sup>21</sup>

His Lordship went on to adopt the economist's dichotomy of fixed and circulating capital :

"Perhaps the shortest way of expressing the distinction which I am endeavouring to explain is to say that fixed capital may be sunk and lost, and yet that the excess of current receipts over current payments may be divided, but that floating or circulating capital must be kept up ...."<sup>22</sup>

<sup>19</sup>2 Ch. 239.

<sup>20</sup>As opposed to trading in securities.

<sup>21</sup>ibid., 264.

<sup>22</sup>ibid., 266.

The Lee and Verner decisions were applied to Wilmer v. McNamara and Company<sup>23</sup> where it was held that a decline in the value of leaseholds and goodwill was a decline in fixed capital and was not relevant in determining distributable profits.

Although the Bolton, Verner and Wilmer cases extended the Lee decision to assets other than wasting assets, each of these cases involved assets of a special class. In Re Kingston Cotton Mill (No.2)<sup>24</sup> the Lee decision was applied to general items of plant and machinery.

For some years before the company was wound up, the directors knowingly published balance sheets in which the value of plant and machinery was greatly overstated.<sup>25</sup> Dividends were paid from surpluses which would have been eliminated if the decline in value had been deducted. Vaughan, J. held that the directors were not liable for the dividends as the decline in the value of plant and machinery represented a loss of fixed capital.

In Re National Bank of Wales (Cory's Case),<sup>26</sup> the Court of Appeal held that it was not necessary to make good past losses of circulating capital. Although this case went to the House of Lords, the point which was at issue is irrelevant to our discussion. The importance of the case arises from the Law Lords' observations on the development of the law described above.

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<sup>23</sup> (1895) 2 Ch. 245.

<sup>24</sup> (1894) 1 Ch. 331.

<sup>25</sup> Trading stocks were also overvalued.

<sup>26</sup> (1895-99) All E.R. Rep. 715 (on appeal sub. nom. Dovey v. Cory (1895-99) All E.R. Rep. 724.)

The Earl of Halsbury, L.C. stated that he was not satisfied as to the correctness of the law relating to dividends and he questioned the appropriateness of the distinction between fixed and floating capital.<sup>27</sup> In contrast, Lord Davey approved the division of capital into fixed and circulating capital, but disapproved of the view that past losses of circulating capital need not be made good.

The House of Lords confirmed the view, expressed in the Lee and subsequent cases, that businessmen should determine profits. The most often quoted statement in this regard is that by Lord Macnaghten :

"I do not think it desirable for any tribunal to do that which Parliament has abstained from doing, - that is, to formulate precise rules for the guidance or embarrassment of businessmen in the conduct of business affairs."<sup>28</sup>

Following Dovey v. Cory interest centred on the extent to which the comments of the House of Lords would influence the development of the law.

In Bond v. Barrow Haematite Steel Co.,<sup>29</sup> Farwell J. treated a loss on the surrender of leasehold mines and demolition of other property as a loss of circulating capital. This conclusion was based on the views of expert witnesses and Farwell J.'s opinion that there was no difference between a mine and a stock of ore.<sup>30</sup>

Unlike previous cases, the Bond case related to a

<sup>27</sup> ibid., 725.

<sup>28</sup> As quoted by Swinfen Eady L.J. in Ammonia Soda v. Chamberlain (1916) 1 Ch. 286.

<sup>29</sup> (1900-3) All E.R. Rep. 484.

<sup>30</sup> The company's main activity was smelting and the mining operations provided the raw material.

preference shareholder's claim that he was entitled to a dividend which the directors were refusing to declare. For this reason, and also because of the criticism of the decision, the development of law appears less confused if this case is distinguished.<sup>31</sup>

Up until this point we have seen that the Courts developed the law relating to the determination of profits available for distribution. Prior to 1903, New Zealand Companies Acts and the equivalent United Kingdom Statutes did not contain sections relating to the payment of dividends from profits. Thus the English Courts' decisions were applicable in New Zealand. However, the Companies Act 1903, unlike the equivalent United Kingdom statute, contained a section relating to the payment of dividends out of capital.<sup>32</sup> This legislative development is discussed below.

#### THE COMPANIES ACT 1903 AND 1908

The Court of Appeal's approach to the question of profits available for distribution, "based on common sense and business practice",<sup>33</sup> received legislative support in section fifty-two of the Companies Act 1903.<sup>34</sup> The purpose of this section was :

- (1) to remove uncertainty created by the Law Lords' observations in Davey v. Cory,
- (2) to enable a company which had lost part of its capital to avoid the expense of reducing capital

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<sup>31</sup> See J.F. Northey, Introduction to Company Law in New Zealand, Butterworths, Wellington, 1971, 313-5.

<sup>32</sup> Companies Act 1903, s.52.

<sup>33</sup> Hon. Sir Joseph Ward, New Zealand Parliamentary Debates, 127 (1903), 8.

<sup>34</sup> This section was subsequently re-enacted as section fifty-two of the Companies Act 1908.

in accordance with the provisions of the Act,  
and

- (3) to avoid the adverse effect on the credit standing of companies resulting from a reduction in capital.

The relevant section stated :

"Profits may be divided notwithstanding loss of capital -

- (1) In any case where -
- (a) A company by working or exhaustion of a mine ... patent ... or other wasting asset in the ordinary course of business has reduced the net value of its capital assets to an amount less than the amount of the company's paid up capital; or
  - (b) the net value of a company's assets is by loss of capital, less than the amount of the company's paid up capital, whether such loss of capital be realized and ascertained loss or an estimated loss, -
- it shall not be obligatory on such company before declaring a dividend from the profits on the company's operations for any period to have the company's capital reduced in accordance with the provisions of this Act, or to reinstate any lost capital out of profits, provided that the auditor ... of the company certify on the company's balance sheet for the period in respect of which it is proposed to declare a dividend that the assets of the company other than the profits proposed to be divided are, upon a valuation thereof made to his satisfaction ... more than sufficient to pay the debts and liabilities (excluding the paid up capital) of the company.
- (2) Nothing herein shall be construed as authorizing a return of capital to shareholders except such as may be involved in the working of a ... wasting asset, in the ordinary course of a company's business."

As the Courts were not required to decide any cases during the currency of this section, its effect on the development of the law is unclear.<sup>35</sup> It is submitted that, with the exception

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<sup>35</sup>Authoritative references are of limited assistance on this point. T.R. Johnston, G.C. Edgar and P.L. Hays (op.cit., 160) appear to be unaware of the section as they wrote that "Neither the Act of 1856 (N.Z. 1860) nor any subsequent Act has made reference to payment of dividends other than in Table A"; J.F. Northey (op.cit., 303-21) does not mention the relevant section.

of certification by the company's auditor, section fifty-two gave substantial effect to the Lee and Verner decisions.<sup>36</sup> If this view is accepted, it follows that the provisions of section fifty-two, which applied to a loss of capital arising from the working of a wasting asset in the ordinary course of business, were not materially different from those applicable to a loss of capital arising from the working of other assets.<sup>37</sup>

Under the Act a loss of fixed capital could be disregarded in determining distributable profits, if the auditor certified that in his opinion the value of assets were more than sufficient to meet the company's debts and liabilities (other than paid-up capital). A valuation, made to the auditor's satisfaction, was required for this purpose. In contrast, the Courts required directors to act honestly and reasonably in determining whether sufficient assets were retained to meet external liabilities.

As there is some doubt as to the effect of section fifty-two, it may be unwise to assume that the common law developed by the British Courts applied in all respects under the Companies Act 1903 and 1908. The uncertainty created by comments made in Davey v. Cory was removed by the decision in Ammonia Soda Company Limited v. Chamberlain.<sup>38</sup> For this reason section fifty-two was not re-enacted in the Companies Act 1933.<sup>39</sup>

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<sup>36</sup>F.C. Spratt and H. Taylor (eds.), Morrison's Company Law in New Zealand, Butterworths, Wellington, 1958, 275; This view is also supported by W.L. Farrands, Company Law in New Zealand, Sweet and Maxwell, Wellington, 1970, 282.

<sup>37</sup>This is excluding the requirement that the auditor certify that sufficient assets are retained to meet external liabilities.

<sup>38</sup>(1916) 1 Ch. 266.

<sup>39</sup>See "Counsel's Opinion on Certain Aspects of New Zealand Companies Act 1933", The Accountants' Journal, 12 (1934), 344.

COMMON LAW SINCE 1903

The last important case involving the valuation of assets and profits available for distribution, was Ammonia Soda Company Limited v. Chamberlain. The brief facts of this case were :

A company incurred losses which were offset by an appreciation in the company's assets determined by two directors. The company later made profits from which dividends were paid. Depreciation was charged against revenue to an accumulated amount exceeding the losses. The valuation proved to be over optimistic and the plaintiff sought to hold the defendants liable for dividends paid out of capital.<sup>40</sup>

In the Lower Court Peterson J. stated that the company could not :

"... attack the directors for an honest, though erroneous"<sup>41</sup>

valuation which was approved by the company.

On the question of the treatment of the valuation, a leading accountant, Sir Woodburn Kirby, submitted that it was :

"... contrary to all principles of commercial accountancy to write-up the value of fixed assets and apply the surplus so obtained to meet a deficit on trading."<sup>42</sup>

Peterson J. distinguished this view from the legal requirement and he stated that if the value of assets increased, then the accumulated depreciation provision could be written-back to revenue.<sup>43</sup>

Peterson J. held that there was no objection at law to

<sup>40</sup>1 Ch. 266 (Headnote).

<sup>41</sup>ibid., 272.

<sup>42</sup>ibid., 275.

<sup>43</sup>loc.cit.

the valuation, that depreciation could be added back and that the dividends were not paid out of capital.

On appeal, Scrutton L.J. stated that the observations of the House of Lords had not overruled previous decisions of the Court of Appeal.<sup>44</sup>

Swinfen Eady L.J. defined fixed capital as :

"That which a company retains, in the shape of assets upon which the subscribed capital has been expended, and which assets either themselves produce income, independent of any further action by the company, or being retained by the company and made use of to produce income or gain profits ... The capital is fixed in the sense of being invested in assets intended to be retained by the company more or less permanently and used in producing an income."<sup>45</sup>

Circulating capital was defined as :

"A portion of the subscribed capital of the company intended to be used by being temporarily parted with and circulated in business, in the form of money, goods or other assets, and which, or the proceeds of which are intended to return to the company with an increment, and are intended to be used again and again, and to always return with some accretion."<sup>46</sup>

He went on to distinguish between actual depreciation, being a decline in the value of fixed assets, and bookkeeping depreciation, being an allocation of cost. Although the latter had been provided for, there was, in his Lordship's opinion, no evidence of actual depreciation.<sup>47</sup>

Swinfen Eady L.J. concluded his judgement by stating that apart from the treatment of depreciation there was no requirement for the company to recoup lost fixed capital.

<sup>44</sup>ibid., 298.

<sup>45</sup>ibid., 286.

<sup>46</sup>loc.cit.

<sup>47</sup>ibid., 288.

Consequently the directors were not liable for the dividends paid.

The Court of Appeal's unanimous decision re-affirmed the law developed in the Lee and Verner cases. Although the Court was not bound to follow the comments of the Law Lords in Davey v. Cory, it was influenced by the statements made in that case. The Court of Appeal adopted Lord Macnaghton's view that rules should not be formulated which would embarrass businessmen.

In Stapley v. Read Bros. Limited<sup>48</sup> it was held that any depreciation in excess of proper requirements could be used to boost profits available for distribution.

#### CONCLUDING COMMENTS

The cases reviewed above establish that, in the absence of special circumstances, losses of fixed capital need not be made good in determining profits available for distribution.<sup>49</sup> Thus it is not legally necessary to provide for a decline in the value of assets represented by fixed capital nor is there any requirement at law to allocate the cost of such assets to various accounting periods. The above principle is subject to the overriding principle that the company retains sufficient assets to meet its liabilities as they fall due.<sup>50</sup> A company which provides for depreciation may later use the amount in excess of that reasonably necessary for the purpose, to

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<sup>48</sup> (1924) All E.R. Rep. 421.

<sup>49</sup> Lee v. Neuchatel Asphalte Co.; Bolton v. Natal Land and Colonisation Co.; Verner v. Commercial Investment Trust; Wilma v. McNamara and Company; Re Kingston Cotton Mill (No.2); Ammonia Soda Company Limited v. Chamberlain.

<sup>50</sup> Lee v. Neuchatel Asphalte Co.; Verner v. Commercial Investment Trust; Ammonia Soda Company Limited v. Chamberlain.

increase profits available for distribution.<sup>51</sup>

The determination of profits available for distribution is a matter of internal management and the Courts will not interfere with decisions reasonably and honestly taken in accordance with the general law and the company's constitution.<sup>52</sup>

Although the above conclusions are drawn from decided cases, Gower warns that they are not fixed rules.<sup>53</sup> In his opinion the Courts may in some future cases pay greater attention to the view that businessmen and not judges should determine profits.<sup>54</sup> Should this occur, the standard of reasonable business practice may well be different from that of more than fifty years ago.

The English Court decisions discussed above were supported by the Committee Appointed to Review the Companies Act :

"We agree with the Jenkins Committee that there should not be any statutory requirement that realised or unrealised capital losses should be made up before new revenue profits can be distributed. We are not however, able to agree with the Jenkins Committee that past revenue losses should be eliminated before new profits are distributed."<sup>55</sup>

From the above survey of the law relating to profits available for distribution, it is reasonable to conclude that this law has not affected the treatment of depreciation for financial reporting purposes.

<sup>51</sup>Stapley v. Read Bros. Ltd.; Ammonia Soda Company Limited v. Chamberlain.

<sup>52</sup>T.R. Johnston, G.C. Edgar, P.L. Hays, op.cit., 162.

<sup>53</sup>L.C.B. Gower, op.cit., 111.

<sup>54</sup>loc.cit.

<sup>55</sup>Special Committee Appointed to Review the Companies Act, Final Report, Government Printer, Wellington, 1973, 106, par. 269. (Chairman: Hon. Mr. Justice Macarthur.)

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P A R T   O N E

SUMMARY AND CONCLUSIONS

In historic cost accounting, accounting for depreciation aims to allocate the cost of a tangible capital asset, less its estimated residual value, over its assessed economic life. In contrast, depreciation claims are intended to provide for the annual loss in earning capacity as a result of fair wear and tear, other than that which can be made good by repairs, and of obsolescence. Despite the difference in approach, similar procedures are used to compute depreciation charges and claims.

The Commissioner of Taxes' desire to improve the administration of depreciation claims led to the 1940 requirement that accumulated depreciation claims be no greater than accumulated depreciation charges. This may have resulted in the charging of depreciation which was in excess of that which, in the opinion of the directors, was "reasonably necessary for the purpose" and the creation of secret reserves, the prevention of which was a major intention of the Eighth Schedule of the Companies Act 1955.

The Commissioner's 1940 scheme dominated accounting for depreciation until the 1963-64 income year. In that year, and in subsequent years, special depreciation could be claimed without reference to the amount of depreciation charged against revenue. Since the income year which commenced on 1 April 1968, taxpayers have also been free to claim ordinary depreciation without charging a similar amount.

The Companies Act 1955 has not materially affected the depreciation policies and practices of public companies. It has, however, played a significant role in requiring the disclosure of information on the practices adopted. The law relating to profits available for distribution does not require depreciation to be charged. For this reason, it has had an insignificant influence on accounting for depreciation.

In the light of the findings of the preceding chapters, we will examine in Part Two the depreciation practices of a sample of public companies for the period from 1962 to 1973.

P A R T   T W OACCOUNTING FOR DEPRECIATION, INVESTMENT  
ALLOWANCE AND INCOME TAX ALLOCATION

The results of an analysis of the annual reports of a sample of New Zealand public companies for the period from 1962 to 1973 are presented in three chapters which form Part Two. In Chapter V the methods used by the sample companies to value and depreciate plant, machinery and buildings are examined in the light of the findings of Part One. This is followed by a discussion of depreciation charges and claims and income tax allocation (Chapter VI). The last chapter of this part deals with the problem of accounting for investment allowance. In addition to the findings based on the study of the annual reports of the sample companies, Chapters VI and VII contain a summary of the theoretical arguments in favour of and against income tax allocation and alternative accounting treatments of investment allowance respectively.

CHAPTER V  
THE VALUATION AND DEPRECIATION OF PLANT, MACHINERY  
AND BUILDINGS: AN ANALYSIS OF THE ANNUAL REPORTS  
OF CERTAIN PUBLIC COMPANIES

ABSTRACT

In this chapter the bases used in determining the gross amount at which plant, machinery and buildings were stated from 1962 to 1973 by one hundred and eleven companies are summarised. The methods used by these companies to account for the depreciation of plant, machinery and buildings are analysed.

More than ninety per cent of the sample recorded plant and machinery at historic cost. In contrast, sixty per cent of the companies revalued buildings prior to 1962 or between 1962 and 1973. Forty-one per cent of the bases used in revaluing buildings were not disclosed. Thirty-one per cent of the companies revalued buildings to the latest Government valuation. Three companies annually revalued plant, machinery and buildings.

The diminishing value method is the most frequently used method of computing depreciation charges on plant and machinery. More than fifty per cent of the sample charged ordinary depreciation or ordinary and special depreciation in each year studied. Few companies took advantage of the 1963 announcement that special depreciation could be claimed without charging a similar amount. Since the 1968 ruling, that ordinary depreciation as well as special depreciation could be claimed without charging similar amounts, there has been a significant growth in the use of the straight-line method. In 1973 eighteen per cent of the companies used this method. Companies engaged in fixed-capital intensive activities have tended to adopt the straight-line method.

Although less data was disclosed on the methods used to compute depreciation charges on buildings than on the methods used to compute depreciation charges on plant and machinery, it appears that all of the sample companies compute depreciation on buildings on the straight-line method.

Reserves for depreciation and the replacement of plant, machinery and/or buildings were found to be unrelated to the depreciation or replacement of the relevant assets.

INTRODUCTION

In the first part of this chapter the bases used by one hundred and eleven companies to determine the gross amount at

which plant, machinery and buildings were stated from 1962 to 1973 are summarised. In the second part of the chapter the methods used by these companies to compute their depreciation charges on plant and machinery are analysed. A note on the views of certain chartered accountants in public practice on accounting for the depreciation of plant and machinery is also presented. The methods used by the same companies to compute their depreciation charges on buildings are briefly discussed. Finally, the relationship between depreciation, plant and building replacement reserves and depreciation charges is discussed.

The analyses presented in this chapter are based, for the most part, on a study of the annual reports of one hundred and eleven companies. The selection of the sample and the sources of data used are described in Appendix C. In general, the main findings evident from the sample as a whole are discussed. A study of the individual companies is reported on in a number of appendices which are referred to at the appropriate point in the text.

BASES USED IN DETERMINING THE GROSS AMOUNT AT  
WHICH PLANT, MACHINERY AND BUILDINGS WERE  
STATED FROM 1962 TO 1973

The bases used in determining the gross amount at which plant, machinery and buildings were stated from 1962 to 1973 by the one hundred and eleven companies selected for study are summarised in Table V-1. The historic cost classification includes those companies which stated plant and machinery and/or buildings at an amount net of accumulated depreciation charge on 1 January, 1957 (or on an equivalent balance date).

and recorded subsequent additions at historic cost.<sup>1</sup> Those companies which recorded plant and machinery and/or buildings at "cost or valuation" were also included in the historic cost category, provided that there was no evidence of a revaluation subsequent to 1 January 1957.<sup>2</sup>

Valuations have been classified into three main groups. Companies which revalued plant and machinery and/or buildings prior to 1962 form the first group. The second group (occasional valuations) includes those companies which revalued the relevant assets at least once during the period from 1962 to 1973. All of the companies included in the first or second group recorded buildings or items of plant and machinery acquired subsequent to the valuation (or valuations) at historic cost. The third group consists of those companies which revalue plant, machinery and/or buildings annually.

In classifying the bases used by the companies, the valuation of a small proportion of the assets on a basis other than that used in determining the gross amount at which most of the assets of that class were stated was ignored.<sup>3</sup>

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<sup>1</sup>Paragraph 11(1) of the Eighth Schedule of the Companies Act 1955 provided that the amount net of accumulated depreciation at which any assets were stated at the commencement of the Act (1 January 1957) could be treated as if it were the amount of a valuation of those assets made at the commencement of the Act. This basis was adopted for plant and machinery by fifty-five of the companies listed under the historic cost basis in the table.

<sup>2</sup>From the annual reports of these companies, it appears that the term "valuation" refers to the treatment of the net amount at which fixed assets were stated on 1 January 1957 as a valuation on that date.

<sup>3</sup>Three companies recorded assets acquired as a result of a takeover on the basis applicable prior to the takeover which was different from that used for other assets of the same class. Other assets acquired as a result of takeovers were stated on the basis applicable to similar assets. Seven companies restated certain buildings on a basis different from that used

TABLE V-1  
BASES USED TO DETERMINE THE GROSS AMOUNT AT WHICH  
PLANT AND MACHINERY AND/OR BUILDINGS WERE STATED  
BETWEEN 1962 AND 1973 (INCLUSIVE)

	Plant and Machinery		Buildings	
	N <sup>1</sup>	%	N	%
Historic Cost <sup>2</sup>	103	92.8	44	39.7
Valuation Prior to 1962 <sup>3</sup>	1	0.9	14	12.6
Occasional Valuation <sup>3</sup> -				
(i) 1962 to 1967,	-	-	14	12.6
(ii) 1968 to 1973,	3	2.7	17	15.3
(iii) During more than one of the following periods; Prior to 1962, 1962 to 1967, or 1968 to 1973	1	0.9	19	17.1
Annual Valuation	3	2.7	3	2.7
	111	100.0	111	100.0

<sup>1</sup>"N" denotes number.

<sup>2</sup>Includes those companies which stated the relevant assets at an amount net of accumulated depreciation on 1 January, 1957 or an equivalent date and recorded subsequent additions at historic cost. Companies which stated plant and machinery at "cost or valuation" were also included provided that there was no evidence of a valuation subsequent to 1 January, 1957.

<sup>3</sup>Additions acquired since the occasional valuation have been recorded at historic cost.

The dominance of the historic cost basis in determining the gross amount at which plant and machinery was stated by the selected companies is clearly evident from Table V-1. One hundred and three companies (92.8 per cent) recorded plant and machinery on that basis. In contrast, forty-four firms (39.7 per cent) recorded buildings on the same basis. One other firm restated plant and machinery at estimated current replacement cost in 1960 and fourteen firms revalued buildings prior to 1962. In both cases assets acquired by the relevant firms from 1962 to 1973 were recorded at historic cost.

Four companies restated plant and machinery at least once between 1962 and 1973, whereas fifty firms (forty-five per cent) revalued buildings during the same period.

Two firms adopted the current replacement cost basis for plant, machinery and buildings during the period from 1968 to 1973. Both companies are part of the N.V. Philips' Gloeilampenfabrieken group of companies. A third firm annually revalues plant and machinery but does not disclose the basis used. The same firm annually restates buildings at the latest Government valuation.

The bases used in restating plant, machinery and buildings are summarised in Table V-2. Forty-one per cent of the firms which revalued buildings did not disclose the basis used. Of the bases which were disclosed, the most frequently used basis in the case of buildings was the latest Government valuation. This basis was used in thirty-four per cent of the valuations. Seven companies restated buildings following a professional and independent assessment of the value of those assets.

TABLE V-2  
BASES USED IN REVALUING PLANT, MACHINERY  
AND BUILDINGS

	Plant and Machinery		Buildings	
	N <sup>1</sup>	%	N	%
Latest Government Valuation	-	-	25	34.2
Professional, Independent Valuation	1	12.5	7	9.6
Estimated Current Replacement Cost <sup>2</sup>	4	50.0	4	5.5
Other <sup>3</sup>	1	12.5	7	9.6
Bases Not Disclosed	2	25.0	30	41.1
Total <sup>4</sup>	8	100.0	73	100.0

<sup>1</sup>"N" denotes number.

<sup>2</sup>For both categories of fixed assets, two companies annually revalue on this basis.

<sup>3</sup>In the case of plant and machinery, one company revalued on the basis of "Directors' valuation". "Other" for buildings consists of the following bases: Seventy-five per cent of Government valuation (two); eighty per cent of Government valuation (one); directors' valuation (one); current market price (one); somewhat below current market price (one); and indemnity insurance value (one).

<sup>4</sup>Four of the companies which revalued buildings used two different bases. For this reason, the total of seventy-three exceeds the number of companies listed as having revalued that class of asset in the previous table.

From the above, it can be seen that plant and machinery were stated at historic cost by more than ninety per cent of the one hundred and eleven companies analysed. Three companies departed from the historic cost basis and stated plant and machinery at an amount determined by an annual valuation. In two of these cases the basis used was estimated current replacement cost. In contrast, sixty per cent of the sample restated buildings prior to 1962 or between 1962 and 1973 (inclusive) on a basis other than historic cost. Forty-one per cent of those companies which restated buildings did not disclose the basis used, and thirty-four per cent restated buildings at the latest Government valuation.

#### DEPRECIATION OF PLANT, MACHINERY AND BUILDINGS

##### Plant and Machinery

The depreciation methods used by the one hundred and eleven companies to compute their depreciation charges on plant and machinery between 1962 and 1973 are presented in Table V-3. This table was prepared from data given in the annual reports of the relevant companies. In addition, answers given to question twenty-five of a questionnaire which was sent to the sample companies were used to cross-check data taken from the annual reports.<sup>4</sup> About twenty per cent of the companies studied did not disclose in their annual reports the depreciation methods used. Half of these companies answered question twenty-five. Where there was no disclosure of a material change in the basis of accounting for depreciation of plant and machinery between 1962 and 1973, the answer

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<sup>4</sup>The tabulated answers to question twenty-five are given in Appendix O.

TABLE V-3  
DEPRECIATION METHOD USED TO COMPUTE DEPRECIATION CHARGE ON PLANT AND MACHINERY 1962 - 1973

	1962		1963		1964		1965		1966		1967		1968		1969		1970		1971		1972		1973	
	N <sup>1</sup>	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Diminishing Value	66	89.2	67	88.2	69	85.2	71	83.5	76	84.5	79	84.0	81	84.4	82	81.2	82	75.9	80	71.4	80	69.9	77	65.8
Straight-Line	-	-	-	-	2	2.5	2	2.4	1	1.1	1	1.1	1	1.0	5	4.9	9	8.3	14	12.5	18	15.6	21	18.0
Method Unknown	8	10.8	9	11.8	10	12.3	12	14.1	13	14.4	14	14.9	14	14.6	14	13.9	17	15.8	18	16.1	17	14.8	19	16.2
Total <sup>2</sup>	74	100.0	76	100.0	81	100.0	85	100.0	90	100.0	94	100.0	96	100.0	101	100.0	108	100.0	112	100.0	115	100.0	117	100.0

Number of  
Companies  
Analysed

(74)

(76)

(80)

(84)

(90)

(94)

(96)

(99)

(104)

(108)

(110)

(109)

<sup>1</sup>"N" denotes number.

<sup>2</sup>Companies which used the diminishing value and straight-line methods to compute their total depreciation charge for a given year have been included in the number given for both methods.

given to question twenty-five was assumed to apply during the whole period.<sup>5</sup>

Companies which used more than one method in computing their depreciation charge on plant and machinery for a given year were recorded as if each method were used by a separate company.

From the table it can be seen that the diminishing value method was the most frequently used method between 1962 and 1973. In 1962 and 1963 all of the companies which used a method which could be determined, computed their depreciation charge on plant and machinery on the diminishing value method. In 1964 and 1965 two companies used the straight-line method and from 1966 up to 1968 one of the sample companies used this method.<sup>6</sup>

The dominance of the diminishing value method during the period from 1962 to 1968 is not surprising. In Chapter II we found that from the income year which commenced on 1 April, 1940 until the 1968-69 income year, it was necessary to charge an amount equivalent to ordinary depreciation in order to minimise taxation unless the accumulated depreciation charge exceeded the accumulated depreciation claim.<sup>7</sup> Furthermore, until the 1963-64 income year, it was also necessary to charge an amount equivalent to the amount of special depreciation

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<sup>5</sup> Paragraph 15 (4) of the Eighth Schedule of the Companies Act 1955 "... requires companies to disclose any material respects in which any items shown in the profit and loss account are affected ... by any change in the basis of accounting."

<sup>6</sup> One of the companies which used this method in 1964 and 1965 was a subsidiary previously owned by British interests. In 1966 it charged depreciation on the diminishing value method in line with the practice of its new parent company.

<sup>7</sup> See page 46.

claimed. A directorate which wished to charge depreciation on the straight-line method between 1962 and 1968 and minimise taxation was required to charge depreciation at rates equivalent to those applicable for taxation purposes, except that from the 1963-64 income year, it was not necessary to include tax rates of special depreciation. Assuming no special depreciation, it would have been necessary to apply a rate of ten or fifteen per cent in most cases. If special depreciation were also required to be charged, the rate would have increased by ten per cent. Rates of this magnitude on the straight-line method imply a very short useful life for plant and machinery. A ten per cent straight-line rate is consistent with a life of ten years.<sup>8</sup> As major items of plant and machinery generally have a longer life than this, the straight-line method may have resulted in a serious distortion of periodic income. Moreover, fixed-capital intensive firms may have been unable to absorb depreciation charges on major projects over such a short period. Thus it is not surprising that only one company charged depreciation on the straight-line method at ordinary tax rates of depreciation.

Since the 1968-69 income year, taxpayers have been free to claim ordinary as well as special depreciation without charging similar amounts. This revised tax ruling has enabled companies to adopt the straight-line method for financial reporting purposes and to use a reasonable estimate of the life of an asset in computing the rate of depreciation and yet to minimise taxation. As a result, there has been a significant growth in the use of the straight-line method.

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<sup>8</sup>A ten per cent diminishing value rate implies a life of about thirty-seven years (see Appendix A).

In 1969 five companies (4.9 per cent) used this method. By 1971 the number of companies using the straight-line method had increased to fourteen (8.3 per cent) and in 1973 this method was used by eighteen per cent of the companies.

Fixed-capital intensive companies have tended to adopt the straight-line method.<sup>9</sup> Many of these companies found that high rates of ordinary depreciation or ordinary and special depreciation resulted in a distortion of reported profit after-tax. In most cases, the change to the straight-line method occurred prior to, or during, a major expansion of plant and machinery. In some cases, the charging of special and ordinary depreciation would have resulted in a substantial decrease in reported profit during the early life of major projects. It is interesting to speculate that some fixed-capital intensive projects may not have been undertaken if depreciation could not be charged in the initial years at a lesser amount than ordinary and special depreciation.

From the data given in certain 1973 annual reports and from discussions with senior executives of five of the sample companies, it seems reasonable to predict further growth in the use of the straight-line method. There will, however, need to be a substantial growth in the use of the straight-line method before it replaces the diminishing value method as the most frequently used depreciation method for the purposes of computing depreciation charges on plant and machinery.

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<sup>9</sup>For example, firms engaged in pulp, paper and newsprint, publishing and printing, and transport activities. Plant and machinery which has a short life owing to obsolescence has also been depreciated on the straight-line method, for example, plant used in the manufacture of hosiery.

From the above discussion it can be seen that depreciation charges on plant and machinery between 1962 and 1973 were often related to depreciation claims on assets of that type. In Table V-4 the methods of computing depreciation charges on plant and machinery (as distinct from the depreciation methods used) are classified. The first three classifications relate the amount of depreciation charged to the amount claimed. Classification A includes those companies which charge depreciation on the diminishing value method at ordinary tax rates. Companies which charge ordinary and special depreciation form classification B and companies which charge depreciation on the diminishing value method in excess of ordinary and special depreciation form classification C. Those companies which compute their depreciation charges on plant and machinery on the straight-line method form classification D. Where a company's method of computing depreciation charges was known and could not be included in classifications A to D, that company was included in classification E (Not Elsewhere Included).

As the analysis is based on data disclosed in the annual reports of the relevant companies, it was impossible to determine the methods used by some companies. These companies were included in classification U. Answers given to question twenty-five of the questionnaire were used to check the classifications based on data disclosed in the annual reports.<sup>10</sup> As some of the companies included in classification U appear to have changed their methods of computing depreciation

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<sup>10</sup>The tabulated answers to question twenty-five are given in Appendix O.

charges on plant and machinery between 1962 and 1973 without disclosing the change, answers given to that question (which related to the 1971 or 1972 year only) were not used to re-classify such companies.

Companies which used more than one of the above methods in computing their depreciation charges have been included in more than one classification. For this reason, the total number of methods given is not the same as that given in Table V-3.

Table V-4 is a summary of the methods used by the one hundred and eleven companies analysed. The classification of the methods used by individual companies and notes on the methods used by certain of these companies are given in Appendix D.

The Commissioner of Inland Revenue's pre-1963 ruling resulted in a few companies charging depreciation at ordinary tax rates on the diminishing value method prior to 1964 (classification A). Following the revised ruling that special and initial depreciation could be claimed in the 1963-64 income year and in subsequent years without charging a similar amount, there was a small increase in the number of companies which charged ordinary depreciation only. In 1963 less than three per cent used this method. A year later more than six per cent of all methods used were accounted for by charging ordinary depreciation. Since then, this method has been used on average by about ten per cent of the companies. One might have expected the 1963 tax ruling to have resulted in a greater use of this method between 1964 and 1968.

The most frequently used method of computing depreciation charges on plant and machinery between 1962 and 1973 was the

TABLE V-4

## METHOD OF COMPUTING DEPRECIATION CHARGE ON PLANT AND MACHINERY 1962 - 1973

	1962		1963		1964		1965		1966		1967		1968		1969		1970		1971		1972		1973	
	N <sup>1</sup>	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
A Depreciation Charge Computed Using Ordinary Tax Rates of Depreciation	1	1.3	2	2.6	5	6.1	6	7.0	9	9.9	9	9.5	10	10.2	11	10.8	11	9.7	13	10.8	13	10.7	13	10.5
B Depreciation Charge Computed Using Ordinary and Special Tax Rates of Depreciation	53	71.6	53	69.7	52	63.4	51	59.3	49	53.8	54	56.8	57	58.2	56	54.9	57	50.0	55	45.8	55	45.1	54	43.6
C Depreciation Charged in Excess of Ordinary and Special Depreciation	5	6.8	5	6.6	5	6.1	7	8.1	9	9.9	7	7.4	6	6.1	6	5.9	7	6.1	7	5.8	6	4.9	5	4.0
D Depreciation Charge Computed on the Straight-Line Method	-	-	-	-	2	2.4	2	2.3	1	1.1	1	1.0	1	1.0	5	4.9	9	7.9	14	11.9	18	14.7	21	16.9
E Method of Computing Depreciation Charge Not Elsewhere Included	-	-	-	-	1	1.2	1	1.2	1	1.1	1	1.1	1	1.0	1	0.9	4	3.5	4	3.3	3	2.5	3	2.4
U Method of Computing Depreciation Charge is Unknown	15	20.3	16	21.1	17	20.7	19	22.1	22	24.2	23	24.2	23	23.5	23	22.6	26	22.8	27	22.5	27	22.1	28	22.6
Total Number of Methods Used	74	100.0	76	100.0	82	100.0	86	100.0	91	100.0	95	100.0	98	100.0	102	100.0	100	100.0	120	100.0	122	100.0	124	100.0

<sup>1</sup>"N" denotes number. Companies which used more than one method have been included as if each method were used by a separate company.

<sup>2</sup>The number of companies using a given method expressed as a percentage of the total number of company reports studied.

charging of ordinary and special depreciation. In 1962 this method accounted for 71.6 per cent of the total. Since that year, there has been a gradual decline in the proportion of companies using this method. By 1973, 43.6 per cent of the companies charged ordinary and special depreciation on plant and machinery.

In each year, more than fifty per cent of the companies charged ordinary depreciation or ordinary and special depreciation. Prior to 1969 these two methods accounted for at least sixty per cent of the total. Moreover, about twenty per cent of the methods used by companies were classified as unknown.

There appear to be three main reasons for charging depreciation at tax rates of ordinary or ordinary and special depreciation.<sup>11</sup> First, the directorate may be of the opinion that these rates are "proper" and that the charge for the year and the accumulated charge computed at ordinary and special tax rates of depreciation are "reasonably necessary for the purpose". Special depreciation may be charged on the grounds that ordinary depreciation is inadequate. As the depreciation charge arises from a non-cash entry at less than arm's length, it is not surprising that directorates and auditors might feel that the depreciation charge gains some independence when it is computed at tax rates of depreciation. This view would not support the charging of special depreciation which is not intended to measure wear, tear and obsolescence.

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<sup>11</sup>The adequacy of tax rates of depreciation for the purpose of providing for wear, tear and obsolescence is discussed in Chapter VIII.

It is interesting to note that some companies which charge and claim the same amount of depreciation charged ordinary depreciation prior to 1945 and from 1956 to 1960. From 1958 the rates of ordinary depreciation were increased. From 1945 to 1956 special depreciation at a rate of thirty per cent was charged in addition to ordinary depreciation. Since 1960 special depreciation at a rate of twenty per cent and ordinary depreciation have been charged. Despite these changes in the rates of depreciation applicable for taxation purposes, many directorates and auditors have been of the opinion, or were forced to be of the opinion, that the amount of depreciation claimed was equivalent to a "proper" charge.

The second reason for charging and claiming the same amount of depreciation is that this practice is of such long standing that it may be regarded by some directors as the proper method of computing depreciation charges on plant and machinery. The charging of less depreciation than that claimed was so unusual that when the Commissioner permitted special depreciation to be claimed and not charged, he used his discretionary powers to grant special depreciation to force companies to disclose in their annual reports that special depreciation was claimed only.

Thirdly, directorates may feel that the charging of less depreciation than that claimed may result in the Commissioner revising the schedule of ordinary depreciation rates with a consequent increase in the effective rate of tax. Although this view has merit in relation to ordinary depreciation, it does not apply to special depreciation which is intended to encourage economic development. As a number of leading companies have already adopted rates of depreciation which

are unrelated to ordinary tax rates of depreciation, it is submitted that this argument is also losing its force in relation to ordinary depreciation.<sup>12</sup>

By returning to Table V-4 we can see that a small proportion of companies charged depreciation in excess of ordinary and special depreciation (classification C). On average about seven per cent of the methods used were included in this classification.

As the trend toward the straight-line method (classification D) was discussed above, there is no need for further comment on this method.

A small proportion of the firms analysed were classified under the heading "Not Elsewhere Included". In addition, over twenty per cent of the methods used could not be classified on the basis of the data disclosed in the annual reports of the relevant companies.

From the above, the importance of the diminishing value method and the computation of depreciation charges at ordinary or ordinary and special depreciation should be apparent. Although the 1963 ruling by the Commissioner had little impact on the method used to compute depreciation charges on plant and machinery, the 1968 announcement that ordinary depreciation in addition to special depreciation could be claimed without charging similar amounts enabled a significant growth in the use of the straight-line method for financial reporting purposes to take place.

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<sup>12</sup>For a further discussion on the third reason for charging and claiming the same amount of depreciation, see G.J. Schmitt, "Depreciation : Tax Claims and Accounting Charges", The Accountants' Journal, 49 (1971), 232-4.

The Views on Accounting for the Depreciation of  
Plant and Machinery of Five Chartered Accountants

Five chartered accountants engaged in public practice completed a questionnaire on depreciation allowances on behalf of their firms.<sup>13</sup> Question six requested participants to answer whether in their firm's opinion listed companies should generally compute depreciation on plant and machinery by a particular method and, if so, which method should generally be used.<sup>14</sup> All five participants answered that a particular method should be used. Four of these favoured the straight-line method and one supported the diminishing value method. All of the chartered accountants stated that the preferred method gave a better allocation of the cost of an asset over its life and hence a better matching of expenses with revenue. The firm which preferred the diminishing value method answered in question 7(a) that special depreciation should be charged if the rate of depreciation (excluding special depreciation) were inadequate. The four firms which supported the straight-line method answered that special depreciation should not be charged because of its distorting effect on income and as special depreciation was regarded as an incentive rather than as an allowance for wear, tear and obsolescence.

The answers of some of the chartered accountants may have been influenced by the Tentative Statement on Accounting Practice No. 6 entitled "Depreciation of Fixed

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<sup>13</sup>The methods used in conducting the questionnaire survey of chartered accountants in public practice are described in Appendix P.

<sup>14</sup>A copy of the questionnaire is presented in Appendix P.

Assets".<sup>15</sup> The writers of this statement were of the opinion that the straight-line method was, in the absence of special circumstances, "the most suitable method for general application".<sup>16</sup>

Although no firm conclusions can be drawn from such a small sample, it would appear that the straight-line method has some support among leading chartered accountants.

#### BUILDINGS

The annual reports of the sample companies were also examined to determine the method used to compute depreciation charges on buildings. Although less data is disclosed on the method of computing depreciation charges on buildings than that disclosed on the method of computing depreciation charges on plant and machinery, it appears that all of the companies calculate depreciation on buildings on the straight-line method. This method has been used to compute depreciation claims on buildings since a deduction on that class of fixed asset was granted in 1917.<sup>17</sup> From the 1969-70 income year, depreciation claims on buildings which were in essence an integral part of the plant they house have been computed

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<sup>15</sup> New Zealand Society of Accountants, Board of Research and Publications, "Depreciation of Fixed Assets : Tentative Statement on Accounting Practice No.6", The Accountants' Journal, 51 (1972), 154-5.

<sup>16</sup> ibid., 154.

<sup>17</sup> See Chapter II. It is interesting to note that in Australia a deduction for the depreciation of buildings is not permitted. Stephen A. Zeff reported that from a sample of thirty-two companies which received qualified audit reports, twenty-two of the qualifications resulted from a failure to charge depreciation on buildings or other fixed assets. See Stephen A. Zeff, "Comments by Directors on Auditors' Qualifications", The Australian Accountant, 43 (1973), 70.

on the diminishing value method. None of the annual reports examined contained any comments on this change in tax practice.

During the period from 1962 to 1973, four companies disclosed that they charged less depreciation on buildings than that claimed in one or more of the relevant years.<sup>18</sup> In one case, the relevant amount was debited in the profit and loss appropriation account two years later. Two other companies did not charge special or initial depreciation and the third planned to equalise the depreciation charge on a new hotel building, plant and furniture over the first ten years of the life of that hotel.

In contrast, eleven companies disclosed that their depreciation charges on buildings in one or more years from 1962 to 1973 exceeded their depreciation claims. Four of these companies charged more depreciation than that claimed in one or two years only.

As a large number of the companies studied revalued buildings between 1962 and 1973, one would have expected a greater number of companies to charge more or less depreciation than that claimed. In many cases, the depreciation charge on buildings is small in relation to the total charge. For this reason, some companies may not disclose that more or less depreciation is charged than that claimed or that depreciation is computed on a method other than the straight-line method.

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<sup>18</sup>Notes on the treatment of depreciation of buildings by the individual companies are given in Appendix E.

Reserves for Depreciation and Replacement

In Appendix F, notes are presented on the treatment of depreciation and replacement reserves for plant, machinery and/or buildings between 1962 and 1973 by the sample companies. The creation and amount at which these reserves are stated appears to be arbitrarily determined. There was no evidence of replacements or part of the cost of replacements being debited to replacement reserves. From the study of movements in depreciation and replacement reserves, it was concluded that these reserves were almost totally unrelated to the depreciation of plant and machinery and/or buildings.<sup>19</sup>

CONCLUSION

The importance of the historic cost basis of determining the gross amount at which plant and machinery is stated is clearly evident from this study. More than ninety per cent of the companies examined stated plant and machinery on that basis between 1962 and 1973. In contrast, sixty per cent of the companies recorded buildings on a basis other than historic cost. Thirteen per cent revalued buildings prior to 1962 and forty-five per cent revalued between 1962 and 1973. All of these companies recorded buildings acquired subsequent to the valuation at historic cost. Three companies annually revalued plant, machinery and buildings.

The diminishing value method was the most frequently used method of computing depreciation charges on plant and machinery. Few companies were known to use any other method prior to 1969. This is not surprising in view of the

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<sup>19</sup>One company credits depreciation charged in excess of the cost of plant and machinery to a depreciation reserve.

Commissioner of Inland Revenue's rulings. Prior to the 1968-69 income year, it was necessary to charge an amount of depreciation equivalent to the ordinary depreciation claimed in order to minimise taxation. Until the 1963-64 income year, it was also necessary to charge an amount equivalent to special depreciation claimed. Under these rulings it was virtually impossible to use the straight-line method with a reasonable estimate of the life of an asset and to minimise taxation. Since the 1968-69 income year, there has been a significant growth in the use of the straight-line method for the purposes of computing depreciation charges on plant and machinery. In 1973 eighteen per cent of the companies used this method. Fixed-capital intensive companies have tended to adopt the straight-line method.

More than fifty per cent of the companies studied charged ordinary depreciation or ordinary and special depreciation in each year from 1962 to 1973. The 1963 tax ruling had little effect on the method used to compute depreciation charges on plant and machinery.

It appears that all of the companies charged depreciation on buildings between 1962 and 1973 on the straight-line method.

Reserves for depreciation and replacement of plant, machinery and/or buildings were found to be unrelated to the depreciation or replacement of those assets.

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CHAPTER VI  
DEPRECIATION CHARGES AND CLAIMS  
AND INCOME TAX ALLOCATION<sup>1</sup>

ABSTRACT

In this chapter, accounting for the tax effects of material timing differences between depreciation claims and charges is examined. First, the case for and against interperiod income tax allocation is presented. Secondly, income tax allocation is examined in the light of the Commissioner of Inland Revenue's pre-1968 ruling which related depreciation charges to depreciation claims. Thirdly, the methods used by the sample companies to account for income tax allocation are discussed. Finally, the views on accounting for deferred tax debits and credits of certain chartered accountants are summarised.

The case for income tax allocation is based on the view that income tax is an expense and that it is a tax on accounting income after adjusting for permanent differences between accounting and taxable income. If income tax is regarded as a tax on taxable income, the question of income tax allocation depends on whether a deferred tax credit is a liability and whether a deferred tax debit is an asset. Definitions may be quoted to support both views.

Prior to the 1968-69 income year, rulings by the Commissioner of Inland Revenue restricted the ability of companies to generate a "correct" tax-paid charge for depreciation and a "correct" impact on the amount net of accumulated depreciation charge at which plant and machinery was stated. In these circumstances, a deferred tax credit may not have resulted in a truer or fairer profit after-tax.

There has been a significant growth in the number of companies which charge less depreciation than that claimed

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<sup>1</sup>Writers have used various titles to denote income tax payable in a future period as a result of timing differences. In drafting the questionnaire sent to chartered accountants in public practice the term "deferred tax credit" was used. This title implied an amount on the credit side of the balance sheet without implying whether this item was, in the opinion of the writer, a current or term liability, a provision, a separate item or a reserve. For consistency, the same terminology is used in this chapter which includes a report on the results of that survey. The term "deferred tax debit" is used to indicate an asset arising from future tax benefits. In this context a deferred tax debit is distinguished from a reduction in accumulated deferred tax credit.

and provide for deferred tax. In 1973 more companies provided a deferred tax credit in respect of depreciation claimed only than those that did not. A small number of companies generally charged more depreciation than that claimed between 1962 and 1973. None of these companies provided a deferred tax debit. Seventeen per cent of the total sample provided for deferred tax in 1973. In the balance sheet most companies disclosed accumulated deferred tax credit as a separate item or as a long-term liability.

The five chartered accountants were of the opinion that a deferred tax credit should be charged in the profit and loss account when depreciation claimed exceeds depreciation charged by a material amount and that accumulated deferred tax credit should be disclosed as a separate item. Three firms answered that a deferred tax debit should be established. Two firms answered that a deferred tax credit was a provision, one answered that it was a reserve, one answered that it was either a provision or a reserve and one firm indicated that it was a deferred credit. If a deferred tax credit were not provided, two firms would qualify their audit reports. Two other firms would also qualify their audit reports if the position were not adequately disclosed. Four firms would qualify their audit reports if a deferred tax credit were disclosed as part of shareholders' equity.

## INTRODUCTION

It appears to be generally accepted that differences between the amount of depreciation claimed and charged account for most of the timing differences between accounting and taxable income. Accounting for the income tax effect of these differences has been the subject of much debate. Despite this, the issue remains unresolved.

Income tax allocation was not important in New Zealand prior to the 1963-64 income year. In that year, it was possible to claim special depreciation without charging a similar amount. As it was necessary to charge ordinary depreciation until the 1968-69 income year in order to minimise taxation, special conditions applied in relation to income tax allocation. Since the 1968-69 year, taxpayers have been free to minimise taxation and to charge the amount of depreciation deemed necessary. The case for and against

interperiod income tax allocation is presented assuming no constraints on the amount of depreciation charged. This is followed by a discussion of the special circumstances which existed between 1963-64 and 1968-69 and their effect on income tax allocation.

The methods used to account for the tax effects of material differences between depreciation charges and claims by the sample companies are examined. This is followed by a discussion of the views on accounting for income tax allocation of certain chartered accountants.

### INCOME TAX ALLOCATION : THE THEORY

#### The Case for Income Tax Allocation

A Tentative Statement on Accounting Practice entitled "Allocation of Income Taxes to Accounting Periods" prepared for the Board of Research and Publications of the New Zealand Society of Accountants stated that :

"...most accountants are agreed that corporate income taxes are properly regarded as a ... cost ... rather than as a distribution of a part of the profits of a business ...."<sup>2</sup>

and that the

"... 'matching principle' ... requires that costs should be allocated to the same accounting period as the revenues (net or gross) to which they give rise or to which they are related or attributable. In the case of corporate income taxes ... it follows that the charge for taxes should be allocated to the same accounting period as items to which it relates. If an item is recognised for tax purposes in a period different from that in which it is recognised for accounting purposes, the tax effect of the item should be allocated to the period in which the item is reported for accounting purposes."<sup>3</sup>

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<sup>2</sup> Edward Stamp, "Allocation of Income Taxes to Accounting Periods : Tentative Statement on Accounting Practice", The Accountants' Journal, 45 (1966), 93.

<sup>3</sup> loc.cit.

The writer applied the above principle to the question of timing differences between depreciation claims and charges :

"In any given year the amount charged for income tax in the profit and loss account should be computed as if the amount of depreciation claimed for tax purposes were equal to the amount charged in the accounts. In those earlier years when the amount claimed for tax purposes in fact exceeds the amount written [charged] in the books, the resultant tax reduction should be credited to a separate account.... In later years, when the situation is reversed, the additional tax payments may be absorbed by appropriate charges against that account.... The above treatment is the recommended one." <sup>4</sup>

It was also recognised that :

"... there are differences of opinion within the profession ... as to the essential nature and permanence of the tax saving. It can be argued, for example, that the tax saving is associated with the entity as a whole and not with an individual asset. In a firm which is in a state of dynamic equilibrium or is expanding the tax saving will persist for such an extended period (in the absence of a change in the law) that it can be regarded as permanent. Moreover, any future liability for tax is in any event contingent upon the company continuing to be profitable." <sup>5</sup>

In 1971 a Research Bulletin, which was published with a view to revising the above statement, concluded with a similar recommendation. <sup>6</sup> However, the Research Bulletin did not refer to alternative treatments of the tax saving arising from claiming more or less depreciation than that charged.

The recommendation suggested above was similar to that of overseas professional accounting bodies. In 1944 the American Institute's Committee on Accounting Procedure asserted that :

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<sup>4</sup> ibid., 94-5.

<sup>5</sup> ibid., 95.

<sup>6</sup> D.G. Trow, Accounting for Income Taxes, Research Bulletin, New Zealand Society of Accountants, Wellington, 1971, 7.

"Income taxes are an expense that should be allocated, when necessary and practicable, to income and other accounts, as other expenses are allocated. What the income statement should reflect under this head, as under any other head, is the expense properly allocated to the income included in the income statement for the year." <sup>7</sup>

The most recent recommendation of the American Institute of Certified Public Accountants is contained in Opinion No.11 of the Accounting Principles Board :

"The Board ... has concluded that comprehensive interperiod tax allocation is an integral part of the determination of income tax expense. Therefore, income tax expense should include the tax effects of revenue and expense transactions included in the determination of pretax accounting income. The tax effects of those transactions which enter into the determination of pretax accounting income either earlier or later than they become determinants of taxable income should be recognised in the periods in which the differences between pretax accounting income and taxable income arise and in the periods in which the differences reverse. Since permanent differences do not affect other periods, interperiod tax allocation is not appropriate to account for such differences." <sup>8</sup>

A Proposed Statement of Standard Accounting Practice issued by the Institute of Chartered Accountants in England and Wales stated that :

"The 'accruals' concept of accounting ... requires that revenues and costs are accrued, matched and dealt with in the profit and loss account of the period to which they relate ... taxation expense should be based on the profit stated in the accounts rather than on the profits assessed to taxation and should therefore include the tax effects of timing differences, which must be accounted for as

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<sup>7</sup>See American Institute of Certified Public Accountants, Committee on Accounting Procedure, "Restatement and Revision of Accounting Research Bulletins", Accounting Research Bulletin No.43, American Institute of Certified Public Accountants, New York, 1953, 88.

<sup>8</sup>American Institute of Certified Public Accountants, Accounting Principles Board, "Accounting for Income Taxes", Opinion No.11, American Institute of Certified Public Accountants, New York, 1967, 169.

deferred taxation."<sup>9</sup>

This approach differs considerably from that contained in Recommendation N19 (1958) which stated :

"An amount set aside to meet future income tax is not, at the date of the balance sheet, a liability ...."<sup>10</sup>

The case for income tax allocation is based (in part) on the view that income tax is an expense.<sup>11</sup> It has been argued that income tax is a cost of making a profit and of the right to operate in a favourable economic climate.<sup>12</sup>

Moreover, in the opinion of Hendriksen :

"Income taxes are not significantly (sic) dissimilar to other expenses to require a different classification."<sup>13</sup>

It is also necessary to assert that :

"... tax accrues at the time the income is earned, regardless of whether or not the assessment by the government is levied at that time."<sup>14</sup>

<sup>9</sup> Institute of Chartered Accountants in England and Wales, "Accounting for Deferred Taxation : ED 11", Accountancy, 84 (1973), 28, par.4.

<sup>10</sup> Institute of Chartered Accountants in England and Wales, Recommendation N19 as quoted by R.J. Chambers, "Tax Allocation and Financial Reporting", Abacus, 4 (1968), 116.

<sup>11</sup> Robert T. Sprouse and Maurice Moonitz defined an expense as "... the decrease in net assets as a result of the use of economic services in the creation of revenues or of the imposition of taxes by governmental units." See A Tentative Set of Broad Accounting Principles for Business Enterprises, American Institute of Certified Public Accountants, New York, 1962, 9.

<sup>12</sup> A.W. Baylis, "Income Tax Allocation : A Defence", Abacus, 7 (1971), 162.

<sup>13</sup> Eldon S. Hendriksen, "The Treatment of Income Taxes by the 1957 AAA Statement", The Accounting Review, 33 (1958), 221.

<sup>14</sup> Thomas F. Keller, "Interperiod Tax Allocation", in Morton Backer (ed.), Modern Accounting Theory, Prentice-Hall, Englewood Cliffs, 1966, 393.

and that :

"A tax reduction which is directly related to a corresponding item of expense ... should not be reflected as a credit to income until the corresponding expense is charged to income."<sup>15</sup>

The argument that tax accrues to pre-tax accounting income is based on the view that, with the exception of permanent differences, accounting and taxable income will be the same over the life of a business enterprise.<sup>16</sup> Thus differences between accounting and taxable income, after adjusting for permanent differences, result from timing differences which should be recognised for financial reporting purposes by adopting income tax allocation procedures.

If income tax allocation is adopted, it must be assumed that in the normal course of events deferred tax credits will be credited to revenue and that deferred tax debits will be charged. These items must also conform with the definition of a liability and an asset respectively.<sup>17</sup> Maurice Moonitz suggested that a liability has the following four characteristics :

- "(1) A liability involves a future outlay of money, or an equivalent acceptable to the recipient.
- (2) A liability is the result of a transaction of the past, not of the future ...
- (3) The amount of the liability must be the subject of calculation or of close estimation ...

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<sup>15</sup> Willard J. Graham, "Income Tax Allocation", The Accounting Review, 34 (1959), 17.

<sup>16</sup> Thomas F. Keller, op.cit., 384-7.

<sup>17</sup> We will see below that by selecting appropriate definitions of a liability or an asset, the case for, or the case against, income tax allocation may be supported.

(4) Double entry is taken for granted."<sup>18</sup>

In relation to deferred tax credits, Moonitz concluded that :

"Based on our own criteria, we arrive at the conclusion that if they exist at all, these deferred taxes involve a future outlay of money. They also definitely arise out of transactions of the past engaged in by a going concern; they fit into the framework of double-entry. On the basis of reliability of estimate, however, we must walk circumspectly."<sup>19</sup>

In most cases it is reasonable to assume that a company will earn taxable profits in the future. Furthermore, rates of company tax have been relatively stable. For these reasons, there do not appear to be any major difficulties in estimating the amount of future taxes payable or the future benefit receivable. It is submitted that estimates relating to the depreciation charge may be less reliable than those relating to the calculation of deferred tax debits and credits.

If deferred tax credits are liabilities under the definition of a liability, it follows that a consistent definition of an asset will lead to the conclusion that deferred tax debits are assets.

From the above it can be seen that the case for income tax allocation is based on the view that income tax is an expense, that income tax is a tax on accounting profits after

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<sup>18</sup> Maurice Moonitz, "The Changing Concept of Liabilities", in Stephen A. Zeff and Thomas F. Keller (eds.), Financial Accounting Theory : Issues and Controversies, McGraw-Hill, New York, 1964, 252-3. It is interesting to compare the above characteristics of a liability with the definition given by Robert T. Sprouse and Maurice Moonitz (op.cit., 8). They define liabilities as "... obligations to convey assets or perform services, obligations resulting from past or current transactions and requiring settlement in the future."

<sup>19</sup> Maurice Moonitz, op.cit., 254.

adjusting for permanent differences between accounting and taxable income and that deferred tax credits and debits are liabilities and assets respectively.

#### The Case Against Income Tax Allocation

The assertion that income tax is an expense has been questioned by some opponents of income tax allocation.

Chambers wrote that :

"If taxes were in the nature of prices paid for services provided to all taxable entities in common by governments ... and if they were levied on some basis proportionate to the benefits derived by each taxable entity, there would be grounds for treating them as expenses .... But this is not the case in respect of corporate income taxes .... They do not fall equally on companies which benefit equally from publicly provided services .... By reason of these circumstances and by reason of the mixed fiscal and policy functions of income taxes, income tax can only be regarded as a form of discriminatory expropriation ...."<sup>20</sup>

It may also be argued that an expense is incurred with the view to earning revenue. However, income tax is incurred only if taxable income is earned.<sup>21</sup> Thus income tax is not directly related to revenue but is related to the difference between revenue and expenses.<sup>22</sup> This difference between expenses and income tax also supports the classification of income tax as an appropriation or expropriation of profits.

The view that income tax was not an expense was adopted by the American Accounting Association's Committee on Concepts and Standards Underlying Corporate Financial Statements in

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<sup>20</sup> R.J. Chambers, op.cit., 104.

<sup>21</sup> Eldon S. Hendriksen defined expenses as "... the using or consuming of goods and services in the process of obtaining revenues." See Accounting Theory, Irwin, Homewood, 1970, 176.

<sup>22</sup> For a development of this view see A.D. Barton, "Company Income Tax and Interperiod Allocation", Abacus, 6 (1970), 5-9.

1957 :

"Interest charges, income taxes, and true profit-sharing distributions are not determinants of enterprise net income. In determining net income to shareholders, however, ... income taxes ... are included."<sup>23</sup>

Some writers hold that :

"If income taxes were treated as a distribution of income, after the manner of dividends, most of the problems associated with the reporting of income taxes would disappear; in that event the amount of the tax bill, as reflected in the tax return, would be charged directly to retained earnings."<sup>24</sup>

Under this approach the matching of expenses with revenue would not apply, and the strongest case for income tax allocation would be defeated. Other writers hold that the classification of income tax as an appropriation of profits does not of itself eliminate the case for income tax allocation.<sup>25</sup>

Some opponents of income tax allocation argue that :

"... income taxes are an expense of doing business. But they are an expense of doing business only to the extent assessed. Income taxes which might be assessed in some future year are not proper charges against income of the current year."<sup>26</sup>

Moreover, deferred tax credits represent "... not what the firm is liable for, but what the firm expects to be liable

<sup>23</sup> American Accounting Association, Committee on Concepts and Standards Underlying Corporate Financial Statements, "Accounting and Reporting Standards for Corporate Financial Statements 1957 Revision", The Accounting Review 32 (1957), 540. (Emphasis added.)

<sup>24</sup> Maurice Moonitz, "Income Taxes in Financial Statements", The Accounting Review, 32 (1957), 175.

<sup>25</sup> A.D. Barton, "A Reply to Mr. Baylis", Abacus, 7 (1971), 174.

<sup>26</sup> Ralph S. Jones, "Allocation of Income Taxes", as quoted by Thomas F. Keller, op.cit., 387-8.

for at some future date."<sup>27</sup> This raises the question of whether deferred tax credits are liabilities and whether deferred tax debits are assets. The Committee on Accounting Concepts and Standards (referred to above) defined liabilities in the following passage :

"The interests or equities of creditors (liabilities) are claims against the entity arising from past activities or events which, in the usual case, require for their satisfaction the expenditure of corporate resources .... The discharge of a liability at a determinable date is normally required by contract or intent of parties."<sup>28</sup>

Hill has argued, apparently on the basis of the above definition, that a deferred tax credit does not give rise to a "creditor claim".<sup>29</sup>

A more pragmatic argument against the recognition of deferred tax credits, when depreciation claims exceed depreciation charges, is that a growing firm :

"... can look forward to an ever-increasing annual tax saving continuing year after year. Only a moribund firm with declining investment in capital assets is likely to be faced by a substantial deferred tax liability, and then only if its dying years are profitable ones."<sup>30</sup>

Concern over the rapid increase in the amount at which accumulated deferred tax credit is stated in some balance

<sup>27</sup> Thomas M. Hill, "Some Arguments Against the Inter-period Allocation of Income Taxes", The Accounting Review, 32 (1957), 358.

<sup>28</sup> American Accounting Association, Committee on Accounting Concepts and Standards Underlying Corporate Financial Statements, op.cit., 542.

<sup>29</sup> Thomas M. Hill, op.cit., 358.

<sup>30</sup> Sidney Davidson, "Accelerated Depreciation and the Allocation of Income Taxes", in Stephen A. Zeff and Thomas F. Keller, op.cit., 317. Some examples of the effect of special depreciation claims by growing, static and declining firms on aggregate claims over the life of assets are discussed on pages 231-238.

sheets of United States companies has been expressed by a senior partner of Price, Waterhouse and Company :

"We have now had more than a decade of experience with extensive hypothetical deferred income tax accumulations resulting from depreciation .... There are many cases where the deferred tax accumulations in the balance sheet are so large as to raise serious questions as to whether at this point further charges in the income statement for deferred taxes are supportable - even questions as to whether they would be misleading."<sup>31</sup>

Although the view that, under certain assumptions, accelerated depreciation may result in a permanent and growing tax gift has considerable merit, it is submitted that it is not appropriate to argue that income tax allocation is not necessary on this point only. First, it is necessary to assume that special depreciation (or other depreciation concession) will continue to be available on at least as generous a scale as the present one. We have already seen that these allowances are subject to change with little advance notice and that they have fixed terminating dates.<sup>32</sup> Secondly, accounting on the "roll-over basis" appears to be inconsistent with the practices adopted in respect of creditors and other liabilities and assets. This point was made by Jaedicke and Nelson in reply to Davidson's article :

"So long as income taxes are treated as expenses, the differential tax resulting from using different accounting methods for reporting and taxation purposes should be 'allocated' so as to show the new source of funds arising from this practice. This should be done regardless of whether or not

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<sup>31</sup>Herman W. Bevis, "Fair Reporting of Income Tax Cost and Liability to Investors", in Thomas F. Keller and Stephen A. Zeff (eds.), Financial Accounting Theory II : Issues and Controversies, McGraw-Hill, New York, 1969, 414.

<sup>32</sup>See Chapter II.

the liability will ever have to be repaid." <sup>33</sup>

The case against income tax allocation is based on the view that income taxes are appropriated and that deferred tax credits and debits are not liabilities and assets respectively.

#### Income Tax Allocation : Conclusion

The case for and against income tax allocation was examined primarily with reference to deferred tax credits. However, both cases could have been argued with reference to the question of whether depreciation charged in excess of that claimed gives rise to a deferred tax debit. In practice, more companies charge less depreciation than that claimed, than do the converse. <sup>34</sup> Moreover, if a deferred tax credit is (or is not) recognised when depreciation is claimed in excess of that charged, it follows that a deferred tax debit should (or should not) be recognised when depreciation claimed is less than that charged.

Despite two decades of debate on the question of income tax allocation the issue remains unsolved. The case for income tax allocation is based on the view that income tax should be regarded as a tax on accounting income after adjusting for permanent differences between accounting and taxable income over the life of a business enterprise. If tax is viewed as a tax on taxable income then the question of income tax allocation depends on whether a deferred tax credit (or debit) constitutes a liability (or an asset) under

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<sup>33</sup> Robert K. Jaedicke and Carl L. Nelson, "The Allocation of Income Taxes : A Defense", in Thomas F. Keller and Stephen A. Zeff, op.cit., 407.

<sup>34</sup> See page 144.

the definitions adopted. Without a coherent theory of accountancy and accepted definitions, the debate on income tax allocation will continue.

Income Tax Allocation Prior to the  
1968-69 Income Year<sup>35</sup>

In the above discussion on income tax allocation it was assumed that there were no constraints on the amount of depreciation charged and on the accumulated depreciation charge. However, from the 1963-64 income year until the 1968-69 income year it was necessary to charge depreciation at maximum ordinary tax rates in order to minimise taxation. Special depreciation could be claimed without charging a similar amount. From the early 1940s until the 1963-64 income year it was necessary to charge depreciation at maximum tax rates in order to minimise taxation. For most of this period special depreciation was applicable. Thus prior to the 1968-69 income year there were significant constraints on the amount of depreciation charged and on the accumulated depreciation charge. These circumstances gave rise to a special problem in relation to income tax allocation. This was the problem of;

- (1) minimising taxation and
- (2) generating the "correct" impact on net tax-paid profit and the same impact on the amount at which plant and machinery was stated net of accumulated depreciation charge.<sup>36</sup>

Professor Schmitt has argued that a firm should plan

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<sup>35</sup>The discussion presented below is based on the following papers by G.J. Schmitt, "Company Tax Provisions", unpublished paper, Victoria University of Wellington, 1970 and The Company Tax Provision : Its Significance in Evaluating Performance and Prospects, New Zealand Society of Accountants, Wellington, 1971.

<sup>36</sup>G.J. Schmitt, "Company Tax Provisions", op.cit., 29-30.

the net tax-paid charge for depreciation over the life of an asset :

"... that is ... the combined effect on tax-paid profits of the amount that is claimed by way of depreciation in the income tax return and the amount, if any, that is charged or credited to a provision for deferred tax."<sup>37</sup>

If maximum tax rates of depreciation provided a charge which was, in the opinion of the directorate, "reasonably necessary for the purpose"<sup>38</sup> and if the accumulated depreciation charge computed at the various tax rates which applied over the lives of the relevant assets was also "reasonably necessary", the question of income tax allocation did not arise. Similarly, if a company claimed and charged depreciation at less than maximum tax rates of depreciation there was no need for income tax allocation. In the first case, the company was able to minimise taxation and generate the "correct" impact on net tax-paid profit and the same impact on the amount net of accumulated depreciation charge at which the relevant assets were stated. In the second case, the "correct" impact on revenue and on the net amount at which depreciable assets were stated was obtained by forgoing, or deferring to a later date, depreciation claims. In other cases it may not have been possible to achieve consistency between the profit and loss account and the balance sheet.

If ordinary tax rates of depreciation resulted in a depreciation charge in excess of that "reasonably necessary for the purpose" but were charged in order to minimise taxation, pre-tax profit would have been understated and the

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<sup>37</sup>G.J. Schmitt, The Company Tax Provision : Its Significance in Evaluation Performance and Prospects, op.cit., 25.

<sup>38</sup>Companies Act 1955, Eighth Schedule, par.2(2).

accumulated depreciation charge would have been overstated. By claiming special depreciation without charging a deferred tax credit, it was possible to offset in part, or in whole, the understatement of pre-tax profit.<sup>39</sup> In this case it was possible to obtain a "correct" net tax-paid charge for depreciation and to minimise taxation. However, the amount at which the relevant assets were stated net of accumulated depreciation charge was "incorrect". If a deferred tax credit were provided, the profit after-tax would have been understated (or understated to a greater extent) and the net amount at which plant and machinery was stated would still have been understated.

Alternatively, a company could have planned its depreciation charge to obtain the "correct" impact on the net amount at which plant and machinery was stated. If ordinary tax rates of depreciation were considered excessive, this would have required depreciation claims to be forgone or deferred to a later period. On the other hand, if the "correct" impact on the net amount at which plant and machinery was stated required depreciation to be charged in excess of that claimed, the net tax-paid charge for depreciation would have been "incorrect".

Professor Schmitt has concluded that, during the period from the 1963-64 income year until the 1968-69 income year, the net tax-paid charge should have been determined at a "correct" amount even if this resulted in stating assets at an "incorrect" amount net of accumulated depreciation charge.<sup>40</sup>

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<sup>39</sup> If this more than offset the understatement of pre-tax profit, there might have been a case for income tax allocation in respect of the excess.

<sup>40</sup> G.J. Schmitt, "Company Tax Provisions", op.cit., 40.

Further, if special depreciation were claimed but not charged during this period, a deferred tax credit did not necessarily generate the "correct" net tax-paid charge for depreciation.<sup>41</sup>

Since the 1968-69 income year, directorates have been free to claim ordinary and special depreciation without charging a similar amount. It is therefore possible to minimise taxation, to generate the "correct" impact on tax-paid profits and the same impact on the amount at which plant and machinery is stated net of accumulated depreciation charge. The net amount at which plant and machinery is stated could also be recalculated to eliminate the effect of excessive depreciation charges prior to the 1968-69 income year. Since that year the question of whether a deferred tax credit (debit) should be provided in respect of depreciation charged (claimed) in excess of that claimed (charged) depends upon which side of the income tax allocation controversy one takes.

INCOME TAX ALLOCATION AND THE ANNUAL REPORTS OF  
CERTAIN PUBLIC COMPANIES

In the previous chapter the methods used by the sample companies<sup>42</sup> to compute their depreciation charges on plant and machinery were classified with reference to the method of computing depreciation claims. From that analysis it is possible to identify those companies which reported timing differences between depreciation claims and charges during the period from 1962 to 1973.<sup>43</sup> A study of the annual reports

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<sup>41</sup> ibid., 42.

<sup>42</sup> The methods used in selecting the sample are described in Appendix C.

<sup>43</sup> See Table V-4.

of these companies was undertaken to determine whether those companies which generally charged less depreciation than that claimed provided deferred tax credits. If deferred tax credits were provided, the profit and loss account and appropriation account were examined to determine if deferred tax credits were appropriated or charged against revenue in the former account. The classification of accumulated deferred tax credit in balance sheets was also analysed. In the case of those companies which generally charge more depreciation than that claimed, the aim of the study was to determine whether deferred tax debits were provided. The results relate to differences between depreciation claims and charges only. The overall findings are presented below and a study of individual companies is reported on in Appendix G.

Where a company's method of computing depreciation charges was tabulated as "unknown" in Table V-4, it was impossible to determine whether income tax allocation was applicable. For this reason, these companies are excluded from the present analysis.

Although a company may compute its depreciation charges and claims by different methods, the amount charged in a given year may be the same as that claimed. One company in 1972 and another in 1973 disclosed that the amount claimed and charged in the relevant years was the same, although the method used to compute claims and charges differed. Both of these companies were not analysed in the relevant year.

Table VI-1 discloses whether income tax allocation was applied in respect of differences between depreciation

TABLE VI-1  
DEPRECIATION CHARGES AND CLAIMS AND INCOME TAX ALLOCATION

	1962		1963		1964		1965		1966		1967		1968		1969		1970		1971		1972		1973	
	N <sup>1</sup>	% <sup>2</sup>	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Deferred Tax Credit Not Provided (Y)	-	-	1	17	5	41	4	27	6	32	6	35	7	41	9	41	12	40	15	42	15	38	13	34
Deferred Tax Debit Not Provided (Z)	5	100	5	83	6	50	8	53	8	42	7	41	6	35	6	27	8	27	8	22	8	20	7	19
Sub-total Income Tax Allocation Not Practised (Y + Z)	5	100	6	100	11	91	12	80	14	74	13	76	13	76	15	68	20	67	23	64	23	58	20	53
Deferred Tax Credit Was Charged in Profit and Loss Account (W)	-	-	-	-	1	9	3	20	4	21	4	24	4	24	6	27	8	27	11	30	12	31	15	39
Deferred Tax Credit Was Deducted in Appropriation Account (X)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5	1	3	1	3	3	8	2	5
Treatment of Income Tax Allocation Was Unknown (U)	-	-	-	-	-	-	-	-	1	5	-	-	-	-	-	-	1	3	1	3	1	3	1	3
Total	5	100	6	100	12	100	15	100	19	100	17	100	17	100	22	100	30	100	36	100	39	100	38	100

Not Analysed<sup>3</sup> (69) (70) (68) (69) (71) (77) (79) (77) (74) (72) (71) (71)

<sup>1</sup>"N" denotes number.

<sup>2</sup>Calculated to nearest one per cent.

<sup>3</sup>Consists of those companies for which the method of computing depreciation charges was classified as unknown in Table V-4, and those companies which claim and charge the same amount of depreciation.

charges and claims from 1962 to 1973. With the exception of 1972 and 1973, more companies which generally charged less depreciation than that claimed did not provide a deferred tax credit than those that did. In 1972 half of the relevant companies provided a deferred tax credit and in 1973 seventeen companies provided for the future tax liability compared with thirteen which did not.

From 1962 to 1973 between five and eight companies generally charged more depreciation than that claimed. None of these companies provided a deferred tax debit. This probably reflects conservatism in accountancy in addition to the theoretical controversy as to whether income tax allocation should be applied. Most of the companies which provided a deferred tax credit and incurred a tax loss, reduced the accumulated deferred tax credit by up to the amount of the expected tax saving from the tax loss carried forward.

From the table it can be seen that most of the companies which charge more or less depreciation than that claimed did not adopt income tax allocation between 1962 and 1973. Despite this, there was a significant decline in the percentage of companies which did not provide deferred tax credits or debits in respect of timing differences between depreciation claims and charges. From 1962 to 1965 eighty per cent or more of the relevant companies did not practise income tax allocation. In each year from 1966 to 1970 between sixty-seven per cent and seventy-six per cent of the companies analysed did not provide deferred tax credits or debits. Since 1971 there has been a further decline. In 1973 fifty-three per cent of the companies did not adopt

income tax allocation procedures. The main reason for this trend is the growth in the number of companies which charge less depreciation than that claimed and provide deferred tax credits. As a consequence, companies which charged more depreciation than that claimed and did not provide deferred tax debits accounted for a declining percentage of the total number of companies which charged and claimed different amounts of depreciation. In 1962 these companies accounted for all of the companies analysed. However, by 1973 companies which charged more depreciation than that claimed accounted for nineteen per cent of the companies analysed.

From Table VI-1 it can be seen that in 1964 a sample company first provided a deferred tax credit in respect of depreciation claimed in excess of that charged.<sup>44</sup> By 1973 fifteen companies (thirty-nine per cent) charged deferred tax in their profit and loss account. From 1969 to 1973 between one and three companies deducted deferred tax credit in respect of the relevant year in the appropriation account. Companies which adjusted accumulated deferred tax credit in respect of prior years or as a result of change in the rate of tax were not included in this classification.

One company in 1966 disclosed that depreciation was charged in excess of that claimed and did not disclose its taxation provision. For this reason it is not clear whether a deferred tax debit was created. One other company indicated that depreciation on certain assets was not charged from 1970

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<sup>44</sup>Special depreciation was charged at the rate of two, three, four, five and six per cent in the first, second, third, fourth and fifth years respectively.

to 1973. As it was not clear whether depreciation was claimed in respect of the relevant assets, it is impossible to determine whether income tax allocation was applicable. The treatment of income tax allocation by these companies was classified as "unknown".

The table discloses that the controversy over income tax allocation is reflected in the practices adopted by the sample companies. It appears that the practice of providing deferred tax credits has gained some ground as more companies adopt methods of computing depreciation charges which are independent of those used to calculate depreciation claims. However, there was no evidence that deferred tax debits were provided when depreciation charges exceeded depreciation claims. Finally, it should be noted that the seventeen companies which charged or appropriated deferred tax in 1973 represented less than sixteen per cent of the total sample of one hundred and nine companies.<sup>45</sup> In other years a smaller percentage of the sample companies provided deferred tax credits in respect of timing differences between depreciation claims and charges.

The balance sheet presentation of accumulated deferred tax credit was also studied. In Table VI-2 it can be seen that from 1970 to 1973 one company classified accumulated deferred tax credit as shareholders' equity.<sup>46</sup> This classification was also adopted by one other company from 1971 to 1973.<sup>47</sup> Both companies referred to deferred tax credit as

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<sup>45</sup> In 1973 two of the one hundred and eleven sample companies were taken-over.

<sup>46</sup> Company number 73.

<sup>47</sup> Company number 88.

TABLE VI-2  
BALANCE SHEET CLASSIFICATION OF ACCUMULATED  
DEFERRED TAX CREDIT

Year <sup>1</sup>	Shareholders' Equity		Term Liabilities		Separate Item		Current Liabilities		Total	
	N <sup>2</sup>	% <sup>3</sup>	N	%	N	%	N	%	N	%
1964	-	-	-	-	-	-	1	100	1	100
1965	-	-	1	33	1	33	1	33	3	100
1966	-	-	2	50	2	50	-	-	4	100
1967	-	-	2	50	2	50	-	-	4	100
1968	-	-	2	40	3	60	-	-	5	100
1969	-	-	3	50	3	50	-	-	6	100
1970	1	12	4	50	2	25	1	12	8	100
1971	2	17	6	50	3	25	1	8	12	100
1972	2	11	6	33	8	44	2	11	18	100
1973	2	11	7	39	7	39	2	11	18	100

<sup>1</sup>In 1962 and 1963 none of the sample companies established a deferred tax credit in respect of timing differences between depreciation claims and charges.

<sup>2</sup>"N" denotes number.

<sup>3</sup>The percentage given is that of the number for a given classification as a per cent of the total for the year. Percentages are correct to the nearest one per cent.

tax equalisation account. One of these companies is engaged in a fixed-capital intensive activity which, by its nature, results in a "lumpy" capital expenditure programme. From 1966 to 1970 a reserve for deferred tax was classified as a separate item. In 1970 the company stated that the reserve "... is properly included in Shareholders' Funds." This change in presentation resulted in a qualified audit report. A similar presentation and audit report was included in the 1971, 1972 and 1973 annual reports.<sup>48</sup> The other company which included tax equalisation account in shareholders' equity has been in a tax loss position since 1969. The purpose of the account was "... to equalise the effect of normal income tax in future years when special allowances and incentives may not be available to the same extent." Both companies charged the current amount for income tax equalisation in the profit and loss account. The second company, however, does not charge income tax equalisation at forty-five per cent of the difference between depreciation claimed and that charged. The method of computing the amount charged was not disclosed.

Almost an equal number of companies classified accumulated deferred tax credit as a term liability or a separate item. The latter classification was recommended in the Research Bulletin prepared by Trow.<sup>49</sup> These classifications accounted on average for more than eighty-five per cent of the accumulated deferred tax credits disclosed between

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<sup>48</sup>This is the only case where a sample company received a qualified audit report in relation to accounting for depreciation, investment allowance or the associated tax effects between 1962 and 1973.

<sup>49</sup>D.G. Trow, op.cit., 7.

1964 and 1973. The classification of accumulated deferred tax credit as a separate item appears to imply a certain uneasiness as to whether this item is in fact a liability. Most of the companies which adopted this classification disclosed deferred tax credit immediately before or after shareholders' equity.

A small number of firms disclosed accumulated deferred tax credit as a current liability. This classification tended to be used where the amount involved was small in relation to the current tax provision. Large accumulated deferred tax credits might have an adverse effect on the current ratio and this may be a factor discouraging their classification as current liabilities.<sup>50</sup> Moreover, most deferred tax credits are not payable in the current period or normal operating cycle. For this reason, their classi-

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<sup>50</sup> It is also interesting to speculate whether accumulated deferred tax credits and debits constitute liabilities and assets respectively under the definition of those items contained in the trust deeds of sample companies. It may be that restrictive covenants contained in trust deeds are of some importance in determining whether a company will provide for deferred tax. A preliminary reading of the trust deeds of seven of the sample companies selected at random suggests that definitions of terms such as profit, asset and liability are rather vague. Furthermore, such definitions often refer to the amount stated in the latest balance sheet or profit and loss account to which certain adjustments are made including "such further or other adjustments (if any) which in the opinion of the auditors are appropriate." Thus if an auditor were of the view that deferred tax should be provided, this would apparently apply for the purposes of determining borrowing limits. A 1971 trust deed went so far as to state "that in all other respects [the balance sheet] complies with the principles of accounting practice from time to time prescribed by the New Zealand Society of Accountants and the requirements of the Companies Act." If mandatory statements on accounting for depreciation, investment allowance and the related tax effects were issued along the lines of the Tentative Statements, the balance sheet presented to shareholders could be vastly different from that used to compute borrowing restrictions. The importance of trust deeds to borrowers and lenders suggest that they deserve more study than they have received to date.

fication as a non-current item would appear to be consistent with existing practices.

None of the companies provided a schedule giving the amount of accumulated deferred tax credit expected to be paid in each future period. Most companies provide a schedule of expected repayments in respect of other non-current liabilities.

The above analysis reveals that directorates, like academics, have conflicting views on the propriety of providing deferred tax credits and debits. Although the former are generally disclosed as non-current items in the balance sheet, directorates seem to be almost equally divided on whether deferred tax credits are long-term liabilities or a separate item.

THE VIEWS ON INCOME TAX ALLOCATION OF CERTAIN  
CHARTERED ACCOUNTANTS IN PUBLIC PRACTICE

Five chartered accountants participated in a questionnaire survey which included five questions on income tax allocation.<sup>51</sup> The answers given to the relevant questions are discussed below.<sup>52</sup>

Question 8(a) stated

"Is your firm of the opinion that a deferred tax credit should generally be provided when the current year's depreciation claimed for taxation purposes exceeds depreciation charged against revenue for financial reporting purposes?"

Yes/No"

All five participants answered "Yes" to this question.<sup>53</sup> In

<sup>51</sup> The methods used in conducting this survey are described in Appendix P.

<sup>52</sup> The tabulated answers to the relevant questions are given in Exhibit P-3.

<sup>53</sup> This result is statistically significant at the 5% level.

question 8(b), this answer was supported by the view that recognition of a future tax liability was necessary to obtain a proper matching of expenses with related revenue. This implies that the firms were of the opinion that income tax is an expense and not an appropriation of profits. In question 8(c), four participants answered that a deferred tax credit need not be provided if the directors could show that the future liability would be deferred indefinitely or that payment was spread over such a long period that the amount involved in each year would be immaterial. These situations were given as "special circumstances".

The firms were also requested to indicate whether they would qualify their audit reports if the current year's excess of depreciation claimed over depreciation charged had a material effect on net profit and if a deferred tax credit were not provided. Two participants answered that they would qualify their audit reports, two answered that they would also qualify their reports unless the position was adequately disclosed in the notes to the accounts and one participant answered that its audit report would not be qualified.

Question 9(a) requested participants to answer whether a deferred tax credit arising from timing differences between depreciation charged and claimed was regarded as :

- (i) A provision,
- (ii) A reserve,
- (iii) Either a provision or a reserve (i.e. that these words are interchangeable), or
- (iv) Other (please specify)?

Two participants answered that deferred tax credit was a provision, one of which quoted the definition of a provision

from the Companies Act <sup>54</sup> in support of the answer given. The other firm stated that a deferred tax credit was an "... estimated ... liability which, other factors remaining constant, will have to be met in the future." One firm stated that deferred tax credit was a reserve "... in a special category being placed immediately after shareholders' funds but before term liabilities." The word reserve was used "for want of a better description" and the classification suggested was intended to "give an indication of the indefinite term of the liability" (emphasis added). This answer would suggest that the Eighth Schedule of the Companies Act was not understood. If deferred tax is a known liability, then under that Act the amount cannot be referred to as a reserve.

The fourth firm answered that deferred tax credit was a reserve or a provision "Because it is not a legal liability but merely an equalisation account." If deferred tax credit is not a known liability (in this case the firm appears to take the view that the term "liability" should include legal liabilities only) then it cannot be a provision.

The fifth firm gave a different answer to that of the other participants. It answered that deferred tax credit was "A deferred credit, i.e. a benefit received now but deferred until some future point of time." The reason for this answer was stated as follows :

"Not a provision because not providing for a liability. Not a reserve, because not part of shareholders' funds. Is separate item standing on its own outside of current liabilities, term liabilities and shareholders' funds."

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<sup>54</sup>Companies Act 1955, Eighth Schedule, par.2(2).

This approach is similar to that recommended in Opinion No.11 issued by the Accounting Principles Board of the American Institute of Certified Public Accountants.<sup>55</sup>

From the five participants, four different answers were received to the above question. Three of these relate to different conceptual views of a deferred tax credit, viz. a liability, an equalisation account and a deferred credit. Moreover, the answers suggest that some leading chartered accountants are not yet fully conversant with the definition of a provision and a reserve contained in the Eighth Schedule of the Companies Act 1955.

In question ten all of the participants answered that a deferred tax credit should be disclosed as a separate item in the balance sheet.<sup>56</sup> One might have expected those firms which answered that a deferred tax credit was a provision to include that item in long-term liabilities (with the exception of the amount payable in the current period which would be included in current liabilities). Similarly, the firm which answered that a deferred tax credit was a reserve

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<sup>55</sup> The Accounting Principles Board in Opinion No.11 and the Institute of Chartered Accountants in England and Wales in "ED 11" viewed deferred tax credits as deferred revenue rather than as an amount owed to the tax gatherer. Similarly, deferred tax debits were viewed as deferred expenditure. This approach emphasises the effect of income tax allocation on periodic income. It is interesting to note that ED 11 is more explicit in its discussion of the "deferred method" and its emphasis on periodic income than Opinion No.11. Under the "deferred method" the accumulated amount of credits or debits is not adjusted if the rate of taxation is changed. See American Institute of Certified Public Accountants, Accounting Principles Board, op.cit., 162-3 and 169, pars.19 and 35, and Institute of Chartered Accountants in England and Wales, "Accounting for Deferred Taxation", op.cit., 29, pars.13-15.

<sup>56</sup> One firm answered that disclosure of accumulated deferred tax credit under long-term liabilities was acceptable but less preferred.

might have been expected to classify that item as part of shareholders' equity. A similar classification may be appropriate for an income tax equalisation account if that account is viewed as a means of smoothing net profit after-tax. A separate classification of deferred tax in the balance sheet is consistent with the view that this item is a deferred credit.<sup>57</sup> However, if deferred tax credit is viewed as deferred revenue, and this appears to be the view of one participant, then this item should be presented as a current liability, long-term liability or partly in each of these classifications.

One firm, which answered that a deferred tax credit was a provision, indicated that that item should be so classified as :

"It may have some elements of a long term liability but as the current portion cannot be ascertained with accuracy, it is preferable to place it between long term and current liabilities without further re-allocation."

One firm which answered that a deferred tax credit was a reserve and that it should be classified as a separate item in the balance sheet wrote that :

"... deferred tax credit is neither Shareholders' Funds nor a Term Liability with a definite date of termination. We consider it should be placed between these two items in the Balance Sheet."

The firm which answered that a deferred tax credit was either a reserve or provision supported its answer that that item should be disclosed separately between shareholders' equity and long-term liabilities as "... it could be used for a

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<sup>57</sup> Under this approach the balance sheet equation is modified to include deferred credits and debits:

Assets + deferred debits = liabilities + deferred credits + owners' equity.

dividend distribution." It is difficult to see how a leading firm of chartered accountants could answer that a deferred tax credit was either a reserve or a provision, that it should be charged "above the line" in the profit and loss account, that the accumulated deferred tax credit should be disclosed as a separate item outside of shareholders' equity and that the credit could be used for a dividend distribution.

In question 10(c) participants were requested to answer the following question :

Given that a deferred tax credit is a material item would your firm qualify its audit report if this item were generally classified in the balance sheet of a listed company under :

- |       |                            |        |
|-------|----------------------------|--------|
| (i)   | Shareholders' funds?       | Yes/No |
| (ii)  | Long term liabilities?     | Yes/No |
| (iii) | Current liabilities?       | Yes/No |
| (iv)  | A separate classification? | Yes/No |

Four firms would qualify their audit reports if deferred tax credit were classified under shareholders' equity. The firm which answered "No" to this part of the question also answered that a deferred tax credit could be used for a dividend distribution. This firm answered that it would qualify its audit report if deferred tax credit were included in current liabilities.

The participant which stated that deferred tax was a deferred credit was the only firm to answer that it would qualify its audit report if accumulated deferred tax credit were included in long-term liabilities. This firm would also qualify its report if the relevant item were included in current liabilities. A firm which answered that deferred tax credit was a provision answered that it would also qualify its audit report if that item were included in current liabilities.

As was expected from the answer given to question 10(a), none of the firms would qualify their audit reports if accumulated deferred tax credit were classified as a separate item in the balance sheet.

All of the participants answered in question 11(a) that deferred tax credit should be charged as a recurring or unexceptional item in the profit and loss account.<sup>58</sup> These answers were generally supported by reference to the opinion that deferred tax credit should be treated in a similar manner to the current tax provision.

Under the deferred credit approach to income tax allocation, which has the support of some professional accounting bodies, the accumulated deferred tax credit is not adjusted for a permanent increase or decrease in the rates of taxation. In question twelve all of the participants answered that the accumulated amount should be adjusted given a permanent change in the rates of taxation. One firm answered in question 9(a) that deferred tax was a deferred credit. If this firm were consistent, it would have answered that an adjustment would not be made for permanent increases or decreases in the rates of taxation.

The last question on income tax allocation dealt with deferred tax debts. Question 13(a) requested participants to indicate whether a deferred tax debit should generally be provided when the current year's depreciation charge exceeds depreciation claimed. Three participants answered that a deferred tax debit should be provided and two gave the opposite answer. The latter supported their answers as

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<sup>58</sup> This result is statistically significant ( $p < 0.05$ ).

follows :

"We do not like recognising future tax assets"

and

"It conforms with conservative reporting".

The first quotation was from the firm which answered that a deferred tax credit could be used for a distribution. The second participant answered that a deferred tax credit was a provision and also answered that if the fact that depreciation was claimed in excess of that charged was not adequately disclosed, it would qualify its audit report if a deferred tax credit were not provided (see question 8(d)).

The three participants who supported the recognition of deferred tax debits generally argued that this was part of income tax allocation procedures :

"If income tax allocation is accepted as a proper accounting treatment any timing difference between taxable and accounting income should be reflected by a deferred tax adjustment."

Part (d) of question thirteen requested participants which supported the recognition of deferred tax debits to answer whether they would qualify their audit reports if the excess of depreciation charged over that claimed had a material effect on net profit and if a deferred tax debit were not provided. Two firms answered that they would qualify their audit reports. One of these firms answered that if a note were added to the accounts explaining the position its audit report would not be qualified. One firm answered that it would not qualify its audit report.

The five chartered accountants who participated in this survey were of the opinion that a deferred tax credit should

be provided if depreciation claimed in excess of that charged would have a material effect on net profit, that the deferred tax credit should be charged in the profit and loss account and that accumulated deferred tax credit should be disclosed as a separate item in the balance sheet. Two participants were of the view that a deferred tax debit should not be established if depreciation charged in excess of that claimed had a material effect on net profit. Two firms answered that deferred tax was a provision, one answered that it was a reserve, one that it was either a provision or a reserve and one that it was a deferred credit. Two firms indicated that they would qualify their audit reports if a deferred tax credit were not provided and two others would also qualify their reports if the position were not adequately disclosed to shareholders. Four firms would also qualify their audit reports if accumulated deferred tax credit were disclosed as shareholders' equity in the balance sheet of listed companies.

#### CONCLUSION

The case for income tax allocation in respect of timing differences between depreciation charges and claims is based on the view that income tax is an expense and that it is a tax on accounting income after adjusting for permanent differences between accounting and taxable income over the life of a business enterprise. If income tax is regarded as a tax on taxable income, the question of income tax allocation depends on whether a deferred tax credit is a liability and whether a deferred tax debit is an asset. Authoritative definitions may be quoted in support of, or in

opposition to, the treatment of deferred tax credits and debits as liabilities and assets respectively.

Prior to the 1968-69 income year, rulings by the Commissioner of Inland Revenue restricted the ability of companies to generate the "correct" tax-paid charge for depreciation and the "correct" accumulated charge for depreciation. In these circumstances, a charge for deferred tax in respect of special depreciation claimed only did not necessarily result in "correct" impact on net tax-paid profits. Under certain conditions, the failure to charge deferred tax resulted in a truer and fairer profit after-tax than would have been reported if deferred tax were charged or if special depreciation were charged and claimed.

With the exception of 1972 and 1973, more companies which generally charge less depreciation than that claimed did not provide a deferred tax credit than those that did. In 1972 half of the relevant companies provided a deferred tax credit and in 1973 seventeen companies provided for the future tax liability compared with thirteen which did not. From 1962 to 1973 between five and eight companies generally charged more depreciation than that claimed. None of these companies established a deferred tax debit. Although most of the companies which disclosed timing differences between depreciation claims and charges did not adopt income tax allocation procedures between 1962 and 1973 (inclusive), there was a definite trend towards the adoption of income tax allocation. This trend is related to the growth in the number of companies which charge less depreciation than that claimed and provide for deferred tax. The seventeen companies which provided a deferred tax credit in 1973 represented

sixteen per cent of the total sample of one hundred and nine companies.

Most of the companies which provide for deferred tax disclosed accumulated deferred tax credit as a separate item or as a long-term liability in their balance sheets. Two companies included tax equalisation account in shareholders' equity. One of these received a qualified audit report in respect of this presentation.

A survey of the views on accounting for income tax allocation of five chartered accountants in public practice resulted in some dismaying answers. The five participants were of the opinion that a deferred tax credit should be charged in the profit and loss account if depreciation claimed in excess of that charged had a material effect on net profit and that the accumulated deferred tax credit should be disclosed as a separate item in the balance sheet. Two firms were of the view that a deferred tax debit should not be established if depreciation charged in excess of that claimed would have a material effect on net profit.

Two firms answered that a deferred tax credit was a provision, one answered that it was a reserve, one answered that it was either a provision or a reserve and one firm indicated that deferred tax credit was a deferred credit. Two firms indicated that they would qualify their audit reports if a deferred tax credit were not provided and two other firms answered that they would also qualify their audit reports if the position were not adequately disclosed to shareholders. Four firms answered that they would qualify their audit reports if accumulated deferred tax credit were disclosed as shareholders' equity.

The above discussion revealed that academics, directorates and chartered accountants in public practice have contrasting views on the propriety of providing deferred tax credits and debits, the purpose of these items and their nature. With the introduction of the single first year depreciation scheme from 1 April, 1975, it is expected that there will be a significant growth in the number of companies which claim more depreciation than that charged. The question of income tax allocation will therefore gain in importance. Despite this, it is expected that contrasting treatments will continue.

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CHAPTER VII  
ACCOUNTING FOR INVESTMENT ALLOWANCE

ABSTRACT

In this chapter, a brief history of investment allowance is presented before discussing methods of accounting for that allowance. The methods used by certain public companies in accounting for the allowance are tabulated from their annual reports. This analysis is supported by data given in answer to a question on the treatment of investment allowance which was included in the questionnaire sent to one hundred and eleven companies. The views on accounting for investment allowance of five chartered accountants are also presented.

Investment allowance is a tax gift which, once granted, is not repayable. It does not affect the amount or timing of ordinary and special depreciation claims. Investment allowance is granted in the first year in which qualifying assets are used. It is submitted that accounting theory supports the view that the tax saving arising from claiming the allowance should be reflected in a lower taxation provision than would otherwise be required in the year in which the allowance is claimed.

All of the sample companies which disclosed their method of accounting for investment allowance recorded the tax saving as a reduction in provision for taxation (or an increase in tax loss carried forward) in the year in which the allowance was claimed. More than fifty per cent of the sample companies did not disclose their method of accounting for investment allowance. The forty-five companies which answered question twenty-three and qualified for investment allowance, recorded investment allowance as a reduction in taxation provision in the year in which qualifying assets were first used. Four of the five chartered accountants were of the opinion that investment allowance should be accounted for by that method.

INTRODUCTION

The introduction of investment allowance in 1963 raised the question of the appropriate treatment of the resulting tax saving in the annual reports of public companies. In this chapter, a brief history of investment allowance is presented. This is followed by a discussion of the methods of accounting for the allowance and a survey of the methods used by the one hundred and eleven sample companies. The survey is based on

a study of the annual reports of the relevant companies and an analysis of the answers given to question twenty-three of the original questionnaire. Finally, the views on accounting for investment allowance of five chartered accountants are presented.

#### A BRIEF HISTORY OF INVESTMENT ALLOWANCE<sup>1</sup>

In 1963 a ten per cent investment allowance on a wide range of new agricultural and manufacturing plant, machinery or equipment was introduced.<sup>2</sup> Assets "received or taken" into the premises at which they were first used on, or after, 1 August, 1963 qualified for the allowance.<sup>3</sup> The investment allowance was suspended from 17 June, 1966, except where a binding contract was completed prior to that date.<sup>4</sup>

In 1970 investment allowance was re-introduced.<sup>5</sup> New plant, machinery or equipment used in agricultural, manufacturing or fishing activities acquired and first used on, or after, 26 June, 1970 qualified for a ten per cent allowance. From 1 April, 1972 the range of qualifying assets was extended to include new plant and machinery other than new manufacturing plant and machinery.<sup>6</sup> Assets acquired on, or after, 23 June, 1972 qualified for a twenty per cent allowance unless they were acquired pursuant to a contract

<sup>1</sup>This section summarises the discussion presented in Appendix I.

<sup>2</sup>Land and Income Tax Amendment Act (No.2) 1963, ss.11 and 12.

<sup>3</sup>loc.cit.

<sup>4</sup>Hon. H.R. Lake, "Financial Statement", Appendix to the Journals of the House of Representatives, 1966, 1, B-6, 4.

<sup>5</sup>Land and Income Tax Amendment Act 1970, ss.22, 23 and 25.

<sup>6</sup>Land and Income Tax Amendment Act (No.2) 1972, s.14(7).

completed prior to that date.<sup>7</sup> From 1 April, 1975 investment allowance will be replaced by the new single first year depreciation scheme.<sup>8</sup>

Since 1963 a West Coast investment allowance has been available on new plant, machinery, equipment or buildings used in a re-development project in certain areas of the South Island.<sup>9</sup> From 1 April, 1964 second-hand assets also qualified for this allowance.<sup>10</sup> The rate of the allowance was twenty per cent from 11 July, 1963 until 16 June, 1966 and from 27 June, 1969 to 22 June, 1972. From 17 June, 1966 to 26 June, 1972 the allowance continued at the reduced rate of ten per cent. From 23 June, 1972 until its termination on 31 March, 1974 West Coast investment allowance was granted at a rate of thirty per cent.

As the nature of the general investment allowance is similar to that of West Coast investment allowance, both allowances will be referred to as investment allowance in the remainder of this chapter.

Deductions for investment allowance are granted in the first year in which qualifying assets are used. Ordinary and special depreciation may be claimed in addition to investment allowance and the amount of the allowance is not deducted from the gross amount at which the qualifying assets are stated for taxation purposes. There are no circumstances in which investment allowance is later recovered by the Inland Revenue

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<sup>7</sup>loc.cit.

<sup>8</sup>An outline of this scheme is given in Chapter II.

<sup>9</sup>Land and Income Tax Amendment Act (No.2) 1963, s.13.

<sup>10</sup>Land and Income Tax Amendment Act 1964, s.33.

Department.

METHODS OF ACCOUNTING FOR INVESTMENT ALLOWANCE<sup>11</sup>

In 1966 Stamp prepared a Tentative Statement on Accounting Practice for the Board of Research and Publications of the New Zealand Society of Accountants which discussed the accounting treatment of investment allowance.<sup>12</sup> After briefly summarising the features of investment allowance, Stamp wrote :

"The purpose of the investment allowance is manifestly to encourage investment in certain types of asset by making such investment cheaper. It can therefore be argued that the amount of the resultant tax saving should be credited to the cost of the asset acquired; in effect this procedure would result in the benefit being spread over the life of the asset. It is recognised that there are also arguments in favour of crediting the saving to income in the year in which the allowance is claimed, although to do so might appear to imply that profits can be earned merely by the purchase of a fixed asset.

Accordingly it is considered that it is more reasonable to allocate the benefit over the estimated useful life of the asset acquired. It is therefore recommended that the tax saving be credited to the cost of the asset whose acquisition gives rise to the investment allowance.

In all cases where the amount of the investment allowance in any year is material, the notes to the financial statements should disclose the accounting treatment adopted and the amounts involved."<sup>13</sup>

In 1971 the Board of Research and Publications authorised

<sup>11</sup> Recommendations by four professional accounting bodies on the treatment of cash grants and investment credits are summarised in Appendix H. Special emphasis is given to recommendations on accounting for investment credit (United States of America) as these appear to have influenced the Tentative Statement on Accounting Practice prepared for the Board of Research and Publications of the New Zealand Society of Accountants.

<sup>12</sup> Edward Stamp, "Allocation of Income Taxes to Accounting Periods : Tentative Statement on Accounting Practice", The Accountants' Journal, 45(1966), 93-5.

<sup>13</sup> ibid., 95.

the publication of a Research Bulletin with a view to revising the 1966 Statement referred to above.<sup>14</sup> On the question of the accounting treatment of investment allowance, the Bulletin followed the approach adopted by Stamp.<sup>15</sup>

An important point which was overlooked in the 1966 Statement was the effect of the recommended treatment of investment allowance on depreciation claims. That Statement suggested that the net tax saving arising from claiming investment allowance be deducted from the cost of qualifying assets. By charging depreciation on the cost of qualifying assets net of the tax saving, the allowance was allocated over the lives of the relevant assets. Prior to the 1968-69 income year, it was necessary to charge ordinary depreciation in order to minimise taxation.<sup>16</sup> A company which charged depreciation at ordinary tax rates of depreciation was unable to adopt the recommended procedure without increasing the rate of depreciation or forgoing depreciation claims.. Although most companies charged and claimed ordinary and special depreciation prior to 1968, Stamp had earlier in his Tentative Statement urged companies to claim special depreciation without charging a similar amount.<sup>17</sup>

In order to determine the correct method of accounting for investment allowance in the 1968-69 income year and in subsequent years, it is necessary to consider the nature of

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<sup>14</sup> D.G. Trow, Accounting for Income Taxes, Research Bulletin, New Zealand Society of Accountants, Wellington, 1971.

<sup>15</sup> ibid., 9-10.

<sup>16</sup> See Chapter II.

<sup>17</sup> Edward Stamp, op.cit., 94-5.

investment allowance.<sup>18</sup> First, investment allowance is a tax gift which, once granted, is not repayable. Secondly, the allowance does not alter the timing or amount of ordinary and special depreciation claimed. Thirdly, investment allowance is granted in the first year in which the relevant asset is used. The nature of investment allowance would suggest that it is a selective reduction in taxation expense in the year in which qualifying assets are first used. Expressed in a different way, we may say that investment allowance reduces the disincentive effect of taxation on the acquisition and use of certain assets. This view of the nature of investment allowance suggests that the tax saving arising from claiming that allowance should be reflected in a lower tax provision than would otherwise be required in the year in which the relevant assets are first used.

It has also been argued that the nature of investment allowance suggests that the net tax saving should be deducted from the cost of the asset.<sup>19</sup> For example, Baylis has argued that :

"The fact that the incentive is made by reducing an expense item, that is, taxation, does not alter its capital nature.... The investment allowance is granted because of the acquisition of a capital asset. In effect, the Government pays part of the purchase price. The real cost to the enterprise is the amount paid less the taxation deduction received, and the asset should be recorded accordingly in the books of account."<sup>20</sup>

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<sup>18</sup> By eliminating the period prior to the 1968-69 income year, we are able to discuss the accounting treatment of investment allowance without the constraints imposed by the Commissioner of Inland Revenue on accounting for depreciation charges and claims.

<sup>19</sup> See Edward Stamp, op.cit., 95, and D-G. Trow, op.cit., 10.

<sup>20</sup> A.W. Baylis, "The Investment Allowance: Alternative Accounting Treatments", The Accountants' Journal, 49(1971), 289.

It should be noted that investment allowance arises from first using a qualifying asset and not from its acquisition, as suggested above.<sup>21</sup> Moreover, the assertion that the Government pays part of the purchase price appears to be inconsistent with practices normally used in determining the gross amount at which assets are stated in historic cost accounting. Hendriksen states that :

"Historic cost is defined as the aggregate price paid by the firm to acquire ownership and use of a fixed asset.... It is determined by market forces, or at least by a bargained arm's length transaction...."<sup>22</sup>

If an asset is donated, or acquired in an exchange transaction at less than arm's length, it is normally recorded at estimated current market price or on the basis of some other valuation.

Berg and Mueller, who oppose the crediting of the tax saving (arising from claiming investment credit) to income tax expense in the year in which the credit is claimed, concluded that :

"For general reporting purposes cost of an asset should continue to be measured by the bargained price between buyer and seller."<sup>23</sup>

Thomas F. Keller also opposed the deduction of the tax saving from the cost of the qualifying asset :

"If the accountant considers that he is reporting the effect of business transactions as they occur

<sup>21</sup> G.J. Schmitt, "Accounting for Income Taxes", Unpublished paper, University of Waikato, 1971, 2.

<sup>22</sup> Eldon S. Hendriksen, Accounting Theory, Richard D. Irwin, Homewood, 1970, 363. Also see W.A. Paton and A.C. Littleton, An introduction to Corporate Accounting Standards, American Accounting Association, 1967, 11-13.

<sup>23</sup> Kenneth B. Berg and Fred J. Mueller, "Accounting for Investment Credits", The Accounting Review, 38(1963), 561.

on the basis of objective verifiable information then he will record the asset at its cost, that is, the cash outlay required to obtain the equipment and to place it in productive condition. The tax expense for the period, accordingly, is that which results from applying current tax rates to income earned during the period adjusting for differences of specification between the tax liability currently payable and business income." <sup>24</sup>

It has been argued that the United States' investment credit should be accounted for by creating a deferred income account.<sup>25</sup> The tax saving is then credited to revenue over the life of the qualifying asset. If this method were used for investment allowance, the gross amount at which qualifying assets are stated would not be affected by that allowance. This method is not applicable, as income is not deferred in the case of investment allowance. Once granted, the allowance is certain and is not recoverable.

It is submitted that accounting theory supports the view that the net tax saving arising from claiming investment allowance should be reflected in the taxation provision in the year in which that allowance is claimed. This conclusion has been arrived at without considering the effect of accounting treatment on the extent to which investment allowance might affect the timing and amount of capital expenditure undertaken, or its effect on the price of goods and services. These matters of substance are discussed in Chapter IX.

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<sup>24</sup> Thomas F. Keller, "The Investment Tax Credit and the Annual Tax Charge" in Thomas F. Keller and Stephen A. Zeff (eds.), Financial Accounting Theory II : Issues and Controversies, McGraw-Hill, New York, 1969, 442. A difference of specification was defined by the writer as "one in which tax law prescribes a treatment for tax purposes which is entirely different from that usually followed in the determination of business income."

<sup>25</sup> Kenneth B. Berg and Fred J. Mueller, op.cit., 561.

THE METHOD OF ACCOUNTING FOR INVESTMENT ALLOWANCE  
IN THE ANNUAL REPORTS OF CERTAIN COMPANIES

The annual reports of the one hundred and eleven sample companies were studied to determine the method used to account for investment allowance in the financial years which ended during the 1971, 1972 and 1973 calendar years.<sup>26</sup> Table VII-1 summarises the results of this analysis. It can be seen that in 1971 26.9 per cent of the one hundred and eight companies disclosed that the tax saving from investment allowance was reflected in a lower tax provision than would otherwise be the case in the year in which the relevant assets were first used. In 1972 and 1973 35.4 per cent and 48.1 per cent respectively disclosed that that method was used in accounting for investment allowance. More than half of the annual reports did not disclose the method used in accounting for investment allowance. A small number of these (not more than four companies) may not have qualified for investment allowance prior to its extension in 1972. In addition, some companies may have received an immaterial tax saving in 1971-73. Despite this, it is believed that most of the companies which did not disclose any comments on investment allowance did, in fact, claim that allowance.<sup>27</sup>

Of the companies which disclosed the method used in accounting for investment allowance, about half stated the

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<sup>26</sup>The methods used in selecting the sample and the sources of data used are described in Appendix C.

<sup>27</sup>The 1974 annual report of one of the sample companies reported that "... in view of the fact that the Investment Allowance as provided under existing taxation legislation is subject to possible reduction or cancellation at any time and as it is considered that the benefit has a direct relationship to the use of assets rather than their acquisition it has been decided to change the accounting

TABLE VII-1  
METHOD OF ACCOUNTING FOR INVESTMENT ALLOWANCE<sup>1</sup>

	1971		1972		1973	
	N <sup>2</sup>	%	N	%	N	%
(1) Investment allowance claimed for taxation purposes without making any adjustments to the books of account, other than to the tax provision:						
(a) Amount claimed disclosed	14	13.0	13	11.8	24	22.2
(b) Amount claimed not disclosed	15	13.9	26	23.6	28	25.9
Sub-total	29	26.9	39	35.4	52	48.1
(2) Method of accounting for investment allowance unknown or allowance was not applicable	79	73.1	71	64.6	56	51.9
Total	108	100.0	110	100.0	108	100.0

<sup>1</sup>The analysis presented is based on an examination of the annual reports of the relevant companies.

<sup>2</sup>"N" denotes number.

amount claimed and/or the tax saving in 1971 and 1973. In 1972 one-third disclosed the amount of investment allowance claimed. This probably reflects the fact that the amount claimed by many companies in 1971 and 1973 was materially different from that claimed in 1970 and 1972 respectively. Few companies benefited from significant claims in 1970, as the allowance was introduced with effect from 26 June of that year. Similarly, the 1972 increase in the rate of investment allowance did not have an important effect on the amount claimed until 1973.

The companies which were included in the above study were requested to participate in a questionnaire survey.<sup>28</sup> Question twenty-three requested participants to indicate the method used to account for investment allowance.<sup>29</sup> Forty-four of the forty-six companies which answered that question answered that they claimed investment allowance for taxation purposes without making any adjustment to the books of

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treatment of the tax credit. For the year ended 31 March, 1974 and subsequent years, the credit will be spread over four years, thus resulting in a deferral of three-quarters of the benefit in equal instalments to the next three years." In the balance sheet the amount was disclosed as a special item after total capital and reserves and before minority interests. If it were accepted that investment allowance is related to the use of qualifying assets as suggested above, it would appear that the tax saving should be allocated over the period of the life of the relevant assets. As the company charges ordinary and special depreciation, this would appear to be greater than four years.

<sup>28</sup> The methods used in conducting the questionnaire survey are described in Appendix O.

<sup>29</sup> This question was not included in the brief questionnaire as answers given to the original questionnaire clearly indicated the method of accounting for investment allowance used by most companies.

account, other than to the taxation provision.<sup>30</sup> One other company answered that the investment allowance increased its tax loss carried forward and a further company answered that the allowance was not applicable. These results confirm the view that the vast majority of listed manufacturing companies record investment allowance as a reduction in taxes in the year in which qualifying assets are first used.<sup>31</sup>

The Views on Accounting for Investment Allowance  
of Certain Chartered Accountants in Public Practice

The questionnaire sent to certain chartered accountants included a question on the treatment of investment allowance in the annual reports of listed companies (see question seventeen).<sup>32</sup> In question 17(a) participants were requested to answer whether in their firm's opinion listed companies should generally account for investment allowance by a particular method. Four chartered accountants answered "Yes" to this question and one answered "No". Three of the participants which answered "Yes" to question 17(a) stated in question 17(b) that listed companies should generally record investment allowance as a reduction in the provision for taxation in the year which qualifying assets are first used. The firm which answered "No" to question 17(a) indicated that it preferred a similar treatment of investment allowance. The fifth firm answered that the tax saving from investment

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<sup>30</sup> The tabulated answers to question twenty-three are given in Exhibit 0-6.

<sup>31</sup> A.W. Baylis (op.cit., 288) reported that fifty-five listed companies which participated in a questionnaire survey in 1969 used this method.

<sup>32</sup> The methods used in conducting this questionnaire survey are described in Appendix P. The tabulated answers are presented in Exhibit P-3.

allowance should be deducted from the cost of qualifying assets.<sup>33</sup> This was the only firm to support the views expressed in the Research Bulletin entitled Accounting for Income Taxes.<sup>34</sup>

Part (c) of question seventeen requested participants to give reasons supporting their answers to part (b). Quotations A to C are from those firms which answered "Yes" to question 17(a) and were of the opinion that the tax saving should be reflected in the tax provision in the year in which investment allowance is claimed. D was given by the firm which answered "No" to question 17(a) but which prefers the same method as that given by A to C. Quotation E is from the firm which supports the view that listed companies should deduct the net tax saving from the cost of qualifying assets.

- A "This is a "once off" tax benefit arising from the company's activities and the Government's policy for that accounting period to encourage investment in new plant and should be reflected in [the taxation provision]."
- B "It is a taxation incentive."
- C "Investment allowance is in our opinion a taxation concession and as such should be treated as part of the taxation provision."
- D "The investment allowance is merely a tax deduction."
- E "From a fiscal policy viewpoint, the investment allowance is generally used to stimulate investment by reducing the cost of the investment. By crediting to the cost of

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<sup>33</sup> This firm also indicated that the following options were acceptable :

- (i) treat the tax saving as an exceptional item in the profit and loss account, or
- (ii) credit the tax saving as a separate item to retained earnings.

<sup>34</sup> D.G. Trow, op.cit., 10.

the asset the benefit is brought to account over the life of the asset ... [If the amount is material, the] tax benefit should never be left in current income."

Although the five firms have different opinions, most of the participants appear to support their recommended treatment by reference to the nature of investment allowance.

### CONCLUSION

Investment allowance is a tax gift which, once granted, is not repayable. It is allowed on certain assets in the first year in which the qualifying assets are used and is in addition to ordinary and special depreciation claims. It is submitted that accounting theory supports the view that the net tax saving arising from claiming the allowance should be reflected in the taxation provision in the year in which the qualifying assets are first used. This method contrasts with that recommended in a Tentative Statement on Accounting Practice. The writer of the statement was of the opinion that the net tax saving should be deducted from the cost of qualifying assets and allocated to revenue over the life of the relevant assets.

All of the sample companies which disclosed their method of accounting for investment allowance in 1971, 1972 and 1973, and the forty-five companies which answered question twenty-three of the questionnaire and qualified for investment allowance recorded the tax saving arising from claiming the allowance as a reduction in income tax provision (or an increase in the tax loss carried forward) in the year in which investment allowance was claimed. Four of the five chartered accountants which participated in the survey

supported this method of accounting for investment allowance.

Although investment allowance is to be replaced on 1 April, 1975 by the new single first year depreciation system, it may at some future date be re-introduced. Should this occur, the question of accounting for investment allowance will again be the subject of debate and, meantime anyway, plant and machinery is stated at a "correct" cost or about it, depending on your viewpoint.

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P A R T T W OSUMMARY AND CONCLUSIONS

An analysis of the annual reports of one hundred and eleven public companies disclosed that more than ninety per cent of the sample recorded plant and machinery at historic cost. In contrast, thirteen per cent of the sample revalued buildings prior to 1962 and forty-five per cent revalued that class of fixed asset between 1962 and 1973 (inclusive). Buildings acquired subsequent to these revaluations were recorded at historic cost. Three companies annually revalue plant, machinery and buildings.

Prior to 1968, all but two of the sample companies charged depreciation on plant and machinery on the diminishing value method. This finding is not surprising in view of the Commissioner of Inland Revenue's ruling that, from the 1963-64 income year until the 1968-69 year, an amount equivalent to ordinary depreciation be charged in order to qualify for the maximum ordinary depreciation claim. The 1963 ruling that special depreciation could be claimed without charging a similar amount had little effect on the depreciation practices of the sample companies. Since the 1968 ruling (that claims for ordinary depreciation in addition to special depreciation would be granted without requiring companies to charge a similar amount to that claimed) there has been a significant growth in use of the straight-line method. In 1973, eighteen per cent of the sample computed their depreciation charge on the straight-line method.

In each year from 1962 to 1973 (inclusive) more than fifty per cent of the sample charged ordinary depreciation or ordinary plus special depreciation.

Although information on the methods used by the companies to compute their depreciation charges on buildings was infrequently disclosed, it appears that all of the companies studied charged depreciation on that class of fixed asset on the straight-line method.

The case for income tax allocation is based on the view that income tax is an expense and that it is a tax on accounting income after adjusting for permanent differences between accounting and taxable income. If income tax is regarded as a tax on taxable income, the question of income tax allocation depends on whether a deferred tax credit is a liability and whether a deferred tax debit is an asset. Definitions may be quoted to support both views.

There has been a significant growth in the number of companies which charge less depreciation than that claimed and provide for deferred tax. Most companies disclosed accumulated deferred tax credit as a separate item or as a long term liability in their balance sheets. None of the companies studied which generally charge more depreciation than that claimed provided a deferred tax debit.

Investment allowance is a tax gift which, once granted, is not repayable. It does not affect the amount or timing of depreciation claims. It is submitted that accounting theory supports the view that the tax saving arising from claiming the allowance should be reflected in

a lower taxation provision than would otherwise be required in the year in which the allowance is claimed. All of the sample companies which disclosed their method of accounting for investment allowance recorded the tax saving as a reduction in provision for taxation (or an increase in tax loss carried forward) in the year in which the allowance was claimed.

The forty-five companies which also participated in the questionnaire survey answered that the investment allowance was accounted for by the above method.

P A R T   T H R E ERATES OF DEPRECIATION FOR TAXATION PURPOSES

In Part Two we found that more than fifty per cent of the companies studied charged depreciation computed at ordinary or ordinary plus special rates of depreciation in each year from 1962 to 1973. Pressure groups have often asserted that rates of depreciation permitted for taxation purposes are inadequate. Given these two factors, it was desirable to determine the opinions on the adequacy of rates of depreciation granted for taxation purposes of participants in the questionnaire survey. The results of this part of the investigation are presented in Chapter VIII.

CHAPTER VIII  
THE ADEQUACY OF RATES OF DEPRECIATION

ABSTRACT

The adequacy of taxation rates of depreciation for the purposes of providing for the annual loss caused by fair wear and tear, and for obsolescence, other than that which can be made good by repairs is investigated in this chapter.

Ignoring the question of replacing plant and machinery when prices are rising, participants were of the view that ordinary tax rates of depreciation plus special depreciation on plant and machinery provide at least an adequate allowance for the annual loss caused by fair wear and tear, and for obsolescence, other than that which can be made good by repairs.

No conclusion could be derived from the data on the adequacy of ordinary taxation rates of depreciation on buildings.

Participants were of the opinion that ordinary tax rates of depreciation should allow for increases in the cost of replacing plant and machinery as a result of inflation.

INTRODUCTION

Section 113 of the Land and Income Tax Act 1954 authorises a deduction for depreciation caused (in the case of plant and machinery) by fair wear and tear, and by obsolescence, other than that which can be made good by repairs. In this chapter we investigate whether the fifty-five participants in the questionnaire survey were of the view that the current rates on their plant and machinery provide at least an adequate allowance<sup>1</sup> for this purpose. Depreciation allowances on buildings, other than temporary buildings, are intended to provide for the loss caused by fair wear and tear only. The adequacy of ordinary tax rates of

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<sup>1</sup>The category "at least an adequate allowance" consists of those which answered that the rates were adequate or more than adequate.

depreciation on buildings for this purpose is also examined.

Although special depreciation was originally intended to compensate for inflation rather than provide for the annual loss covered by ordinary depreciation allowances, where ordinary rates were found to be inadequate, participants were requested to answer whether ordinary plus special tax rates of depreciation provide an adequate allowance.

Before discussing the answers given to the relevant questions, some official opinions on the adequacy of the tax rates of depreciation are presented.

Despite considerable comment on the adequacy of taxation rates of depreciation by pressure group spokesmen and others, there is little published research on this subject. The Taxation Review Committee reported in 1967 that taxpayers appeared to be generally satisfied with the schedule of ordinary tax rates of depreciation on plant and machinery.<sup>2</sup> The committee's own opinion was that the rates were generally adequate.<sup>3</sup> An undisclosed number of submissions was received advocating an increase in ordinary tax rates of depreciation on buildings. The committee concluded, after noting that buildings generally appreciate in value, that the schedule rates of depreciation on buildings were also adequate.<sup>4</sup>

The above view was supported by the Manufacturing Committee of the National Development Conference. This committee reported that "the existing scale of depreciation

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<sup>2</sup>Taxation Review Committee, "Taxation in New Zealand", Appendix to the Journals of the House of Representatives, 1967, 1, B-18, 244, par.609 (Chairman: L.N. Ross).

<sup>3</sup>loc.cit.

<sup>4</sup>ibid., 245, par.610.

allowances is reasonably adequate".<sup>5</sup>

The Inland Revenue Department maintains that the rates of ordinary depreciation tend to be generous. This view is supported by the following;<sup>6</sup>

- (1) the annual amount of depreciation claims recovered on the disposal of assets exceeds the amount claimed for a loss on the sale or disposal of depreciated plant and machinery,<sup>7</sup>
- (2) the average useful life of assets for taxation purposes is less than that given by manufacturers of capital equipment,
- (3) the number of taxpayers who charge less depreciation than that claimed exceeds the number who do the converse.

To examine the adequacy of tax rates of depreciation for the purpose of providing for the annual loss caused by fair wear and tear, and for obsolescence, a number of questions were included in the questionnaire sent to certain companies and chartered accountants in public practice.<sup>8</sup> These are discussed below.

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<sup>5</sup>National Development Conference, Manufacturing Committee, Report of the Manufacturing Committee to the Plenary Session of the National Development Conference, Government Printer, Wellington, 1969, 28, par.72 (Chairman: M.J. Moriarty).

<sup>6</sup>The following list is based on information supplied by an officer of the Department to the writer in the course of an interview held in March, 1972.

<sup>7</sup>If ordinary depreciation were recovered on the sale of buildings, the officer interviewed believed that depreciation recovered would exceed claims for a loss on the sale of buildings.

<sup>8</sup>A description of methods used in conducting the questionnaire survey of public companies is given in Appendix O. A similar description relating to the survey of chartered accountants in public practice is given in Appendix P.

THE RESULTS

Plant and Machinery

To determine whether participants in the questionnaire survey of public companies regarded ordinary or ordinary plus special tax rates of depreciation on plant and machinery as inadequate or at least adequate for the purpose of providing for fair wear and tear, and for obsolescence, questions six and seven were included in the questionnaire.

From the tabulated answers to question 6(a), it can be seen that thirty-six of the fifty-five participants (65.4 per cent) indicated that ordinary tax rates of depreciation on plant and machinery provide at least an adequate allowance for fair wear and tear other than that which can be made good by repairs. Obsolescence and the replacement of such assets when prices are rising were ignored in the above question.<sup>9</sup> Nineteen participants (34.6 per cent) were of the opposite view. These results are statistically significant ( $p < 0.05$ ).

The answers given to question 6(a) are tabulated by the size and growth of participants in Tables VIII-1 & VIII-2 respectively. Although a higher percentage of large companies answered that ordinary tax rates of depreciation provide an inadequate allowance compared with the percentage of smaller companies which gave a similar answer, this difference is not statistically significant.<sup>10</sup> Similarly, the answers given to question 6(a) are independent of the growth of participants.<sup>11</sup>

<sup>9</sup>These factors were included in other questions which are discussed below.

<sup>10</sup> $\chi^2$  (corrected) equals 1.19, df. equals one.

<sup>11</sup> $\chi^2$  (corrected) equals 0.01, df. equals one.

TABLE VIII-1  
ADEQUACY OF ORDINARY TAX RATES OF DEPRECIATION FOR  
PURPOSE OF PROVIDING FOR WEAR AND TEAR: CLASSIFIED  
BY SIZE OF PARTICIPANTS

	Size of Participants		Total
	Small	Large	
Inadequate	8	11	19
At Least Adequate	21	13	34
Total	29	24	53

Not analysed: Two companies the size of which is unknown. Both answered that ordinary tax rates of depreciation provide at least an adequate allowance for wear and tear.

TABLE VIII-2  
ADEQUACY OF ORDINARY TAX RATES OF DEPRECIATION FOR  
PURPOSE OF PROVIDING FOR WEAR AND TEAR: CLASSIFIED  
BY GROWTH OF PARTICIPANTS

	Growth of Participants		Total
	Slow	Fast	
Inadequate	11	8	19
At Least Adequate	16	15	31
Total	27	23	50

Not analysed: Two companies the growth of which is unknown, and three firms for which the measure of growth was not applicable. All five companies answered that ordinary tax rates of depreciation provide at least an adequate allowance for wear and tear.

From the tabulated answers to question 7(a) it can be seen that 43.6 per cent of the participants (twenty-four) answered that ordinary tax rates of depreciation on plant and machinery provide an adequate allowance for fair wear and tear, and for obsolescence other than that which can be made good by repairs. In contrast, thirty-one companies (56.4 per cent) were of the view that ordinary tax rates were inadequate for this purpose. As this result is not statistically significant ( $p > 0.05$ ) no conclusion can be drawn on the adequacy of ordinary tax rates of depreciation for the purpose of providing for fair wear and tear, and for obsolescence.

The answers given to question 7(a) were not related to the size or growth of participants (see Tables VIII-3 & VIII-4).<sup>12</sup>

TABLE VIII-3  
ADEQUACY OF ORDINARY TAX RATES OF DEPRECIATION FOR  
PURPOSE OF PROVIDING FOR WEAR, TEAR AND OBSOLESCENCE:  
CLASSIFIED BY SIZE OF PARTICIPANTS

	Size of Participants		Total
	Small	Large	
Inadequate	14	9	23
Adequate	15	15	30
Total	29	24	53

Not analysed: Two companies the size of which is unknown. One of these answered that ordinary tax rates of depreciation were adequate and the other gave the alternative answer.

<sup>12</sup>For size  $\chi^2$  (corrected) equals 0.25 and for growth  $\chi^2$  (corrected) equals 2.44. In both cases df. equals one.

TABLE VIII-4  
ADEQUACY OF ORDINARY TAX RATES OF DEPRECIATION FOR  
PURPOSE OF PROVIDING FOR WEAR, TEAR AND OBSOLESCENCE:  
CLASSIFIED BY GROWTH OF PARTICIPANTS

	Growth of Participants		Total
	Slow	Fast	
Inadequate	14	6	20
Adequate	13	17	30
Total	27	23	50

Not analysed: Two companies the growth of which is unknown and three firms for which the measure of growth was not applicable. Four of these companies answered that ordinary tax rates of depreciation were adequate and one answered that they were inadequate.

By combining the answers given to questions 7(a) and (b) it is possible to determine whether ordinary and special tax rates of depreciation provide an inadequate or at least an adequate allowance for the purpose of providing for fair wear and tear, and for obsolescence of plant and machinery. Forty companies (72.7 per cent) answered that ordinary plus special depreciation provide at least an adequate allowance. The remaining fifteen firms (27.3 per cent) stated that the rates under examination were inadequate. This result is highly significant ( $p < 0.001$ ). It may therefore be concluded that, ignoring the question of replacing plant and machinery when prices are rising, ordinary tax rates of depreciation plus special depreciation on plant and machinery provide at least an adequate allowance for the annual loss caused by fair wear and tear, and for obsolescence, other than that which can be

made good by repairs.

The above answers are tabulated by the size and growth of participants in Tables VIII-5 & VIII-6 respectively.

TABLE VIII-5

ADEQUACY OF ORDINARY TAX RATES OF DEPRECIATION PLUS SPECIAL DEPRECIATION FOR THE PURPOSE OF PROVIDING FOR WEAR, TEAR AND OBSOLESCENCE: CLASSIFIED BY SIZE OF PARTICIPANTS

	Size of Participants		Total
	Small	Large	
Inadequate	8	6	14
At Least Adequate	21	18	39
Total	29	24	53

Not analysed: Two companies the size of which is unknown.

TABLE VIII-6

ADEQUACY OF ORDINARY TAX RATES OF DEPRECIATION PLUS SPECIAL DEPRECIATION FOR THE PURPOSE OF PROVIDING FOR WEAR, TEAR AND OBSOLESCENCE: CLASSIFIED BY GROWTH OF PARTICIPANTS

	Growth of Participants		Total
	Slow	Fast	
Inadequate	7	7	14
At Least Adequate	20	16	36
Total	27	23	50

Not analysed: Two companies the growth of which is unknown, and three firms for which the measure of growth was not applicable. Four firms answered that ordinary plus special depreciation was at least adequate and one answered that these rates were inadequate.

The results disclosed by these tables reveals that the answers given on the adequacy of ordinary plus special depreciation for the purpose of providing for wear, tear and obsolescence were independent of the size and growth of participants.<sup>13</sup>

As chartered accountants in public practice are required to express an opinion on the truth and fairness of the profit and loss account and to report whether the information required to be disclosed by the Companies Act is disclosed in the manner so required, one might expect such persons to form an opinion on the adequacy of tax rates of depreciation.<sup>14</sup> The questionnaire, which was completed by five chartered accountants, included questions similar to questions six and seven above.<sup>15</sup> These chartered accountants were requested to answer whether in "their firm's opinion" the relevant rates were generally inadequate or at least adequate for the various purposes discussed above.<sup>16</sup>

Two chartered accountants answered that in their firm's opinion ordinary tax rates of depreciation on plant and machinery provide an inadequate allowance for fair wear and tear. Three were of the opinion that ordinary rates were generally adequate for this purpose. All five chartered

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<sup>13</sup>For size  $X^2$  (corrected) equals 0.01 and for growth  $X^2$  (corrected) equals zero. In both cases df. equals one.

<sup>14</sup>The requirements of the Companies Act are summarised in Chapter III.

<sup>15</sup>See questions one and three of the chartered accountants' questionnaire, a copy of which is given as Exhibit P-3.

<sup>16</sup>Because of the small number of chartered accountants participating in this survey, care should be exercised in drawing any conclusions from the results presented. Where all five participants are of the same opinion, the result is statistically significant ( $p < 0.05$ ).

accountants answered that ordinary tax rates of depreciation did not generally provide an adequate allowance for fair wear and tear, and for obsolescence of plant and machinery. Four of these answered that ordinary plus special depreciation generally provide an adequate allowance for obsolescence in addition to wear and tear of plant and machinery. Thus, most of the chartered accountants surveyed supported the conclusion derived from the answers given by companies to questions 7(a) and (b).

### Buildings

Question ten sought to determine whether participants were of the view that current ordinary tax rates of depreciation on buildings provide an adequate allowance for the annual loss caused by fair wear and tear, other than that which can be made good by repairs. As the legislation does not authorise an allowance for the obsolescence of buildings, the companies were not questioned on the adequacy of tax rates for this purpose.<sup>17</sup>

From the tabulated answers, it can be seen that thirty-three companies (61.1 per cent) stated that, ignoring the question of replacing or selling buildings when prices are rising, ordinary tax rates of depreciation provide at least an adequate allowance for the annual loss caused by fair wear and tear. Twenty-one participants (38.9 per cent) were of the view that the rates were inadequate. This result is not statistically significant ( $p > 0.05$ ) and thus the null hypothesis that there is no significant difference in the

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<sup>17</sup> Land and Income Tax Act 1954, s.113.

answers given cannot be rejected. For this reason, no conclusion can be drawn on the adequacy of taxation rates of depreciation on buildings.<sup>18</sup>

The answers given to question ten are classified by size of participants in Table VIII-7 and by growth of participants in Table VIII-8. These tables reveal that the answers given to question ten are unrelated to the variables considered.<sup>19</sup>

TABLE VIII-7  
ADEQUACY OF ORDINARY TAX RATES OF DEPRECIATION ON BUILDINGS  
FOR THE PURPOSE OF PROVIDING FOR WEAR AND TEAR: CLASSIFIED  
BY SIZE OF PARTICIPANTS

	Size of Participants		Total
	Small	Large	
Inadequate	8	12	20
At Least Adequate	20	12	32
Total	28	24	52

Not analysed: One small company which did not answer question ten and two companies, the size of which is unknown. One of the latter answered that ordinary tax rates of depreciation were adequate. The other company gave the alternative answer.

<sup>18</sup> These differences are significant for  $\alpha$  equal 0.10 (approximately).

<sup>19</sup> For size  $\chi^2$  (corrected) equals 1.72 and for growth  $\chi^2$  (corrected) equals 0.96. In both cases df. equals one.

TABLE VIII-8

ADEQUACY OF ORDINARY TAX RATES OF DEPRECIATION ON BUILDINGS  
FOR THE PURPOSE OF PROVIDING FOR WEAR AND TEAR: CLASSIFIED  
BY GROWTH OF PARTICIPANTS

	Growth of Participants		Total
	Slow	Fast	
Inadequate	11	13	24
At Least Adequate	16	9	25
Total	27	22	49

Not analysed: One fast growth company which did not answer question ten and five firms for which the measure of growth was not applicable. One of the latter answered that tax rates of depreciation were inadequate and four answered that they were at least adequate.

The five chartered accountants (referred to above) were also questioned on the adequacy of tax rates of depreciation on buildings. Four answered that ordinary tax rates of depreciation generally provide an inadequate allowance for fair wear and tear. One answered that the rates were generally adequate.

#### Inflation

In questions six, seven and ten (and the equivalent questions in the questionnaire completed by chartered accountants), participants were requested to "ignore the question of replacing plant and machinery or buildings when prices are rising". This enabled opinions about the adequacy of depreciation rates to be determined for the various purposes given in the relevant legislation.

Question eight requested those companies which completed

the original questionnaire to answer whether ordinary rates of depreciation for taxation purposes should allow for increases resulting from inflation in the cost of replacing plant and machinery. Seventy-five per cent of the forty-four participants (thirty-three) answered that allowance should be made for inflation. The remaining eleven companies answered that allowance should not be made. This result is highly significant ( $p < 0.001$ ).<sup>20</sup> Two companies did not answer this question as the subject had never been discussed by their companies. The answers given by companies to question eight are not surprising in view of the rate of inflation in the recent past and as an additional allowance for inflation would appear to reduce the effective rate of company tax.<sup>21</sup>

In question four two chartered accountants answered that tax rates of ordinary depreciation should generally allow for increases in the cost of replacing plant and machinery as a result of inflation. Three chartered accountants were of the opposite opinion.

### CONCLUSION

From the fifty-five completed questionnaires it is concluded that participants are of the opinion that :

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<sup>20</sup> Although most of the participants in the questionnaire survey were of the opinion that ordinary tax rates of depreciation should allow for increases resulting from inflation in the cost of replacing plant and machinery, few of the one hundred and eleven companies studied in Chapter V made a similar allowance in respect of depreciation charges. More than ninety per cent of the companies record plant and machinery at historic cost and nine or less companies charged depreciation in excess of ordinary and special depreciation in each year from 1962 to 1973.

<sup>21</sup> Should Government increase the rate of company tax to compensate for revenue forgone, some companies might be adversely affected.

- (1) Ignoring the question of the replacement of plant and machinery when prices are rising
  - (a) ordinary tax rates of depreciation on plant and machinery provide at least an adequate allowance for the annual loss caused by fair wear and tear, other than that which can be made good by repairs, and
  - (b) ordinary tax rates of depreciation plus special depreciation on plant and machinery provide at least an adequate allowance for the annual loss caused by fair wear and tear and by obsolescence, other than that which can be made good by repairs.
- (2) Ordinary tax rates of depreciation should allow for increases in the cost of replacing plant and machinery as a result of inflation.

No conclusions could be drawn on the adequacy of ordinary tax rates of depreciation on buildings for the purpose of providing for the annual loss caused by fair wear and tear.

The answers given by participants on the adequacy of tax rates of depreciation were not related to the size or growth of participants.

The above conclusions are derived from the answers given by participants in a questionnaire survey. As these companies may differ in some significant way from companies which were not surveyed, the results apply to participants only. Furthermore, no allowance has been made for bias in the answers given.

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P A R T   F O U R

THE EFFICACY OF SPECIAL DEPRECIATION  
AND INVESTMENT ALLOWANCES

In the previous chapters the accounting treatment of depreciation (including special depreciation) and investment allowance has been examined and opinions on the adequacy of rates of depreciation granted for taxation purposes have been reported. In the final part of this investigation the efficacy of special depreciation and investment allowances is studied.

In Chapter IX the theoretical effects of special depreciation and investment allowances are discussed. This is followed by a review of research undertaken in New Zealand and overseas with a view to forming an opinion on the actual effects of these or similar allowances (Chapter X). Chapters XI to XIV examine empirically a number of aspects relating to the theoretical effects of special depreciation and investment allowances.

The effect of these allowances on the timing and amount of capital expenditure project approvals is investigated in Chapters XI and XII respectively. The relationship between the book value (accumulated cost net of accumulated depreciation charge) of plant and machinery and the decision to scrap or sell significant items of such assets is investigated in Chapter XIII. The final chapter of Part Four discusses depreciation and pricing (Chapter XIV).

CHAPTER IX  
SPECIAL DEPRECIATION AND INVESTMENT  
ALLOWANCES AS INCENTIVES

ABSTRACT

Special depreciation and investment allowances are intended to influence the timing, amount and nature of capital expenditure undertaken by firms. Given realistic assumptions and values for relevant variables, special depreciation allowance increases the net present value of capital expenditure proposals by between 1.7 and 4.5 per cent of the cost of the qualifying asset. A ten per cent investment allowance increases the net present value of capital expenditure proposals by more than four per cent of the cost of the qualifying asset.

As the discount rate increases, the benefit from special depreciation allowance increases until a maximum is reached at some high discount rate. The benefit from the investment allowance decreases as the discount rate increases.

The benefit from special depreciation allowance decreases as the ordinary tax rate of depreciation increases. Special depreciation and investment allowances encourage the accumulation of qualifying assets rather than their efficient use.

Special depreciation and investment allowances discriminate against new firms and those firms undertaking relatively major expansions.

The benefit from special depreciation and investment allowances may be shifted by price and output changes and by changes in the cost of factors of production.

A study of a firm's stock of qualifying assets revealed that a static firm received an initial gain on the introduction of special depreciation allowance. A growing firm received a larger gift and a firm growing at an increasing rate received a growing gift. These gifts are recovered if special depreciation allowance is withdrawn. A firm which is decreasing its stock of qualifying assets will suffer a faster loss of cash if special depreciation allowance is claimed.

INTRODUCTION

Since World War II, the New Zealand Government has increased its effort to influence the amount, timing and nature of capital expenditure undertaken by the private sector. Two significant instruments employed to achieve this end are

special depreciation and investment allowances. In this chapter we recall the objectives of these allowances and examine their theoretical effects on the capital expenditure decisions of firms. In the next chapter some surveys conducted to test the practical effects of similar allowances are summarised. This is followed by a discussion of an empirical investigation undertaken by the writer with a view to determining the effect of special depreciation and investment allowances on the nature, timing and amount of capital undertaken by certain firms.

THE OBJECTIVES OF SPECIAL DEPRECIATION  
AND INVESTMENT ALLOWANCES

The reader will recall that in Chapter II we found that special depreciation was re-introduced in 1960 to "encourage the modernisation and expansion of plant and equipment in industry."<sup>1</sup> This objective has been reaffirmed since that time.<sup>2</sup> The investment allowance was re-introduced in 1970 to encourage "manufacturers to invest in up-to-date machinery or equipment, and to permit greater capital intensification to help remove the constraint imposed by the overall labour shortage."<sup>3</sup> When this allowance was extended in 1972, the purpose was to stimulate investment as part of a programme

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<sup>1</sup>Hon. A.H. Nordmeyer, "Financial Statement", New Zealand Parliamentary Debates, 322 (1960), 807.

<sup>2</sup>For example, see Hon. R.D. Muldoon, "Financial Statement", Appendix to the Journals of the House of Representatives, 1972, 1, B-6, 48.

<sup>3</sup>Hon. R.D. Muldoon, "Financial Statement", Appendix to the Journals of the House of Representatives, 1970, 1, B-6, 14. Also see Appendix I.

designed to increase aggregate demand.<sup>4</sup>

Special depreciation and investment allowances are intended to influence the capital expenditure decisions of firms. Their objective is to advance the timing of the acquisition of qualifying assets, to increase the amount of capital expenditure and to influence the nature of that expenditure. It is often assumed that the effect of special depreciation and investment allowances on aggregate capital expenditure can be determined by summing up their effect on firms. This approach may be subject to the fallacy of composition over time.<sup>5</sup> In the long run the level of output, subject to certain constraints, appears to be the most significant determinant of aggregate new investment.<sup>6</sup> Although we will discuss the effect of these allowances on the capital expenditure decisions of firms, the reader is advised that the conclusions given below do not apply to the aggregate effect of these allowances.

In addition to influencing the decisions of firms, special depreciation and investment allowances are intended to affect aggregate investment. Except for the extension of the investment allowance in 1972, it has not been clear whether these allowances are intended to increase the proportion of total resources allocated to investment or to increase aggregate demand via an increase in aggregate

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<sup>4</sup>Hon. R.D. Muldoon, "Financial Statement", Appendix to the Journals of the House of Representatives, 1972, 1, B-6, 44.

<sup>5</sup>Robert Eisner, "Accelerated Depreciation : Some Further Thoughts", Quarterly Journal of Economics, 69 (1955), 291.

<sup>6</sup>R.S. Deane and M.A. Lumsden, The Determinants of Quarterly Gross Capital Formation in New Zealand, Reserve Bank of New Zealand, Wellington, 1973.

investment.<sup>7</sup> As the aggregate effects of special depreciation and investment allowances are beyond the scope of this investigation, we will not attempt to assess the influence of these effects.<sup>8</sup>

### A MICROECONOMIC ANALYSIS<sup>9</sup>

#### The Characteristics of Special Depreciation And Investment Allowances

There is a considerable volume of economic literature which supports the view that a maximising firm will undertake those capital expenditure proposals which have a positive net present value.<sup>10</sup> Given that a firm has a range of proposals with varying net present values, a marginal change in net present values will alter the nature, timing and amount of

<sup>7</sup>The National Development Conference advocated that a higher proportion of resources be allocated to investment. The Conference recommended that gross capital formation as a percentage of gross national product be increased by about two per cent to twenty-seven per cent. See Report of the Proceedings of the National Development Conference : Plenary Session, Government Printer, Wellington, 1969, 13, par. 23.

<sup>8</sup>A large number of econometric studies has been undertaken in the United States of America and in the United Kingdom with the objective of determining the aggregate effect of taxation incentives similar to special depreciation and investment allowances. For example, see Gary Fromm (ed.), Tax Incentives and Capital Spending, North-Holland, Amsterdam, 1971 and the references cited therein.

<sup>9</sup>In the analysis which follows, the principles applied by writers in examining similar incentives in other countries are applied to special depreciation and investment allowances. A full list of works which have been referred to is given in the Chapter References.

<sup>10</sup>A firm would be indifferent as to the acceptance or rejection of a proposal which had a net present value equal to zero. For a discussion of the net present value method, see J. Hirshleifer, "On the Theory of Optimal Investment Decision", Journal of Political Economy, 66 (1958), 329-52; D. Teichroew, A.A. Robichek and M. Montalbano, "An Analysis of Criteria for Investment and Financing Decisions Under Certainty", Management Science, 12 (1965), 151-79.

capital expenditure undertaken. One means of increasing the net present value of capital expenditure proposals is to introduce a special depreciation allowance such that depreciation deductions may be claimed at an earlier time. The same objective may be achieved by introducing an investment allowance which permits a firm to claim a given percentage of the cost of an asset in its first year of use in addition to depreciation claims.

In order to draw some conclusions about the theoretical effect of the present twenty per cent special depreciation allowance, the change in net present value (expressed as a percentage of the cost of the relevant asset) resulting from this incentive was estimated (see Table IX-1). The procedures and assumptions used in determining these estimates are discussed in Appendix J.

The increase in net present value resulting from the introduction of a special depreciation allowance (hereafter referred to as the benefit from special depreciation allowance) ranges from just under two per cent of the cost of the asset to four and a-half per cent (given the value of variables considered). Thus the present twenty per cent allowance is equivalent to a 4.5 per cent decrease in the price of an asset purchased in the initial period, given that the discount rate is fifteen per cent, the life of the asset is twenty-five years and the ordinary tax rate of depreciation is ten per cent.<sup>11</sup> As these results are symmetrical, we can also say that the withdrawal of special depreciation in the case under discussion would be equivalent to a four and a-half per cent

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<sup>11</sup> All ordinary tax rates of depreciation referred to in this chapter are computed on the diminishing value method.

TABLE IX-1  
PRESENT VALUE OF SPECIAL DEPRECIATION ALLOWANCE  
AS A PERCENTAGE OF THE COST OF QUALIFYING ASSETS  
OR EXPENDITURE

Life of Asset in Years	Ordinary Tax Rate of Depreciation <sup>1</sup>	Discount Rate a Year Compounded Monthly			
		6%	9%	12%	15%
10	10%	2.35	3.07	3.59	3.96
	20%	1.76	2.34	2.77	3.09
15	10%	2.79	3.54	4.03	4.35
	20%	1.90	2.48	2.92	3.22
20	10%	2.99	3.72	4.18	4.45
	20%	1.93	2.52	2.94	3.24
25	10%	3.07	3.79	4.22	4.48

Assumptions:

- (a) That the asset is scrapped at the end of the life given, and that the undepreciated cost is claimed in the last year of the life of the asset,
- (b) that the maximum benefit from the allowance is received by the purchaser of the asset,
- (c) that the marginal tax rate is forty-five per cent and that it is expected to remain at that rate,
- (d) that the taxpayer has sufficient taxable income to obtain the maximum benefit from the allowance,
- (e) that one third of the allowance is claimed three months after the commencement of the year and that the remainder is claimed ten months after the start of the year.

<sup>1</sup>Ordinary tax rates of depreciation are computed on the diminishing value method.

increase in the cost of the asset. Alternatively, it may be argued that the present value of net receipts (other than capital outlays) may decrease by four and a-half per cent of the cost of the asset and the proposal will have the same net present value as that existing prior to the introduction of a twenty per cent special depreciation allowance, given that other factors remain constant.

On the introduction of special depreciation and investment allowances, the value of existing assets of a type which qualify for these allowances would tend to fall relative to qualifying assets. This would equate the after-tax return on qualifying and non-qualifying assets.<sup>12</sup>

A ten per cent investment allowance gives an increase in net present value of between 4.1 and 4.3 per cent of the cost of the asset, depending on the discount rate (see Table IX-2). For a twenty per cent allowance, the change in present value is double that resulting from a ten per cent allowance.

TABLE IX-2  
PRESENT VALUE OF INVESTMENT ALLOWANCE AS A PERCENTAGE  
OF THE COST OF QUALIFYING ASSETS OR EXPENDITURE

Rate of Investment Allowance	Discount Rate a Year Compounded Monthly			
	6%	9%	12%	15%
10%	4.33	4.25	4.17	4.10
20%	8.66	8.50	8.34	8.19
30%	12.99	12.75	12.51	12.28

Assumptions: See (b) to (e) of Table IX-1.

<sup>12</sup> Richard Bird, "Depreciation Allowances and Countercyclical Policy in the United Kingdom, 1945-60", Canadian Tax Journal, 11 (1963), 361.

For a wide range of discount rates the benefit from special depreciation allowance will increase (as a percentage of the cost of the asset) as the discount rate increases. At some relatively high discount rate a maximum is reached. Thereafter, the benefit from special depreciation allowance will decrease as the discount rate increases. The reason for this result appears to be that high discount rates reduce the present value of depreciation claims during the early life of an asset by a greater amount than of those claims which relate to the later life of the asset.<sup>13</sup> As the life of an asset increases the discount rate at which the maximum benefit from special depreciation allowance is obtained decreases. For a given discount rate, the length of the life of an asset at which the maximum benefit from special depreciation allowance is obtained decreases as the ordinary tax rate of depreciation increases.

The above points may be illustrated by again referring to Table IX-1. Given an asset with a life of ten years and a ten per cent ordinary tax rate of depreciation, the net present value of special depreciation increases by 0.72, 0.52 and 0.37 per cent of the cost of the asset as the discount rate is increased from six, to nine, to twelve and to fifteen per cent respectively. Thus, as the discount rate is increased, the net present value of special depreciation allowance increases by a decreasing amount. At some high discount rate, the maximum benefit will be obtained. Now consider the case of an asset with a life of twenty-five years and an ordinary tax rate of

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<sup>13</sup> E. Cary Brown, "The New Depreciation Policy Under the Income Tax : An Economic Analysis", National Tax Journal, 8 (1955), 92-3.

depreciation of ten per cent. As the discount rate increases by three per cent from six per cent to nine per cent, then to twelve and fifteen per cent, the net present value of special depreciation allowance increases by 0.72, 0.43 and 0.26 per cent respectively. Although a ten and twenty-five year life asset gave (in this case) the same increase in the net present value of special depreciation allowance when the discount rate was increased from six to nine per cent, the increase in net present value over the range of discount rates considered was lower for the asset with the longer life. Thus an asset with a longer life will obtain the maximum benefit at a lower discount rate than that of an asset with a shorter life. For the range of variables considered above a maximum was not reached. If the discount rate is fifteen per cent and the ordinary tax rate of depreciation is ten per cent, a maximum benefit from special depreciation is derived by an asset with a life of about thirty years.

The benefit from an investment allowance decreases as the discount rate increases. This arises as the delay between first using the qualifying asset and receiving a remission from taxation increases in importance as the discount rate is increased.

The discount rate may reflect the degree of risk associated with a given proposal. If so, relatively high risk proposals will receive a larger benefit from special depreciation allowance, unless the discount rate rises beyond the level at which the maximum benefit is received. Thus special depreciation will tend to encourage proposals with greater than average risk, but will give less encouragement to excessively risky proposals. The investment allowance will

encourage the adoption of low risk proposals.

For a given discount rate, the investment allowance will increase the net present value of all proposals by the same percentage of the cost of the qualifying asset. The greatest benefit from this allowance may be obtained by frequently turning-over qualifying assets. This may be achieved by adopting proposals with a short life. Special depreciation allowance generally discriminates in favour of proposals with a long life.

The rate of ordinary depreciation for taxation purposes is an important variable in determining the benefit of special depreciation allowance. The higher the ordinary rate of depreciation, the less are depreciation claims brought forward and hence the benefit from special depreciation allowance is lower. For example, the change in net present value resulting from special depreciation, given a discount rate of six per cent, for an asset with a life of ten years and a ten per cent ordinary tax rate of depreciation, is 2.35 per cent of the cost of the asset. If the ordinary tax rate of depreciation were increased to twenty per cent, the comparable benefit from special depreciation decreases to 1.76 per cent. In addition to reflecting the life of the asset, ordinary tax rates of depreciation reflect the conditions under which an asset is operated and the intensity with which it is used. An asset which is used continuously will, given realistic assumptions, receive less benefit from special depreciation allowance than one which is idle for two-thirds of the day or three-quarters of the week. Special depreciation allowance therefore encourages the accumulation of assets rather than their efficient use. To the extent that fixed-capital intensive

activities qualify for high ordinary tax rates of depreciation, they receive relatively less encouragement from a special depreciation allowance than do less fixed-capital intensive activities. Although the benefit from the investment allowance is not dependent on the ordinary tax rate of depreciation, this allowance does not encourage a greater intensity of use of qualifying assets.

It may be debated that the change in net present value resulting from special depreciation allowance or a ten per cent investment allowance is too small to influence capital expenditure decisions materially. In Table IX-3 the combined benefit of special depreciation and investment allowances is presented. Assets which qualify for both allowances receive a minimum benefit of 6.09 per cent given the range of variables considered. This benefit arises where an asset has a life of ten years, the discount rate is six per cent, the ordinary tax rate of depreciation is twenty per cent, and a ten per cent investment allowance and a twenty per cent special depreciation allowance are applicable. For the values of variables considered, the benefit from special depreciation and investment allowances will be at least ten per cent of the cost of the asset given that the investment allowance is deductible at a rate of not less than twenty per cent. The thirty per cent investment allowance (which was applicable from 23 June, 1972 to 31 March, 1974 in respect of certain assets used on the West Coast of the South Island) combined with a twenty per cent special depreciation allowance gave an increase in net present value of not less than 14.7 per cent of the cost of the qualifying asset.

Changes in the net present value of capital expenditure

TABLE IX-3  
PRESENT VALUE OF SPECIAL DEPRECIATION PLUS INVESTMENT ALLOWANCE AS A PERCENTAGE  
OF THE COST OF QUALIFYING ASSETS OR EXPENDITURE<sup>1</sup>

Life of Asset in Years	Discount Rate		6%			9%			12%			15%		
	Ordinary Tax Rate of Depreciation	Rate of Investment Allowance	10%	20%	30%	10%	20%	30%	10%	20%	30%	10%	20%	30%
10	10%		6.88	11.01	15.34	7.32	11.57	15.82	7.76	11.93	16.10	8.06	12.15	16.24
	20%		6.09	10.42	14.75	6.59	10.84	15.09	6.94	11.11	15.28	7.19	11.28	15.37
15	10%		7.12	11.45	15.78	7.79	12.04	16.29	8.20	12.37	16.54	8.45	12.54	16.63
	20%		6.23	10.56	14.89	6.73	10.98	15.23	7.09	11.26	15.43	7.32	11.41	15.50
20	10%		7.32	11.65	15.98	7.97	12.22	16.47	8.35	12.52	16.69	8.55	12.64	16.73
	20%		6.26	10.59	14.92	6.77	11.02	15.27	7.11	11.28	15.45	7.34	11.43	15.52
25	10%		7.40	11.73	16.06	8.04	12.29	16.54	8.39	12.56	16.73	8.58	12.67	16.76

<sup>1</sup>Assumptions are the same as those given for Tables IX-1 and IX-2.

proposals equivalent to ten per cent or more of the cost of qualifying assets must be considered material.<sup>14</sup>

The Rate of Taxation and the Benefit from Special Depreciation and Investment Allowances

The potential of special depreciation and investment allowances to influence the timing, amount and nature of capital expenditure is dependent on high rates of taxation. Permanent or temporary relief from taxation produces the benefit of these allowances. If the rate of taxation were expected to rise, taxpayers would be encouraged to defer tax claims so that larger profits now are taxed at a low rate and that smaller profits later are taxed at the increased rate. An expectation that the rate of taxation would be reduced would encourage firms to advance deductible expenditure. As taxpayers may claim maximum ordinary and special depreciation or a lesser amount, depreciation claims provide taxpayers with some flexibility in timing tax deductions. Moreover, expectations as to the future tax rate may affect the timing of the acquisition of depreciable assets.<sup>15</sup>

In Table IX-4 the increase in net present value of twenty per cent special depreciation allowance, given a tax rate of fifty per cent over that for a forty-five per cent rate is presented. For the range of variables considered, the net present value of special depreciation increases by between 0.19 per cent and a-half of one per cent of the cost of the asset. The aggregate effect of an increase in the tax rate

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<sup>14</sup> Capital expenditure proposals may also result in claims for other taxation incentives and concessions for example, increased export sales allowance.

<sup>15</sup> For an example of this point see "The John Davies Bumper Pack", The Economist, 242 (1972), 6709, 72, and "How Not to Depreciate", The Economist, 243 (1972), 6712, 68-70.

on the net present value of proposals would depend on the pattern and nature of other cash flows.

TABLE IX-4  
INCREASE IN PRESENT VALUE OF SPECIAL DEPRECIATION  
ALLOWANCE RESULTING FROM AN INCREASE IN THE  
TAXATION RATE TO FIFTY PER CENT, AS A PERCENTAGE  
OF THE COST OF QUALIFYING ASSETS OR EXPENDITURE

Life of Asset in Years	Ordinary Tax Rate of Depreciation	Discount Rate a Year Compounded Monthly			
		6%	9%	12%	15%
10	10%	0.26	0.35	0.40	0.44
	20%	0.19	0.25	0.31	0.35
15	10%	0.31	0.40	0.45	0.48
	20%	0.21	0.28	0.32	0.36
20	10%	0.33	0.42	0.46	0.50
	20%	0.22	0.28	0.33	0.36
25	10%	0.35	0.42	0.47	0.50

Assumptions: Same as those given for Table IX-1 except for rate of taxation.

A firm which qualifies for special depreciation and/or investment allowance may be unable to obtain the maximum benefit from these allowances as taxable income prior to deducting them may be insufficient. A smaller benefit may be obtained by offsetting the resulting tax loss against future income. In the case of special depreciation allowance, the entire benefit may be lost if there is insufficient taxable income in the initial periods.<sup>16</sup> This characteristic of

<sup>16</sup>Prior to the 1968-69 income year, tax losses could be carried forward and offset against taxable income earned in

incentives working through the taxation system may produce inequities between new and established firms. Moreover, an established firm may be deterred from undertaking a major proposal if this would distort income to such an extent that the projected results in the initial periods would be unacceptable to shareholders and other providers of finance. Although incentives may boost reported after-tax income and thereby lessen these difficulties, an established firm may be unable to absorb all of the incentives attaching to a major expansion. For this reason, special depreciation and investment allowances may discourage major expansion of a fixed-capital intensive nature relative to minor capital expenditure proposals. These disadvantages might be overcome by replacing special depreciation and investment allowances with a system of cash grants which would treat new and established firms alike, irrespective of their taxation position.

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the succeeding six years only. Under this rule, the entire benefit from investment allowance could have been lost, if taxable income were not sufficient in the initial years. One company which was formed to undertake a major fixed-capital intensive capital expenditure project did not claim special depreciation on plant and machinery in its first years of operation as it was thought that the initial tax losses might not be offset within the required period. Section 25 of the Land and Income Tax Amendment Act 1968 permits losses incurred in the 1962-63 income year and not offset prior to the 1968-69 year, together with losses incurred in the 1968-69 and subsequent years, to be carried forward indefinitely.

In addition, a company may offset a loss incurred in a prior income year provided that the Commissioner is satisfied that at the end of the year of the loss and the year in which a claim is made for the loss carried forward forty per cent of the nominal value of the allotted shares or forty per cent of the paid-up capital are held by, or on behalf of, the same persons. If there is a significant change in the shareholding of a company, the benefit of a tax loss carried forward (including special depreciation and/or investment allowance) may also be lost. See Land and Income Tax Act 1954, s.137.

The Sensitivity of Capital Expenditure Decision Techniques to Special Depreciation and Investment Allowances

For special depreciation and investment allowances to influence capital expenditure decisions, it is necessary that the capital expenditure decision techniques employed by firms be sensitive to these allowances.<sup>17</sup> This requires that proposals be evaluated on an after-tax basis.

The discounted cash flow methods (net present value and internal rate of return) recognise the time value of money. The present value method was used to estimate the benefit of special depreciation and investment allowances for the purposes of the above discussion. The internal rate of return on a proposal will increase on the introduction of special depreciation and/or investment allowances. Those proposals which have an internal rate of return marginally less than the required rate of return will tend to be acceptable, given the introduction of special depreciation and investment allowances.

The payback method, which has been advocated as a suitable method of allowing for risk and uncertainty, may give some recognition to special depreciation allowance.<sup>18</sup> If the cut-off period is shorter than the life of the relevant asset for taxation purposes, a special depreciation allowance will reduce the amount of taxation paid before and during the cut-off period. Thus proposals which have a payback period marginally greater than the maximum acceptable

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<sup>17</sup> For a first discussion of capital expenditure decision techniques see A.J. Merrett and Allen Sykes, The Finance and Analysis of Capital Projects, Longmans, London, 1963, 33-219.

<sup>18</sup> Richard Goode, "Accelerated Depreciation Allowances as a Stimulus to Investment", Quarterly Journal of Economics, 69 (1955), 196.

period may be approved following the introduction of a special depreciation allowance. If the life of an asset for taxation purposes is less than the acceptable period, changes in the timing of depreciation claims will not alter the timing and ranking of the proposal. The investment allowance shortens the payback period of the proposal, regardless of the length of the life of the asset.

The accounting rate of return is insensitive to special depreciation allowance. It is usually computed by expressing the average incremental profit resulting from a proposal as a percentage of the capital outlay required. As the time value of money is not recognised, the average incremental taxation will be the same with or without special depreciation allowance.

Sometimes the entire life of a proposal is not considered in computing the accounting rate of return.<sup>19</sup> In this case, if special depreciation allowance is charged against revenue, the accounting rate of return may be less than what it would be in the absence of special depreciation. On the other hand, if lower taxation payments were brought into account and special depreciation were not regarded as an incremental cost, the accounting rate of return will tend to increase.

Although the investment allowance will increase the accounting rate of return, the amount of the increase will decrease as the life of the relevant asset increases. For average- to long-term proposals the increase in the accounting rate of return as a result of the investment allowance will be

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<sup>19</sup> A.S. Ashton, "Investment Planning by Private Enterprise", Lloyds Bank Review, October, 1962, 25.

negligible. For example, a ten per cent investment allowance will increase the rate of return on an asset with a life of ten years by 0.45 per cent. For an asset with a twenty-year life, the increase in the accounting rate of return would be 0.23 per cent. If the tax saving arising from claiming investment allowance were deducted from the cost of qualifying assets, the accounting rate of return would be marginally larger with investment allowance than without that allowance. As the denominator and numerator are affected by deducting the tax saving arising from claiming investment allowance from the cost of qualifying assets, this method of accounting for investment allowance may result in a larger or smaller accounting rate of return than that obtained if the tax saving were reflected in profit after-tax in the year in which the allowance is claimed. In normal circumstances the difference in accounting rate of return resulting from these two methods of accounting for investment allowance will be negligible.

Of the four capital expenditure decision techniques discussed, the net present value and internal rate of return methods are generally more sensitive to special depreciation and the investment allowances than the payback period or the accounting rate of return methods.<sup>20</sup>

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<sup>20</sup> For a further discussion of the effects of various capital expenditure decision techniques on the type of capital expenditure proposals selected, see G.C. Harcourt, "Investment Decision Criteria, Investment Incentives and the Choice of Techniques", The Economic Journal, 78 (1968), 77-95.

The Method of Accounting for Special  
Depreciation and Investment Allowances<sup>21</sup>

The methods used to account for special depreciation and investment allowances in the annual reports of companies may affect the extent to which these allowances influence the timing, nature and amount of capital expenditure undertaken. If special depreciation were charged against revenue and this resulted in a charge and an accumulated charge in excess of that "reasonably necessary for the purpose"<sup>22</sup> the company's profit after-tax, earnings per share, dividend cover, share price and asset backing might be understated. Although this may benefit a new shareholder at the expense of an older shareholder, it might result in an increase in the firm's cost of capital, a reduction in its ability to borrow at reasonable interest rates and the rejection of capital expenditure proposals which might otherwise be undertaken. The mere fact that a capital expenditure proposal might unduly distort income as a result of excess depreciation charges in the initial years may be sufficient to ensure rejection of the proposal. If special depreciation were accounted for by a method which resulted in an increase in after-tax profit and did not result in both an excessive charge and an accumulated charge for depreciation, then a company may undertake capital expenditure proposals which

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<sup>21</sup>This section is based on an article by G.J. Schmitt, "Depreciation: Tax Claims and Accounting Charges", The Accountants' Journal, 49 (1971), 231-2.

<sup>22</sup>Companies Act 1955, Eighth Schedule, par. 2(2). For most of the period during which special depreciation has been granted, it was necessary to charge a similar amount to that claimed.

might otherwise be rejected. Similarly, if the tax saving arising from claiming investment allowance were deducted from the cost of qualifying assets, asset backing per share, dividend cover, earnings per share and share price may be understated in the year in which that allowance is claimed relative to what they would be if the tax saving were reflected in profit after-tax.

### The Flexibility of Capital Expenditure Plans

For special depreciation and investment allowances to be effective in the short-term, it is necessary to assume that firms have a range of proposals which may be accepted or rejected, and advanced or delayed.<sup>2 3</sup> Major proposals are unlikely to be as flexible as this. First, they require a considerable commitment in terms of planning and, beyond a given point, the cost of deferring or abandoning the proposal become so large that a major change in expectations or facts would be necessary to justify a significant change in plans. Secondly, it may be impossible to advance major capital expenditure projects to take advantage of incentives and concessions. For these reasons, the acceptance of major proposals cannot depend on marginal taxation factors which, by their nature, might be expected to be introduced, modified or withdrawn from time to time. Minor proposals may be more flexible and therefore more responsive to incentives. Even in this case, the lag between entering into a commitment to proceed with a proposal and the first use of the relevant

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<sup>2 3</sup> Richard Bird, op. cit., 359.

assets may be considerable.

Special depreciation and investment allowances continue after their expiry date in respect of assets of a type which would have qualified had these allowances not been withdrawn, provided that they were included in an approved development plan. This provision enables a firm to proceed with a proposal which might be deferred or abandoned if an assurance that the allowances would be available when the relevant assets are first used could not be obtained. In the past, assets which are acquired under a development plan have not qualified for increases in allowances announced subsequent to approval of the plan.<sup>24</sup> This approach represents an attempt to limit incentives to items of expenditure which may not otherwise be undertaken. A firm must therefore compare the risk of losing existing incentives on assets which might be included in a development plan with the chances of receiving greater incentives should the existing incentives be increased. To the extent that capital expenditure proposals are approved as development plans, the short-term impact of changes in these allowances is reduced.

Capital expenditure projects the size and/or timing of which are not influenced by special depreciation and/or investment allowance benefit from these allowances. For this reason, a relatively high cost in terms of taxation revenue forgone is necessary to influence the timing and acceptance or rejection of marginal capital expenditure proposals.

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<sup>24</sup>For example, see Land and Income Tax Amendment Act (No.2) 1972, s.14 (3).

Moreover, community social and economic costs and benefits of individual projects are not considered in determining eligibility to benefit from special depreciation or investment allowance. Despite this, some section of the community might be required to pay more tax and/or receive fewer Government services to finance the revenue cost of these allowances.

Some New Zealand incentives apply to a narrow range of qualifying assets or activities.<sup>25</sup> In the case of forestry encouragement and research grants it is necessary to submit a satisfactory proposal in order to qualify. However, those incentives which result in the largest cost in terms of taxation revenue forgone are available to almost any taxpayer who acquires and uses a wide range of qualifying assets in a large variety of activities. If taxpayers were required to submit a satisfactory proposal in order to qualify for special depreciation and investment allowance, it might be possible to identify individual projects which have both of the following characteristics :

- (1) the size and/or timing of the project would be influenced by special depreciation and/or investment allowance, and
- (2) the project is justified on the basis of community social and economic costs and benefits.

The above approach differs considerably from the present one and might create some administration difficulties.

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<sup>25</sup>For example, special depreciation on cool stores for meat or meat products and additional depreciation on buildings used for processing or storage of fish or fish products.

Liquidity and Special Depreciation and Investment Allowances

In the above discussion we have been primarily concerned with the effect of special depreciation and investment allowances on the rate of return from capital expenditure proposals. Some authorities have argued that the liquidity effect is more important.<sup>26</sup> Given an imperfect capital market and a reluctance to raise external funds, resources which would otherwise be used for tax payments may be used to finance capital expenditure. In this way, the allowances provide equity capital without regard to the firm's borrowing capacity. For example, a ten per cent investment allowance means that a firm with a forty-five per cent tax rate is required to find finance for 95.5 per cent of the cost of the asset. The remaining 4.5 per cent may be financed by funds which would otherwise be used to pay taxation.<sup>27</sup>

It is argued that new, small and growing firms and those undertaking capital expenditure projects with greater-than-average risk may find finance difficult to obtain and that interest rates may be excessive. For this reason, the level of capital expenditure undertaken by firms in the above categories may be limited by the amount of available finance. These firms are expected to be particularly responsive to incentives and concessions.

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<sup>26</sup>J.C.R. Dow, "Fiscal Policy and Monetary Policy as Instruments of Economic Control", Westminster Bank Review, August 1960, 4.

<sup>27</sup>Short-term finance may be required for the period between the date on which payment for the asset is due and the date on which the relevant tax would otherwise be paid. This period is less under the P.A.Y.E. system than under the previous system where most companies were "subsisting" companies.

Opponents of this view argue that the level of capital expenditure of most firms is not limited by the availability of finance and that these firms are unlikely to undertake capital expenditure projects merely because finance is available.<sup>28</sup> Furthermore, firms which face a finance constraint must allocate any additional finance among capital expenditure, the servicing of that expenditure in the form of working capital, the repayment of debt and dividend payments. For this reason, any increase in liquidity as a result of incentives is unlikely to result in a significant increase in capital expenditure. These differences of opinion depend on the significance of a finance constraint on further capital expenditure. The importance of this constraint will differ from firm to firm, from industry to industry and from one point in time to another. For these reasons, both arguments are important.

Shifting of the Benefit of Special Depreciation  
And Investment Allowances

We have assumed that the maximum benefit accrues to the purchaser of qualifying assets. If this assumption were relaxed we might expect, in the long run and to a lesser extent in the short run, the benefit from special depreciation and investment allowances to be shifted forward by way of price and output changes and backward by changes in the cost of factors of production.

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<sup>28</sup> Richard Bird, op. cit., 356-8.

The effect of incentives of this type on prices and output has rarely been discussed. One reason for this is probably the complexity of the subject and the inconclusive theoretical results which such a study produces.

Professor Schmitt, in his study of the incidence of company tax and taxation incentives and concessions, concluded that :

"As a minimum, one must say that the incidence of the tax itself, and of concessions from it, must depend upon the industry under study, the organisation of the firms in that industry, and the attitude, beliefs and policy of its managers, including even how the management of the firm keeps its accounts."<sup>29</sup>

This view, which does not preclude adjustments to price and output following the imposition of a company tax, is supported by Musgrave.<sup>30</sup>

Professor Schmitt went on to analyse taxation concessions and incentives as negative indirect taxes. He concluded that :

"..... it is likely that some part of the benefit of the concession will be shifted to other participants in the subject economic activity and will not be enjoyed entirely by the apparent recipient."<sup>31</sup>

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<sup>29</sup>G.J. Schmitt, The Company Tax Provision : Its Significance in Evaluating Performance and Prospects, New Zealand Society of Accountants, Wellington, 1971, 15.

<sup>30</sup>Richard A. Musgrave, The Theory of Public Finance : A Study in Public Economy, McGraw-Hill, 1961, 276-87. Also see Richard Goode, The Corporation Tax, John Wiley, New York, 1951, 46-58 and 139. For an empirical study supporting the view that in the short-run the United States corporation tax is not shifted, see William H. Oakland, "Corporate Earnings and Tax Shifting in U.S. Manufacturing, 1930-68", The Review of Economics and Statistics, 54 (1972), 235-44. Also see references cited by Oakland.

<sup>31</sup>G.J. Schmitt, The Company Tax Provision : Its Significance in Evaluating Performance and Prospects, op. cit., 17 and 26-28.

The extent of price and output adjustments will depend on the state of the factor and product markets, the reactions to real or imagined facts of the market in each firm, in respect of each activity, whether directly or indirectly affected.<sup>32</sup>

If these conclusions are accepted, then adjustments to price and output are particularly important in assessing the effect of introducing or withdrawing special depreciation and investment allowances. Over time the theoretical benefit of these incentives will be diminished and at the same time their withdrawals may have a disincentive effect in the short-term.<sup>33</sup> In the longer term, adjustments, the reverse of those which took place on the introduction of special depreciation and investment allowances, would occur. There may be a difference in the timing of these adjustments. On the introduction of an incentive, it is unlikely that selling prices would be reduced as quickly as they might rise on its withdrawal. The reason for this is that prices tend to be sticky downwards. Firms probably anticipate future price rises, especially in periods characterised by inflation, and hence the additional margin would tend to be retained to absorb expected cost increases.

As the allowances generally apply to manufacturers and others engaged at an early stage in the productive and marketing process, one might expect price reductions (including the holding of prices when they would, but for the concessions, rise) to have a cascade effect.<sup>34</sup>

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<sup>32</sup>ibid., 21.

<sup>33</sup>loc. cit.

<sup>34</sup>ibid., 19-21.

This occurs when prices are determined on a cost-plus basis. The impact on final prices of special depreciation and investment allowances may not be insignificant.

The method of accounting for special depreciation and investment allowances may influence the extent to which these allowances achieve their objectives and the extent to which the benefit is shifted.

Given that a firm does not change the method of computing its depreciation charge on the introduction of special depreciation, it will require a lower taxation provision than otherwise. The resulting increase in after-tax profits would tend to reduce pressure for increased prices and to increase pressure for higher payments to factors of production. This approach assumes that a firm's return on shareholders' equity (or equivalent) and the change in net profit are taken into consideration in assessing the firm's performance by directors, shareholders, suppliers, employees and the public.

If the depreciation charge increases as a result of the introduction of special depreciation the reverse may occur. As profits would be reduced, pressure may be exerted for higher prices and lower returns to factors of production.

The method of accounting for special depreciation may also influence a firm's decision to dispose of used assets. If there is a reluctance to accept a "book loss" on assets, then an increase in the depreciation charge (as a result of charging special depreciation) may result in the disposal of qualifying assets at an earlier time than would otherwise be the case. If assets are disposed of before the end of their economic life, special depreciation may result in the

waste of resources and increases in production costs. On the other hand, if assets would otherwise be retained beyond their economic life, the charging of special depreciation may encourage a more efficient use of resources and may reduce costs.

Three methods of accounting for investment allowance are ;

- (1) the tax saving may be credited to the profit and loss account in the year in which the relevant asset is first used,
- (2) the tax saving may be deducted from the cost of the qualifying asset so that depreciation charges (not claims) over the life of the asset are reduced, or
- (3) the gross amount of the allowance may be charged in the profit and loss account and credited in the appropriation account.<sup>35</sup>

If the first method were used, the taxation provision would be reduced in the year in which the qualifying asset is first used. This tends to reduce pressures for price increases and tends to increase pressures for higher payments to factors of production. The second method has a similar effect, except that the increase in after-tax profit would be spread, and this would generally be less noticeable.

The third method has been suggested as a means of equating reported profit before-tax with taxable income.<sup>36</sup> Under this method, prices would tend to increase as after-tax profit is reduced and there may be some pressure to reduce factor.

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<sup>35</sup> Charles A. Staples, A Guide to New Zealand Income Tax Practice 1972-1973, Sweet & Maxwell, Wellington, 1973, 395-6.

<sup>36</sup> loc. cit.

payments. As profits available for appropriation are increased, dividends may increase.

Expectations and Special Depreciation  
And Investment Allowances

All of the above factors may prove to be of little importance. Special depreciation and investment allowances may influence capital expenditure decisions by their effect on the confidence of businessmen. If businessmen expect sales and profits to increase, they will tend to add sufficient capacity to meet expected demand. To the extent that the introduction of these allowances indicates Government's desire to expand a particular activity or activity in general, businessmen might become optimistic about the future. This optimism may be sufficient to encourage the search for, and adoption of, profitable capital expenditure proposals. Conversely, the withdrawal of an allowance, especially prior to its expiry date, might indicate a period of restraint and uncertainty. This alone may be sufficient to influence the capital expenditure plans of firms.

The problem with this view is that it becomes increasingly difficult to predict the effect of these allowances. Moreover, the desired effect of the allowances may not be achieved if other factors and indicators suggest an alternative outlook.

The Multiple Asset Case

Although the single asset approach discussed above sheds considerable light on the theoretical effect of special

depreciation on the amount, timing and nature of capital expenditure proposals considered by firms, it is of interest to consider the effect of this allowance on firms which maintain, increase or decrease their stock of qualifying assets. The following examples will illustrate the effect of special depreciation on such firms.

Assume that a mature firm has one hundred machines each costing one hundred dollars. The life of each machine is ten years and ten machines are replaced each year. Holding prices and technology constant, and given a twenty per cent diminishing value depreciation rate, the firm will claim \$1,000 annually. It is further assumed that special depreciation is introduced at the commencement of year one, such that an additional ten, five, three and two per cent respectively of the cost of the asset is claimed in the first four years of the life of the asset.<sup>37</sup> In Table IX-5 columns B to D, the pattern of depreciation claims for years one to ten is given, assuming no other changes.

Depreciation claims rise rapidly in the first year and at a slower rate in the second and third years. In the fourth and following years depreciation claims decline, as the initial claims for special depreciation result in lower ordinary depreciation claims. By the tenth year, all assets are depreciated on the new schedule of ordinary and special depreciation, and the depreciation claim returns to its previous level of \$1,000 a year. Provided that special depreciation continues in the form given above and the

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<sup>37</sup>The scrap value is assumed to be zero and the claim in the last year of the life of the assets includes a balancing deduction of \$107.40 in the case of ordinary depreciation and \$74.10 in the case of ordinary and special depreciation.

TABLE IX-5

ANNUAL DEPRECIATION CLAIMS GIVEN THE INTRODUCTION AND WITHDRAWAL OF SPECIAL DEPRECIATION:  
THE TRANSITIONAL EFFECTS FOR A STATIC FIRM

Year	Ordinary and Special Depreciation Claim	Ordinary Depreciation Claim	Excess of Ordinary and Special Depreciation Claim Over Ordinary Depreciation Claim	Ordinary Depreciation Claim	Ordinary and Special Depreciation Claim	Excess of Ordinary Depreciation Claim Over Ordinary and Special Depreciation Claim
A	B	C	D	E	F	G
	\$	\$	\$	\$	\$	\$
1	1,100	1,000	100	900	1,000	-100
2	1,130	1,000	130	870	1,000	-130
3	1,134	1,000	134	866	1,000	-134
4	1,127	1,000	127	873	1,000	-127
5	1,102	1,000	102	898	1,000	-102
6	1,081	1,000	81	919	1,000	-81
7	1,065	1,000	65	935	1,000	-65
8	1,052	1,000	52	948	1,000	-52
9	1,042	1,000	42	958	1,000	-42
10 and subsequent years	1,000	1,000	0	1,000	1,000	0

assumptions hold, the annual claim in future years will be \$1,000.

From Table IX-5 it will be clear that the firm has received an initial gain which is not lost unless special depreciation is withdrawn. The cumulative depreciation claim in years one to ten exceed the cumulative claim which would otherwise have been made by eight hundred and thirty-three dollars or 8.33 per cent.

Columns E to G of Table IX-5 disclose the effect of withdrawing special depreciation. The assumptions are similar to those given above, except that it is assumed that the firm has received the transitional gain from the introduction of special depreciation. In year one special depreciation is withdrawn. The firm suffers an initial loss in that depreciation claims are reduced. By the tenth year, the annual claim has returned to \$1,000 a year. The adjustment process is the reverse of that described above on the introduction of special depreciation.

The above discussion reveals that a static firm initially increases its depreciation claims on the introduction of special depreciation. These are recovered if special depreciation is withdrawn. Thus in the multiple asset case, the firm receives something more than an interest free loan, it receives a free gift which is contingently recoverable.<sup>38</sup>

In the next table (Table IX-6), we examine the position

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<sup>38</sup>The static case is similar to the single asset case, except that the latter provides for repayment during the proposal. The former provides for repayment when the allowance is withdrawn or when the firm starts to decrease its stock of qualifying assets.

TABLE IX-6

## ANNUAL DEPRECIATION CLAIMS WITH AND WITHOUT SPECIAL DEPRECIATION FOR GROWING AND DECLINING FIRMS EXCLUDING TRANSITIONAL EFFECTS

Year	Increasing Positive Rate of Growth				Decreasing Positive Rate of Growth				Decreasing Negative Rate of Growth			
	Number of Machines at Start of Year	Ordinary and Special Depreciation Claim	Ordinary Depreciation Claim	Excess of Ordinary and Special Depreciation Claim Over Ordinary Depreciation Claim	Number of Machines at Start of Year	Ordinary and Special Depreciation Claim	Ordinary Depreciation Claim	Excess of Ordinary and Special Depreciation Claim Over Ordinary Depreciation Claim	Number of Machines at Start of Year	Ordinary and Special Depreciation Claim	Ordinary Depreciation Claim	Excess of Ordinary and Special Depreciation Claim Over Ordinary Depreciation Claim
A	B	C	D	E	F	G	H	I	J	K	L	M
	N <sup>1</sup>	\$	\$	\$	N	\$	\$	\$	N.	\$	\$	\$
1	110	1,300	1,200	100	110	1,300	1,200	100	90	700	800	-100
2	130	1,790	1,560	230	120	1,490	1,360	130	80	510	640	-130
3	160	2,412	2,048	364	130	1,622	1,488	134	70	378	512	-134
4	200	3,130	2,639	491	140	1,718	1,591	127	60	283	411	-128
5	250	3,904	3,311	593	150	1,774	1,672	102	50	226	328	-102
6	310	4,723	4,049	674	160	1,819	1,738	81	40	181	262	-81
7	380	5,578	4,839	739	170	1,855	1,790	65	30	145	210	-65
8	460	6,463	5,671	792	180	1,884	1,832	52	20	116	168	-52
9	550	7,370	6,537	833	190	1,907	1,866	42	10	93	134	-41
10	660	8,670	7,737	933	200	2,000	2,000	0	-	-	-	-

<sup>1</sup>"N" denotes number.

of firms which are growing or declining. In columns B to E we consider the case of a firm growing at an increasing positive rate of growth. It is assumed that in year nought the firm has one hundred machines as in the previous example. In addition, the firm increases its stock of machines so that at the commencement of each year it uses the number of machines shown in column B. All other assumptions are the same as those given in the previous example.

From Table IX-6 column E, it can be seen that the firm receives a growing benefit. In year one the excess of ordinary and special depreciation claims over ordinary depreciation claims is one hundred dollars. By year ten this has increased to over nine hundred dollars annually. If the growth commences in the year in which special depreciation is introduced, the total excess of ordinary and special depreciation claims over ordinary depreciation claims may be obtained by adding the amounts given in column D of Table IX-5 to those given in column E of Table IX-6. A firm which is growing at an increase positive rate of growth receives a growing depreciation claim and can therefore continue to decrease the effective rate of taxation.

In Table IX-6 columns F to I, the position of a firm which grows at a decreasing positive rate is examined. This firm adds ten additional machines to its stock each year. By year ten its stock of qualifying assets has doubled from that of year nought. The excess of ordinary and special depreciation claims over ordinary depreciation claims is given in column I. Although the amounts given in column I increase until year three, the firm does not receive a growing excess of special and ordinary depreciation claims over ordinary

depreciation claims. If special depreciation were introduced in year nought, the excess of ordinary and special depreciation claims would be double that given in column I.

In columns J to M we consider the position of a firm which is decreasing its stock of qualifying assets at a decreasing rate. This is the converse of the immediately preceding case. From column M it will be evident that such a firm will suffer a faster cash loss by claiming special depreciation than would otherwise be the case.

By example, it could also be demonstrated that a firm which is declining at an increasing rate will suffer an increasing cash loss to the Inland Revenue Department if special depreciation were claimed.

The above examples highlight a further point of interest. Under the assumptions given a static firm claims the same amount for depreciation as that spent on acquiring replacement assets. A growing firm claims a larger amount for depreciation than that spent in acquiring replacement assets. At the end of year ten, the firm growing at an increasing positive rate of growth replaces ten machines (the ten machines purchased at the commencement of year nought). The depreciation claim in respect of the tenth year of \$8,670 would give a tax saving of \$3,900 which is greater than the \$1,000 required for replacement purposes. In later years the amount spent on replacements will increase as the machines acquired as a result of growth are retired. So long as growth continues, the amount allocated to replacements will be less than the depreciation claim for the relevant

year.<sup>39</sup>

The multiple asset case appears to provide a more realistic analysis of the effect of special depreciation on firms. First, the firm's taxation position in each year is dependent on its overall position and not on a project-by-project basis. Secondly, companies which are of primary interest in this study generally have long lives and they tend to grow, at least in money terms. From the revenue cost point of view, the single asset case leads to the view that special depreciation is in essence an interest-free loan. In contrast, the multiple asset case highlights the initial revenue loss resulting from special depreciation and in certain circumstances the growing loss of revenue.

The above analysis leads to the following conclusion. Special depreciation provides an initial gift to static firms, a larger gift to growing firms and a growing gift to firms which are growing at an increasing rate.<sup>40</sup> These gifts are contingently recoverable. Should special depreciation be withdrawn, the gift becomes repayable. A firm which is declining suffers a loss from claiming special depreciation. This loss is larger if the firm is declining at a decreasing rate and is a growing loss if the firm is declining at an increasing rate.

#### CONCLUSION

The size of the benefit from special depreciation

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<sup>39</sup>For a further discussion of this point, see Robert Eisner, "Depreciation Allowances, Replacement Requirements and Growth", The American Economic Review, 42 (1952), 320-31; Evsey D. Domar, "Depreciation, Replacement and Growth", The Economic Journal, 63 (1953), 1-32.

<sup>40</sup>A.R. Prest, Public Finance in Theory and Practice, Weiderfeld and Nicolson, London, 1965, 317.

depends on; (i) the rate of taxation, (ii) the timing of tax payments, (iii) the discount rate, (iv) the rate of ordinary and special depreciation and (v) the life of the relevant asset. The size of the benefit from investment allowance depends on (i) to (iii) above and on the rate of that allowance. Given realistic assumptions and values for the above variables, the net present value of capital expenditure proposals increased by between 1.76 and 4.48 per cent of the cost of the qualifying asset on the introduction of a twenty per cent special depreciation allowance. A ten, twenty and thirty per cent investment allowance increased the net present value of capital expenditure proposals by over four, eight and twelve per cent of the cost of the asset respectively.

As the discount rate increases, the benefit from special depreciation increases until a maximum is reached at some high discount rate. The benefit of investment allowance decreases as the discount rate increases. The benefit from special depreciation decreases as the ordinary tax rate of depreciation increases. For this reason, special depreciation discriminates against the intensive use of plant and machinery. Investment allowance also encourages the accumulation of qualifying assets rather than the intensive use of such assets.

Taxation incentives and concessions discriminate against new firms which are unable to earn sufficient profits to obtain the maximum benefit from the incentives. Incentives may also discriminate against those firms which undertake relatively major capital expenditure projects. It is suggested that cash grants might be used to remove discrimination against firms in the above positions.

Discounted cash flow decision techniques are sensitive to special depreciation and investment allowances. The sensitivity of the payback and accounting rate of return methods to these allowances depends on the facts of the particular case. In general, these methods are less sensitive than are discounted cash flow methods.

The benefit from the allowances under study may be shifted by price and output changes and by changes in the cost of factors of production.

The multiple asset approach disclosed that firms receive an initial gain on the introduction of special depreciation.

A growing firm receives a larger gain than a static firm and a firm which grows at an increasing positive rate receives a growing gain. These gifts are recovered if special depreciation is withdrawn. A firm which is decreasing its stock of qualifying assets will suffer a faster loss of cash than would otherwise be the case by claiming special depreciation.

From the above it can be seen that special depreciation and investment allowances affect different proposals and firms in different ways. The full effects of these allowances on the capital expenditure decisions of firms is difficult to assess.

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CHAPTER XPREVIOUS RESEARCH : A SUMMARYABSTRACT

The results of nine surveys conducted in three separate countries are summarised. These studies suggest that a significant proportion of firms do not evaluate capital expenditure decisions on an after-tax basis and that capital expenditure decision techniques which are less sensitive to incentives and concessions are more frequently used than those which are sensitive. A small proportion of firms surveyed are reported to be responsive to allowances similar to special depreciation and investment allowances.

The aim, coverage and survey methods differ from study to study. For this reason no firm conclusions are drawn from the investigations which are reviewed. However, the findings do suggest topics worthy of study in relation to New Zealand conditions.

INTRODUCTION

A summary of selected empirical research conducted in the United Kingdom, Canada and New Zealand is presented. These studies suggest areas worthy of further study. Each investigation is summarised under the name of the researcher or the sponsoring organisation. The period during which the relevant field work (collection of data, study of annual accounts and the like) was conducted is stated next to the researcher's name.

UNITED KINGDOMTibor Barna (1949-59)<sup>1</sup>

The annual accounts of seventy-four companies engaged in electrical engineering and food processing industries, together with interviews with representatives of thirty-five firms, provided the source material for this study.<sup>2</sup> Relevant findings were :

- (i) Given the rate of profit, there was little relationship between the growth of fixed assets or total assets and liquidity,<sup>3</sup>
- (ii) forty per cent of the firms interviewed prepared formal plans,<sup>4</sup>
- (iii) one-third of the firms interviewed did not prepare a written evaluation of capital expenditure proposals,<sup>5</sup>
- (iv) the minimum pre-tax cut-off rate of return was generally between fifteen and twenty-five per cent. The profitability of the companies suggested that on average projects actually earned considerably less than the minimum rate,<sup>6</sup>
- (v) subjective expectations were an important influence on the decision to invest.<sup>7</sup>

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<sup>1</sup>Tibor Barna, Investment and Growth Policies in British Industrial Firms, Occasional Paper 20, The National Institute of Economic and Social Research, Cambridge University, Cambridge, 1962.

<sup>2</sup>ibid., 4-5.

<sup>3</sup>ibid., 15 and 17. Note that liquidity was defined as the ratio of cash, tax certificates and marketable securities less bank overdraft to total assets.

<sup>4</sup>ibid., 25-8.

<sup>5</sup>ibid., 33.

<sup>6</sup>loc.cit.

<sup>7</sup>ibid., 36-7.

Mackintosh (1946-47/1954-55)<sup>8</sup>

The aim of this investigation was to determine the effect of taxation on the development of firms. Interviews, supplemented by questionnaires and statistical studies, were used to collect data on thirty-six manufacturing companies operating in the Birmingham area.<sup>9</sup>

The level of capital expenditure of fourteen of the firms was limited by the amount of available finance. Seven of these participants had a self-imposed finance constraint. The capital expenditure of eight other firms was limited by an inadequate rate of return on proposals considered.<sup>10</sup> Mackintosh estimated that between two and six per cent of the saving from a ten per cent reduction in corporate tax would be passed on in price reductions, whereas twenty to thirty-six per cent would be absorbed in higher dividends. Increased investment in fixed assets and stocks were expected to absorb between seven and twenty per cent of the tax saving.<sup>11</sup> Although these results were based on certain assumptions, they suggest that a reduction in the rate of taxation would not greatly influence the level of prices. Mackintosh concluded that a twenty per cent investment allowance had resulted in a small increase in the capital expenditure undertaken by twenty per cent of the firms interviewed.<sup>12</sup> Moreover, he expressed

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<sup>8</sup> A.S. Mackintosh, The Development of Firms: An Empirical Study with Special Reference to the Economic Effects of Taxation, Cambridge University, Cambridge, 1963.

<sup>9</sup> ibid., 55.

<sup>10</sup> ibid., 71.

<sup>11</sup> ibid., 126.

<sup>12</sup> ibid., 140.

an opinion that the number of firms which were responsive to that allowance was increasing.<sup>13</sup>

Federation of British Industry (1953-57)<sup>14</sup>

In preparing its submissions to the Committee on the Working of the Monetary System, the Federation conducted a questionnaire survey of its members. Of the 1,595 participants, 12.2 per cent answered that they were deterred from raising money as a result of the cost of borrowing, capital issues controls or other reasons.<sup>15</sup> About thirty-three per cent of those who completed the questionnaire were of the view that difficulty of obtaining finance had deterred fixed investment.<sup>16</sup>

Twenty-three per cent of the participants answered that their investment decisions had been materially affected by favourable changes in investment and initial allowances.<sup>17</sup> Conversely, fourteen per cent were adversely affected by unfavourable changes in these allowances.<sup>18</sup>

An interesting finding of this survey was that fifty-seven per cent of the firms indicated that higher taxation in the post-war period had resulted in an increase in their minimum pre-tax rate of return required from capital

<sup>13</sup>ibid., 141. This view was based on the fact that the investment allowance had been operating for a period of twenty months at the time of conducting the interviews.

<sup>14</sup>The Committee on the Working of the Monetary System, Principal Memoranda of Evidence, 3, 118.

<sup>15</sup>ibid., 119.

<sup>16</sup>loc.cit.

<sup>17</sup>loc.cit.

<sup>18</sup>loc.cit.

expenditure proposals.<sup>19</sup>

National Economic Development Council (1964)<sup>20</sup>

The Management Consultants' Association undertook a pilot study for the National Economic Development Council designed to investigate the influence of certain factors on decisions to invest in machine tools. Interviews were conducted with sixty selected officers of companies engaged in engineering activities.<sup>21</sup> As forty-five of the participants were clients of members of the Association, data and experience gained from previous work with them were also used.<sup>22</sup>

The main conclusions of the study were:

- (i) Ninety-five per cent of the participants indicated that taxation concessions had little or no direct influence on their decisions.<sup>23</sup> Twenty-seven per cent acknowledged an indirect effect via increased liquidity.<sup>24</sup> Of these, about half were reasonably certain that incentives had resulted in their buying more machines than would otherwise have been the case.<sup>25</sup>
- (ii) Twenty-two per cent of the firms used no established capital investment decision techniques.<sup>26</sup> Seventy-eight per cent used the payback method, five per cent of which took taxation incentives into account.<sup>27</sup>

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<sup>19</sup>ibid., 120.

<sup>20</sup>National Economic Development Council, Investment in Machine Tools : A Survey by the Management Consultants' Association, H.M.S.O., London, 1965.

<sup>21</sup>ibid., 4.

<sup>22</sup>loc.cit.

<sup>23</sup>ibid., 17.

<sup>24</sup>loc.cit.

<sup>25</sup>ibid., 18.

<sup>26</sup>ibid., 7.

<sup>27</sup>ibid., 2.

- (iii) Seventy-eight per cent considered that there were adequate funds available for the purchase of machine tools.<sup>28</sup>

Neild (1964)<sup>29</sup>

The purpose of this survey was to study the replacement policy of engineering firms (some of which were branches of companies). Firms participating in a one-day conference on this subject were later requested to complete a questionnaire.

From the one hundred and thirty-three participants, Neild found that;

- (i) Possible cost savings and physical deterioration were the main motives for the replacement of plant and machinery,<sup>30</sup>
- (ii) Fifty-one per cent made written estimates of expected cost savings from proposals and a further forty-three per cent made estimates in some cases,<sup>31</sup>
- (iii) Sixty-seven per cent used the payback method, twenty-one per cent used the accounting rate of return method and two per cent used discounted cash flow decision methods,<sup>32</sup>
- (iv) Eighteen per cent of the participants evaluated replacement proposals on an after-tax basis.<sup>33</sup>

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<sup>28</sup>ibid., 19.

<sup>29</sup>R.R. Neild, "Replacement Policy", National Institute Economic Review, 30 (1964), 30-34.

<sup>30</sup>ibid., 40.

<sup>31</sup>loc.cit.

<sup>32</sup>loc.cit.

<sup>33</sup>ibid., 35.

Corner and Williams (1956-63)<sup>34</sup>

Data for this investigation was collected by a mail questionnaire survey of two hundred and ten establishments engaged in manufacturing and extractive industries.

Twenty per cent of the participants answered that improvements in initial allowances and in investment allowances had resulted in the acquisition of new plant and equipment at an earlier time than would otherwise be the case.<sup>35</sup> Three per cent of those firms which completed the questionnaire answered that high interest rates had resulted in the abandonment of the planned purchase of new plant and equipment.<sup>36</sup> In contrast, 14.6 per cent of the participants had postponed the planned purchase of plant and equipment as a result of high interest rates.<sup>37</sup> A similar question revealed that difficulties in raising finance had resulted in 6.5 per cent of the participants abandoning planned purchases of plant and equipment and twenty-five per cent postponing such plans.<sup>38</sup>

Seventy-three per cent of the participants used the payback method in evaluating capital expenditure proposals.<sup>39</sup>

Corner and Williams concluded that firms which experienced difficulties in raising finance were slightly more responsive to initial and investment allowances than

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<sup>34</sup>D.C. Corner and Alan Williams, "The Sensitivity of Businesses to Initial and Investment Allowances", Economica, 32 (1965), 32-47.

<sup>35</sup>ibid., 36.

<sup>36</sup>loc.cit.

<sup>37</sup>loc.cit.

<sup>38</sup>loc.cit.

<sup>39</sup>loc.cit.

were other firms.<sup>40</sup> The effect of these allowances via liquidity appeared to more important than their effect on the rate of return.<sup>41</sup> Medium and large sized establishments were more responsive to the allowances under study, than were small ones.<sup>42</sup> Finally, Corner and Williams concluded that growing firms were more responsive to initial and investment allowances than were other firms.<sup>43</sup>

#### CANADA

#### Royal Commission on Taxation (1966)<sup>44</sup> and Helliwell (1954-63)<sup>45</sup>

In 1966 the Royal Commission on Taxation presented its comprehensive six volume report. In addition, a number of research studies was published by members of the Commission's research staff. One of these, by Helliwell, presented the results of an extensive study of seventy companies owning assets stated at \$90 million or more (net of accumulated depreciation). The main sources of data were interviews supplemented by postal surveys, eight in depth case studies and the published accounts of the participants.<sup>46</sup>

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<sup>40</sup> ibid., 45.

<sup>41</sup> loc. cit.

<sup>42</sup> loc. cit.

<sup>43</sup> loc. cit.

<sup>44</sup> Report of the Royal Commission on Taxation, Queen's Printer, Ottawa, 1966 (Chairman : K. Le M. Carter).

<sup>45</sup> J.F. Helliwell, Taxation and Investment : A Study of Capital Expenditure Decisions in Large Corporations, Studies of the Royal Commission on Taxation, Number 3, Queen's Printer, Ottawa, 1966. The results of this study are summarised in J.F. Helliwell, Public Policies and Investment, Clarendon Press, Oxford, 1968.

<sup>46</sup> ibid., 268-70.

The postal surveys were also sent to certain smaller companies.<sup>47</sup>

Helliwell found that approximately seventy-three per cent of the large firms did not regularly employ rate of return calculations which were sensitive to the timing effect of depreciation allowances.<sup>48</sup> By 1963, only one company of the one hundred and fifteen surveyed had benefitted from an accelerated depreciation allowance on goods new to Canada or new to certain surplus manpower areas.<sup>49</sup> This allowance was introduced on 1 January 1961. In this one case the allowance did not influence the relevant decision of the company.<sup>50</sup> Less than forty per cent of the participants benefitted from an accelerated depreciation allowance on the increase in expenditure on depreciable assets over that of the preceding year or the average of the three preceding years.<sup>51</sup> None of these firms had planned its expenditure so as to benefit from that allowance.<sup>52</sup> On the positive side, Helliwell suggested that a change in depreciation claims on capital expenditure undertaken during a specified period can lead to substantial shifts in the timing of certain types of outlay.<sup>53</sup>

The Royal Commission appeared to be reasonably satisfied with accelerated depreciation and was of the opinion that this instrument could be used to provide general tax incentives to encourage savings and investment.<sup>54</sup>

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<sup>47</sup> loc. cit.

<sup>48</sup> ibid., 158.

<sup>49</sup> ibid., 161.

<sup>50</sup> loc. cit.

<sup>51</sup> ibid., 164.

<sup>52</sup> loc. cit.

<sup>53</sup> ibid., 261.

<sup>54</sup> Report of the Royal Commission on Taxation, op. cit., 6, 1966.

NEW ZEALANDTaxation Review Committee (1967)<sup>55</sup>

This committee was of the view that high rates of taxation act as a disincentive to investment and growth, and encourage waste and inefficiency.<sup>56</sup> Moreover, the committee concluded that "tax is generally regarded as an element of cost"<sup>57</sup> and that "there is a strong tendency for companies to pass on company tax in the form of price increases, so as to maintain the desired level of profits after tax."<sup>58</sup> On the other hand, the committee was of the opinion that a reduction in tax was unlikely to lead to a decrease in prices.<sup>59</sup>

In order to assess some of these matters a survey of a "substantial cross section" of companies was undertaken.<sup>60</sup> It was concluded that a permanent five per cent reduction in the company tax rate would, in normal circumstances, result in an increase in investment and after a year or two dividends would tend to rise. To some extent long-term debt would be repaid at an earlier time and to a lesser extent prices would be reduced. Conversely, a permanent increase in taxation was expected to result in price rises as soon as the market could stand the increase.<sup>61</sup>

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<sup>55</sup> Taxation Review Committee, "Taxation in New Zealand", Appendix to the Journals of the House of Representatives, 1967, 1, B-18 (Chairman: L.N. Ross).

<sup>56</sup> ibid., 143, par.330 and 145, par.336.

<sup>57</sup> ibid., 144, par.332.

<sup>58</sup> loc.cit.

<sup>59</sup> ibid., 144, par.333.

<sup>60</sup> ibid., 191, par.467. Note that the number, size or other details of participants were not disclosed.

<sup>61</sup> ibid., 192, par.468.

Catt (1963 and 1965)<sup>62</sup>

Two studies by A.J.L. Catt are relevant to the present discussion. In the first, fifty-five large and twenty-eight smaller companies were surveyed to determine borrowers' attitudes to the finance of investment. Fifty of the large companies were interviewed. The remaining participants completed a questionnaire which had formed the basis of the interviews.<sup>63</sup>

About one-third of the participants answered that they made no estimates of the profitability expected from capital expenditure proposals. A further forty-five per cent expected large errors in their estimates.<sup>64</sup> Less than fifteen per cent of the large participants indicated that failure to raise finance had led to the abandonment or postponement of capital expenditure proposals. The equivalent percentage for small firms was double that of the large companies.<sup>65</sup> Two of the small firms stated that an excessive interest cost had been the main reason for the abandonment of some of their capital expenditure proposals.<sup>66</sup>

In the second study, just under two hundred companies were questioned on their method (if any) of allowing for

<sup>62</sup> A.J.L. Catt, Investment Decision Making in New Zealand: A Study of Borrowers' and Lenders' Attitudes to the Finance of Investment, Research Paper No.5, N.Z. Institute of Economic Research, Wellington, 1964, and A Suggested Company Tax Reform, Discussion Paper No.6, N.Z. Institute of Economic Research, Wellington, 1965.

<sup>63</sup> A.J.L. Catt, Investment Decision Making in New Zealand, op.cit., 7-8.

<sup>64</sup> ibid., 14.

<sup>65</sup> ibid., 17.

<sup>66</sup> loc.cit.

tax when setting the price of the goods which they sold.<sup>67</sup> Of the one hundred and seventy-eight companies which answered the question, seventy per cent indicated that they set price in order to maximise long-run profits and paid whatever tax accrued on that profit.<sup>68</sup> Approximately seventeen per cent used cost-plus pricing, such that the mark-up covered profits and taxes. Of the remainder, five per cent treated tax as a cost of production and nine per cent were subject to price control by Government.<sup>69</sup>

### CONCLUSION

As the above studies were conducted in different countries, at different times and with different samples and for different purposes, no firm conclusions can be drawn from them. However, they do suggest that companies may not evaluate capital expenditure proposals on an after-tax basis, that recommended decision techniques are infrequently employed and that a small proportion of firms are responsive to incentives and concessions. These points and others are tested in relation to a sample of New Zealand listed companies in the following chapters.

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<sup>67</sup>A.J.L. Catt, A Suggested Company Tax Reform, op.cit., 23. Note that the sample included builders, manufacturers, retailers and wholesalers.

<sup>68</sup>ibid., 24.

<sup>69</sup>loc.cit.

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CHAPTER XI  
THE DIRECT EFFECT OF SPECIAL DEPRECIATION  
AND INVESTMENT ALLOWANCES ON THE TIMING  
OF CAPITAL EXPENDITURE PROJECT APPROVALS<sup>1</sup>

ABSTRACT

In respect of the year ended 31 December, 1971 or nearest balance date, 9.2 per cent of the participants (five) in the questionnaire survey answered that special depreciation resulted in the acquisition of qualifying assets at an earlier time than would have been the case if that allowance had not been available. Seventeen per cent of the participants (nine) gave a similar answer to the question on the investment allowance. Firms which were responsive to the timing effect of special depreciation allowance accounted for less than five per cent of the capital expenditure on plant and machinery undertaken by those firms which completed the questionnaire. Those firms which were responsive to the timing effect of the investment allowance accounted for eleven per cent of the capital expenditure undertaken by participants.

The five firms which were responsive to the timing effect of special depreciation allowance were also responsive to the similar effect of investment allowance. From the data collected, no explanation could be found for four firms which were responsive to the timing effect of investment allowance only.

Firms which answered that the most significant constraint on further capital expenditure was an inadequate rate of return on proposals considered were more responsive to the timing effect of special depreciation than were other firms. Fast-growth companies were also more responsive to the timing effect of that allowance than were other firms. Although a large number of relationships were considered, no other statistically significant findings are disclosed by the analysis presented in this chapter.

INTRODUCTION

In this chapter the direct effect of special depreciation and investment allowances on the timing of capital

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<sup>1</sup>The empirical results presented in this chapter attempt to examine certain issues relating to the theoretical effects of special depreciation and investment allowances. These were discussed in Chapter IX. For a description of the methods employed in conducting this survey see Appendix O.

expenditure undertaken in the year ended 31 December, 1971 or nearest balance date by participants in a questionnaire survey of listed companies is discussed. Later in the chapter a brief note on the direct effect of certain selective incentives and concessions is presented.

The purpose of this chapter is to answer the following question :

Did the availability of special depreciation allowance and/or investment allowance in the year ended 31 December, 1971 or nearest balance date result in the acquisition of plant and machinery by participants at an earlier time than would have been the case if these allowances had not been available?

Companies which answered that qualifying assets were acquired at an earlier time than would have been the case if a given allowance had not been available in the relevant year are termed "responsive". Other companies are referred to as "non-responsive" or "not responsive". In this chapter, a firm which is stated to be responsive to a given allowance is responsive to the timing effect of that allowance only.<sup>2</sup>

The above question examines a hypothetical situation and therefore requires an expression of an opinion. For this reason, the answers given to question sixteen may be less reliable than those given to factual questions. Furthermore, several executives of the same firm may have conflicting opinions on the appropriate answer. Despite these obvious

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<sup>2</sup>In the next chapter the direct effect of special depreciation and investment allowances on the value of capital expenditure project approvals is discussed.

weaknesses, the approach adopted appeared to be the only realistic means of assessing the effect of these allowances on the decisions of individual firms.<sup>3</sup>

In attempting to explain why some firms were responsive to these allowances while others were not responsive, we will answer the following subsidiary question :

Is the responsiveness to the timing effect of special depreciation and/or investment allowance related to any one or more of the following variables?

- (1) The size of participants,
  - (2) The growth of participants,
  - (3) The flexibility of participants' forward programme for the purchase of plant and machinery,
  - (4) Liquidity,
  - (5) The nature of the most significant constraint on further capital expenditure,
  - (6) The capital expenditure decision techniques employed,
  - (7) The adequacy of ordinary tax rates of depreciation,
- and
- (8) The methods of accounting for special depreciation allowance and investment allowance.

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<sup>3</sup> An alternative approach might be to determine the amount of capital expenditure undertaken by companies in periods when the above allowances were available and compare this with the amount undertaken when special depreciation and/or investment allowance was not available. This approach is considered inferior as it would not be possible to allocate the change in capital expenditure between the various factors which might be expected to influence the level of capital expenditure. For an example of this approach, see "Investment Allowance Figures Say Impact Negligible", The Australian Financial Review, Thursday, August 23, 1973, 17.

GENERAL RESULTS

From the tabulated answers to questions 16A(i) and 16D the reader will see that five of the participants (9.2 per cent) answered that they acquired qualifying plant and machinery at an earlier time than would have been the case, had special depreciation not been available during the year ended 31 December, 1971 or nearest balance date.<sup>4</sup> Seventeen per cent (nine) gave a similar answer in respect of the investment allowance. These results are based on the fifty-four answers to question sixteen. In the case of the investment allowance, one company indicated that the question was not applicable in the relevant year.<sup>5</sup>

The null hypothesis, that differences between the proportion of firms answering "Yes" and "No" respectively to questions 16A(i) and D relates to chance, is rejected ( $p < 0.001$ ).

The five firms which were responsive to special depreciation allowance accounted for less than five per cent (\$3.7 millions) of the capital expenditure on plant and machinery of \$74 millions incurred in 1971 by the fifty-one firms which answered question five. Moreover, one responsive company accounted for almost eighty per cent of the capital expenditure on plant and machinery undertaken by responsive

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<sup>4</sup>The tabulated answers to the questionnaire survey are presented in Exhibit O-6.

<sup>5</sup>As the investment allowance applied to certain binding contracts entered on, or after, 20 June, 1970, some firms may not have received the full benefit of the allowance in the year ended 31 December, 1971 or nearest balance date. The company which answered that this allowance was not applicable was engaged in transport activities and did not qualify for the allowance prior to its extension to those activities in 1972.

companies.

The nine firms which were responsive to the investment allowance accounted for approximately eleven per cent (\$8.5 millions) of the capital expenditure on plant and machinery undertaken by the fifty firms which answered question five.

When allowance is made for the possibility that some of the capital expenditure on plant and machinery undertaken by responsive firms would not have been influenced by the availability of special depreciation and/or investment allowance, it is evident that these allowances had a minor impact on the timing of capital expenditure on plant and machinery undertaken by participants in the year ended 31 December, 1971 or nearest balance date.

The answers of firms to questions 16A(i) and 16D are compared in Table XI-1. Firms which were responsive to the timing effect of special depreciation allowance were also

TABLE XI-1  
RESPONSIVENESS TO THE TIMING EFFECT OF SPECIAL  
DEPRECIATION AND INVESTMENT ALLOWANCES

	Investment Allowance		Total
	Responsive	Not Responsive	
Responsive	5	0	5
Not Responsive	4	44	48
Total	9	44	53

Not analysed: One firm which answered that question 16D was not applicable. This firm was not responsive to special depreciation allowance.

responsive to the investment allowance. The four firms which were responsive to the investment allowance only are of particular interest. In an attempt to explain their answers a wide range of relationships is studied in Appendix K. Within the confines of data collected, no statistically significant reason could be found for the four firms which were responsive to the investment allowance and not to special depreciation allowance. In a previous chapter we saw that a ten per cent investment allowance increased the present value of capital expenditure proposals by a larger amount than a twenty per cent special depreciation allowance.<sup>6</sup> This difference was more significant for short life proposals and for those qualifying for high rates of ordinary depreciation. The four firms may find that the investment allowance is of sufficient size to have a marginal influence whereas special depreciation allowance may have too small an impact to influence the timing of their capital expenditure.

#### Size and Growth of Participants

To determine whether the effect of special depreciation allowance on the timing of capital expenditure was related to the size of participants Table XI-2 was prepared. Those firms which owned plant and machinery with an accumulated cost of less than \$5 millions on 31 December, 1971 or nearest balance date are classified as small firms. Other firms are termed large firms.

Although four small firms were responsive to special depreciation allowance, whereas no large firms were responsive, small firms were not significantly more

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<sup>6</sup>See Chapter IX, pages 207-209.

responsive ( $p = 0.08$ ).

TABLE XI-2

RESPONSIVENESS TO THE TIMING EFFECT OF SPECIAL  
DEPRECIATION ALLOWANCE: CLASSIFIED BY SIZE OF PARTICIPANTS

	Size of Participants		Total
	Small	Large	
Responsive	4	0	4
Not Responsive	24	24	48
Total	28	24	52

Not analysed: Two firms the size of which is unknown. One of these firms was responsive.

A similar analysis for the investment allowance is presented in Table XI-3. Differences in the responsiveness of small and large firms to the investment allowance are

TABLE XI-3

RESPONSIVENESS TO THE TIMING EFFECT OF INVESTMENT  
ALLOWANCE: CLASSIFIED BY SIZE OF PARTICIPANTS

	Size of Participants		Total
	Small	Large	
Responsive	6	2	8
Not Responsive	21	22	43
Total	27	24	51

Not analysed: Two firms the size of which is unknown and one firm which answered that the investment allowance was not applicable. One of these firms was responsive.

also related to chance ( $p = 0.15$ ).<sup>7</sup>

Participants in the survey were classified into two growth groups. Those companies which increased the accumulated cost of plant and machinery during the five year period ended 31 December, 1971 or nearest balance date by less than seventy-five per cent of the accumulated cost of plant and machinery owned on 31 December, 1966 or nearest balance date were termed slow growth companies. In Table XI-4 responsiveness to special depreciation of slow and fast growth companies is compared. The four responsive firms were fast growing. The results reveal that fast growing firms were more responsive to the timing effect of special depreciation allowance than were slow growing firms ( $p = 0.04$ ).

TABLE XI-4  
RESPONSIVENESS TO THE TIMING EFFECT OF SPECIAL DEPRECIATION  
ALLOWANCE: CLASSIFIED BY GROWTH OF PARTICIPANTS

	Growth of Participants		Total
	Slow	Fast	
Responsive	0	4	4
Not Responsive	26	19	45
Total	26	23	49

Not analysed: Two companies the growth of which is unknown and three companies which answered that question 4(c) was not applicable. One of the former companies was responsive.

A similar analysis for the investment allowance is presented in Table XI-5. Unlike special depreciation, there

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<sup>7</sup> $\chi^2$  (corrected) equals 2.13, df. equals one.

is little doubt that firms which grew at a fast rate were no more responsive to this allowance than were those which grew at a slow rate.<sup>8</sup>

TABLE XI-5  
RESPONSIVENESS TO THE TIMING EFFECT OF INVESTMENT  
ALLOWANCE: CLASSIFIED BY GROWTH OF PARTICIPANTS

	Growth of Participants		Total
	Slow	Fast	
Responsive	4	4	8
Not Responsive	22	18	40
Total	26	22	48

Not analysed: Two companies the growth of which is unknown and three companies which answered that question 4(c) was not applicable. One of the former companies was responsive.

#### The Flexibility of Capital Expenditure Plans

To determine whether the responsiveness to the timing effect of special depreciation or investment allowance was independent of the length of forward programme for the purchase of significant items of plant and machinery, or the postponement or advancement of the planned purchase of significant items of plant and machinery, a number of correlations was examined. These are discussed in Appendix L. It was found that there was no statistically significant relationship between the answers given to questions 16A(i) and 16D and the variables given above.

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<sup>8</sup>  $\chi^2$  (corrected) equals 0.02, df. equals one.

Liquidity and the Rate of Return

To test whether liquidity was a significant factor in determining the effect of special depreciation on the timing of capital expenditure, the answers given to question 16A(i) are classified by the most significant advantage of this allowance (see question twenty-four). Fifty-four companies answered question twenty-four. One participant, which does not claim special depreciation answered that the question was not applicable. Eighty per cent of the participants answered that increased liquidity was the most important advantage of special depreciation. Seven per cent were of the opinion that an increased rate of return was the most important advantage of the allowance and a similar percentage answered that the rate of return and liquidity were equally important to their companies. Six per cent gave other advantages. The null hypothesis that responsiveness to the timing effect of special depreciation is not related to the most significant advantage of that allowance, cannot be rejected. Thus companies which

TABLE XI-6  
RESPONSIVENESS TO THE TIMING EFFECT OF SPECIAL  
DEPRECIATION ALLOWANCE: CLASSIFIED BY THE MOST  
SIGNIFICANT ADVANTAGE OF SPECIAL DEPRECIATION ALLOWANCE

	Most Significant Advantage of Special Depreciation		Total
	Liquidity	Other	
Responsive	3	2	5
Not Responsive	39	9	48
Total	42	11	53

Not analysed: One firm which answered that question twenty-four was not applicable.

answered that increased liquidity was the most significant advantage of special depreciation were no more responsive to that allowance than were firms which answered that alternative advantages were more important (see Table XI-6).<sup>9</sup>

The three firms which were responsive to the timing effect of special depreciation and answered that the most significant advantage of special depreciation was increased liquidity might have been expected to answer that insufficient finance was the most significant constraint on further capital expenditure (see question fifteen). However, two of these companies answered that an inadequate rate of return on projects considered was the most significant constraint on further capital expenditure. The third firm answered that insufficient finance was the most significant constraint.

From Table XI-7 it can be seen that four of the five firms which were responsive to the timing effect of special depreciation answered that an inadequate rate of return on capital expenditure projects considered was the most significant constraint on further capital expenditure. In contrast, eleven of the thirty-four non-responsive firms gave a similar answer to question fifteen. These differences are statistically significant ( $p < 0.05$ ).<sup>10</sup> Thus we may conclude that firms which answered that an inadequate rate of return on capital expenditure projects considered was the most significant constraint on further capital expenditure were more responsive to the timing effect of special depreciation

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<sup>9</sup>  $\chi^2$  (corrected) equals 0.34, df. equals one.

<sup>10</sup>  $\chi^2$  (corrected) equals 4.24, df. equals one.

allowance than were other firms.

TABLE XI-7  
RESPONSIVENESS TO THE TIMING EFFECT OF SPECIAL  
DEPRECIATION ALLOWANCE: CLASSIFIED BY THE MOST  
SIGNIFICANT CONSTRAINT ON FURTHER CAPITAL EXPENDITURE

	Constraint on Capital Expenditure		Total
	Rate of Return	Other	
Responsive	4	1	5
Not Responsive	11	33	44
Total	15	34	49

Not analysed: Five firms with no significant constraint.

The responsiveness of participants to the investment allowance is classified by the most significant constraint on further capital expenditure in Table XI-8. Unlike the responsiveness to special depreciation, firms which had a rate of return constraint were no more responsive to the investment allowance than were other firms.<sup>11</sup>

Given that firms which answered that an inadequate rate of return on capital expenditure projects considered were more responsive to special depreciation allowance than were other firms, it was expected that a similar result would apply in the case of investment allowance. First, a ten per cent investment allowance generally increases the present value of capital expenditure proposals by a larger amount than does a twenty per cent special depreciation

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<sup>11</sup> $\chi^2$  (corrected) equals 0.31, df. equals one.

allowance.<sup>12</sup> Secondly, the accounting rate of return and payback period capital expenditure decision techniques are less sensitive to special depreciation than to investment allowance.<sup>13</sup> The four firms which were responsive to investment allowance and not to special depreciation answered that insufficient finance was the most significant constraint on further capital expenditure. Consequently, the tabulation given in Table XI-8 does not reveal a statistically significant result.

TABLE XI-8  
RESPONSIVENESS TO THE TIMING EFFECT OF INVESTMENT  
ALLOWANCE: CLASSIFIED BY THE MOST SIGNIFICANT  
CONSTRAINT ON FURTHER CAPITAL EXPENDITURE

	Constraint on Capital Expenditure		Total
	Rate of Return	Other	
Responsive	4	5	9
Not Responsive	11	28	39
Total	15	33	48

Not analysed: Five firms with no significant constraint and one firm which answered that the investment allowance was not applicable.

#### Capital Expenditure Decision Techniques

Question thirty requested companies which answered the original questionnaire to indicate which capital expenditure decision techniques (if any) were used in selecting proposals. From the tabulated answers it can be seen that the accounting

<sup>12</sup>See Chapter IX, pages 207-209.

<sup>13</sup>See Chapter IX, pages 218-220.

rate of return, which was used by seventy-two per cent of the forty-six participants, was the most commonly used method. This method does not recognise the time value of money and is less sensitive to special depreciation and investment allowances than discounted cash flow methods. The payback period and the internal rate of return were more frequently used than the net present value method. Eleven per cent of the firms did not employ any recognised capital expenditure decision techniques, and thirty-seven per cent used one method. Some of the firms using more than one method use different methods for varying types of proposals.

The general results suggest that taxation incentives and concessions have not resulted in the majority of firms employing those techniques which highlight the effect of differing amounts and the timing of taxation on the relative merits of proposals.

Two firms which were responsive to special depreciation allowance employed at least one discounted cash flow decision technique. A further firm, which used the accounting rate of return and the payback period, may include the influence of special depreciation allowance in selecting capital expenditure proposals. This firm charges and claims ordinary and special depreciation on certain plant and machinery and charges ordinary tax rates of depreciation on other items of plant and machinery while claiming ordinary and special depreciation. The effect of special depreciation on the selection of proposals therefore depends on whether special depreciation is charged in determining the accounting rate of return and on whether proposals are evaluated on an after-tax or a pre-tax basis.

One other responsive firm did not use any recognised capital expenditure decision techniques. Thus it is most unlikely that this allowance influences the nature or type of proposals selected or is a marginal factor in capital expenditure decisions. The withdrawal of the allowance, via its effect on liquidity, may however, be sufficient to support the firm's responsiveness to the timing effect of special depreciation.

In Table XI-9 the relationship between the answers given to question 16A(i) and the capital expenditure decision techniques used by firms is presented. Firms using two or more methods have been classified as if each method were used by a separate firm. The three firms which were responsive to special depreciation and answered question

TABLE XI-9  
RESPONSIVENESS TO THE TIMING EFFECT OF SPECIAL  
DEPRECIATION: CLASSIFIED BY CAPITAL EXPENDITURE  
DECISION TECHNIQUES EMPLOYED

	Capital Expenditure Decision Techniques		Total
	Discounted Cash Flow	Other	
Responsive	3	6	9
Not Responsive	32	50	82
Total	35	56	91

Number analysed: Three responsive and thirty-eight non-responsive firms.

Not analysed: Five firms using no recognised decision techniques, one of which was responsive, and nine companies which completed the brief questionnaire only. One of the latter was responsive.

thirty of the original questionnaire used a total of nine techniques. The thirty-eight non-responsive firms used a total of eighty-five methods. The results disclose no significant relationship between responsiveness to the timing effect of special depreciation and the decision techniques used ( $p > 0.05$ ).<sup>14</sup>

A similar analysis relating to the responsiveness to the investment allowance is presented in Table XI-10. As with special depreciation allowance, no significant relationship was found.<sup>15</sup>

TABLE XI-10  
RESPONSIVENESS TO THE TIMING EFFECT OF INVESTMENT  
ALLOWANCE: CLASSIFIED BY CAPITAL EXPENDITURE  
DECISION TECHNIQUES EMPLOYED

	Capital Expenditure Decision Techniques		Total
	Discounted Cash Flow	Other	
Responsive	7	9	16
Not Responsive	28	46	74
Total	35	55	90

Number analysed: Seven responsive and thirty-seven non-responsive firms.

Not analysed: Five firms using no recognised techniques, one of which was responsive, and nine companies which completed the brief questionnaire only. One of the latter was responsive.

<sup>14</sup> $\chi^2$  (corrected) equals zero, df. equals one.

<sup>15</sup> $\chi^2$  (corrected) equals 0.02, df. equals one.

In addition to capital expenditure decision techniques, there may be a relationship between the responsiveness to these allowances and whether proposals are evaluated on a pre-tax or after-tax basis. To investigate this possibility Tables XI-11 & XI-12 present the appropriate results relating to special depreciation and investment allowance respectively.

The differences between the proportion of firms using an after-tax basis which were responsive to special depreciation and those falling into other categories relates

TABLE XI-11  
RESPONSIVENESS TO THE TIMING EFFECT OF SPECIAL  
DEPRECIATION ALLOWANCE: CLASSIFIED BY THE  
EVALUATION OF CAPITAL EXPENDITURE PROPOSALS ON  
AN AFTER-TAX OR PRE-TAX BASIS

	Basis of Evaluating Capital Expenditure Proposals		Total
	After-tax <sup>1</sup>	Pre-tax	
Responsive	2	1	3
Not Responsive	29	9	38
Total	31	10	41

<sup>1</sup>Includes those companies which answered that proposals are evaluated on a pre-tax and an after-tax basis.

Number analysed: Forty firms. One firm, which used a pre-tax basis for the payback period and an after-tax basis for other methods, has been included in both classifications.

Not analysed: Five firms which use no recognised decision techniques (one of which was responsive) and nine companies which completed the brief questionnaire only. One of the latter was responsive.

TABLE XI-12  
RESPONSIVENESS TO THE TIMING EFFECT OF INVESTMENT  
ALLOWANCE: CLASSIFIED BY THE EVALUATION OF CAPITAL  
EXPENDITURE PROPOSALS ON AN AFTER-TAX OR PRE-TAX BASIS

	Basis of Evaluating Capital Expenditure Proposals		Total
	After-tax <sup>1</sup>	Pre-tax	
Responsive	5	2	7
Not Responsive	25	8	33
Total	30	10	40

<sup>1</sup>Includes those companies which answered that proposals are evaluated on a pre-tax and after-tax basis.

Not analysed: Five firms which use no recognised decision techniques (one of which was responsive) and nine companies which completed the brief questionnaire only. One of the latter was responsive.

to chance.<sup>16</sup> Similarly, differences relating to the analysis of responsiveness to investment allowance classified by the treatment of taxation in evaluating capital expenditure proposals revealed no statistically significant results.<sup>17</sup>

One company which was responsive to the timing effect of special depreciation and investment allowances and evaluated capital expenditure proposals on a pre-tax basis stated that this basis was used because of :

"Fluctuations in rates and amounts of taxation payable",

and because :

"The directors examine the pre-tax profit of proposals".

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<sup>16</sup> p equals 0.85.

<sup>17</sup>  $\chi^2$  (corrected) equals 0.06, df equals one

This answer is surprising, especially as the firm indicated that cost-plus pricing was the most important pricing method. If taxation is explicitly excluded in evaluating capital expenditure proposals for the reason that the rate and amount fluctuates, it is impossible for the availability of taxation concessions and incentives to influence the ranking, nature and acceptance or rejection of proposals.

A further firm, which was responsive to the timing effect of the investment allowance and which evaluated capital expenditure proposals on a pre-tax basis, did not answer the question requesting a reason for using this basis. Both of the companies which evaluated proposals on a pre-tax basis used capital expenditure techniques which are less sensitive to taxation concessions and incentives than discounted cash flow methods.

From the above we can see that of the five firms which answered "Yes" to question 16A(i), one did not use any recognised capital expenditure decision techniques and one other company evaluated capital expenditure proposals on a pre-tax basis. After allowing for one company which completed the brief questionnaire we are left with two firms which were responsive to the timing effect of special depreciation allowance and which employ discounted cash flow techniques on an after-tax basis. In addition to the above four firms, three firms which were responsive to the timing effect of the investment allowance used discounted cash flow methods on an after-tax basis and one firm used the accounting rate of return technique on a pre-tax basis.

The above summary questions the extent to which some

responsive firms are directly influenced by the availability of special depreciation and investment allowances. These firms may, however, be indirectly influenced by the fact that increased liquidity makes possible capital expenditure proposals which might otherwise be deferred or abandoned.

The Adequacy of Taxation Rates of Depreciation  
and the Method of Accounting for Depreciation

To determine if a firm's view of the adequacy of ordinary tax rates of depreciation on plant and machinery for the purposes of providing for fair wear and tear, and for obsolescence, influenced its answer to question 16A(i), Table XI-13 was prepared (see question 7(a)). Four of the firms which were responsive to special depreciation answered that ordinary tax rates were inadequate. These

TABLE XI-13  
RESPONSIVENESS TO THE TIMING EFFECT OF SPECIAL  
DEPRECIATION: CLASSIFIED BY THE ADEQUACY OF  
ORDINARY TAX RATES OF DEPRECIATION

	Ordinary Tax Rates of Depreciation		Total
	Adequate	Inadequate	
Responsive	1	4	5
Not Responsive	22	27	49
Total	23	31	54

results are not statistically significant ( $p > 0.05$ ).<sup>18</sup>

The method of accounting for depreciation may influence the firm's view of the extent of the benefit received from special depreciation allowance. To investigate this possibility, the responsiveness of firms to the timing effect of special depreciation allowance is analysed by the method of accounting for the depreciation of plant and machinery. Owing to the small expected frequencies for a number of the methods given in question twenty-five, it has been necessary to aggregate the results. Those firms charging and claiming maximum rates of ordinary and special depreciation form the first group and the remainder of firms form the second classification (see Table XI-14).<sup>19</sup> The majority of companies included in the latter classification amended their depreciation policy between 1962 and 1972, whereas the former group includes those firms which have adopted taxation rates of depreciation for financial reporting purposes.

Firms which charge and claim the same amount of depreciation were no less responsive to the timing effect of special depreciation than were other firms.<sup>20</sup>

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<sup>18</sup> $\chi^2$  (corrected) equals 0.03, df. equals one. Note that if the answers to question 7(b) are analysed in place of those to 7(a), four responsive firms answered that ordinary and special tax rates of depreciation were at least adequate. These firms were no more responsive to special depreciation than were other firms,  $\chi^2$  (corrected) equals 0.01, df. equals one.

<sup>19</sup>Firms using more than one method, such that both classifications are applicable, have been included in both groups.

<sup>20</sup> $\chi^2$  (corrected) equals 0.11, df. equals one. A similar analysis for the investment allowance is not necessary as all firms benefiting from that allowance use the same method of accounting for the tax saving (see the tabulated answers to question twenty-three).

TABLE XI-14  
RESPONSIVENESS TO THE TIMING EFFECT OF SPECIAL  
DEPRECIATION: CLASSIFIED BY THE METHOD OF ACCOUNTING  
FOR DEPRECIATION ON PLANT AND MACHINERY

	Method of Accounting for Depreciation		Total
	Claim and Charge Ordinary and Special Tax Rates	Other	
Responsive	4	3	7
Not Responsive	28	22	50
Total	32	25	57

Number analysed: Fifty-two.

Not analysed: Two firms which did not answer question twenty-five.

Further Questions on the Timing Effect of the  
Investment Allowance

As the investment allowance was withdrawn in 1966 and re-introduced in 1970, greater flexibility in formulating questions was possible. Some additional questions, relating to the timing effect of these changes on the planned purchase of new manufacturing plant and machinery, are discussed below.

Question nineteen sought to determine the extent to which the withdrawal of the investment allowance in 1966 resulted in the postponement of the planned purchase of new plant and machinery. Of the forty-five firms which answered this question, one small, fast growing firm indicated that it had postponed the planned purchase of plant and machinery as a result of the withdrawal of the investment allowance. This firm was responsive to the timing effect of special

depreciation and investment allowances in the year ended 31 December, 1971 or nearest balance date.

Seven firms indicated in question twenty-one that the planned purchase of plant and machinery had been advanced as a result of the re-introduction of the investment allowance in 1970. Six of these firms answered "Yes" to question 16D. Two firms which were responsive to the timing effect of investment allowance (question 16D) did not advance the planned purchase of plant and machinery as a result of the re-introduction of investment allowance in 1970 (see Table XI-15). As one would expect, there is a statistically significant relationship between answers given to question 16D and twenty-one ( $p < 0.001$ ).<sup>21</sup>

TABLE XI-15  
RESPONSIVENESS TO THE TIMING EFFECT OF INVESTMENT  
ALLOWANCE AS SHOWN BY ANSWERS TO QUESTIONS  
16D AND TWENTY-ONE

	Responsiveness to Re-introduction of Investment Allowance (Question twenty-one)		Total
	Responsive	Not Responsive	
Responsive	6	2	8
Not Responsive	1	36	37
Total	7	38	45

Not analysed: Nine firms which completed the brief questionnaire only and one firm which did not answer question 16D. The latter was responsive to the timing effect of the re-introduction of investment allowance (see question twenty-one).

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<sup>21</sup> $\chi^2$  (corrected) equals 21.95, df. equals one.

Selected Taxation Concessions

The original questionnaire sought data on the effect on timing of capital expenditure of certain taxation concessions in addition to the general special depreciation and investment allowances. Most of these allowances apply to particular industries or to specific types of assets.

Although most participants answered that the following allowances were not applicable, they could have qualified for the relevant allowances without changing the nature of their activities;

- A (ii) Special depreciation on employee accommodation,
- B (v) Additional depreciation on plant and machinery or equipment used for scientific research,
- E West Coast investment allowance, and
- G Research grants.

The "not applicable" answer in relation to the above allowances might appropriately be re-classified and included with those firms which answered "No" to the relevant parts of question sixteen. In this case, it may be concluded that these allowances did not affect the timing of the acquisition of qualifying assets. This result is highly significant in respect of each allowance listed above ( $p < 0.001$ ).

Three other allowances included in question sixteen are available to taxpayers who acquire the relevant assets. These are special depreciation on cool stores for meat or meat products (A (iii)), additional depreciation on buildings used for processing or storage of fish or fish products (B (vi)) and deduction of forestry development expenditure.

The first two allowances were extended to companies other than those engaged in the relevant industry from 1 April, 1970. Consequently, most participants would have been unable to acquire, erect or extend qualifying assets during the year ended 31 December, 1971 or nearest balance date. For this reason, the not applicable answers given to questions 16A (iii) and 16B (vi) by companies not engaged in the meat freezing or fishing industries respectively are not re-classified. Furthermore, most companies would have had to undertake new activities in order to qualify for these allowances and for deduction of forestry development expenditure (F).

The not applicable answers to the following allowances indicate that the relevant concessions are not considered to be of sufficient importance and magnitude to result in firms undertaking those activities which qualify for the allowances;

- A (iii) Special depreciation on cool stores for meat or meat products,
- A (iv) Special depreciation on hotels providing tourist accommodation,
- B (vi) Additional depreciation on buildings used for processing or storage of fish or fish products,
- C Supplementary depreciation on hotels and motels,
- F Deduction of forestry development expenditure.

The very large number of not applicable answers given to the above parts of question sixteen suggest that the

relevant allowances may not be achieving their objective of attracting additional firms to the relevant activities.

A large company which was not responsive to other allowances built a larger hotel than would otherwise have been erected in order to qualify for the special depreciation allowance on tourist accommodation (see question 16A (iv)). Additional depreciation on plant and machinery used for scientific research and research grants influenced the timing of the acquisition of qualifying assets of one company. This participant was also responsive to the general special depreciation and investment allowances. The West Coast development allowance, which is an additional ten per cent investment allowance, influenced the timing of capital expenditure undertaken by a firm which was also responsive to the general investment allowance.

#### SUMMARY

Of the forty-five companies completing question sixteen of the original questionnaire nine were responsive to one or more of the allowances discussed in this chapter. The nine companies which completed the brief questionnaire were requested to answer the equivalent of questions 16A (i) and 16D only. One of these companies was responsive to both allowances.

The nine participants which acquired plant and machinery at an earlier date than would have been the case if the investment allowance had not been available accounted for eleven per cent (\$8.5 millions) of the total capital expenditure on plant and machinery of the fifty-one companies which answered question five. The five firms which were also responsive to special depreciation accounted for \$3.7 millions

of the capital expenditure on plant and machinery. When allowance is made for the fact that some of the above expenditure would not be influenced by the availability of the allowances, it is clear that the timing of a very small percentage of the total capital expenditure on plant and machinery was influenced by the allowances under study in the year ended 31 December, 1971.

Firms which were subject to a rate of return constraint on further capital expenditure were more responsive to special depreciation allowance than were other firms. Fast-growth companies were also more responsive than others to special depreciation allowance. Although a wide range of other relationships was investigated, the responsiveness of firms to the timing effect of special depreciation and investment allowances was found to be independent of all of them.

A number of allowances which are specific to certain industries or assets were also included in question sixteen of the original questionnaire. The data collected on these allowances suggests that they did not have a significant effect on the timing of qualifying capital expenditure.

The above results relate to the fifty-four companies which answered the relevant questions. Owing to the selection procedures and the fact that information on non-participants is not available, it would be unwise to assume that these results apply to non-participants or companies in general. Further research would be necessary to determine whether the above conclusions apply to companies in general.

CHAPTER XII  
THE DIRECT EFFECT OF SPECIAL DEPRECIATION AND  
INVESTMENT ALLOWANCES ON THE VALUE OF CAPITAL  
EXPENDITURE PROJECT APPROVALS

ABSTRACT

If special depreciation allowance had been suspended for a period of three to four years from 31 December, 1970 or nearest balance date, it is estimated that the value of capital expenditure projects approved (other than major projects) by participants in the year ended 31 December, 1971 or nearest balance date would have decreased by 1.6 per cent. The equivalent percentage decrease in the value of capital expenditure approvals, given the suspension of the investment allowance, was two per cent. In both cases, only seven of the participants answered that the value of minor capital expenditure projects approved would have been less than actual approvals. The abolition of either of these allowances would have decreased the value of capital expenditure projects approved by less than 1.4 per cent of actual approvals.

Given the suspension of these allowances three firms would have delayed major capital expenditure projects. The abolition of the investment allowance would have resulted in the delay of major projects by two firms and abandonment by one. The abolition of special depreciation allowance would have resulted in three firms delaying major capital expenditure projects.

The effect of suspending or abolishing nine other concessions or incentives is examined. Participants were responsive to two of these in respect of other than major projects and one in the case of major projects.

The responsiveness of firms to the above allowances is independent of a large number of variables examined.

INTRODUCTION

The answers given to questions seventeen and eighteen are analysed in this chapter.<sup>1</sup> The first part of the former

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<sup>1</sup>The empirical results presented in this chapter attempt to examine certain issues relating to the theoretical effects of special depreciation and investment allowances. These were discussed in Chapter IX. For a description of the methods used in conducting this survey see Appendix O. The tabulated answers to questions seventeen and eighteen are given on pages 571-572.

question requested participants to indicate the effect (if any) on the value of capital expenditure projects (other than major projects) approved during the year ended 31 December, 1971 or nearest balance date of suspending special depreciation allowance, investment allowance or certain other incentives and concessions for a period of three to four years. In respect of major projects, companies were requested to answer whether projects of this type would have been delayed or abandoned. Question eighteen was similar to question seventeen, except that it was assumed that the relevant allowances had been abolished rather than suspended.

These questions were designed to provide data which would enable the following question to be answered :

What would be the effect on the value of qualifying capital expenditure projects approved in the year ended 31 December, 1971 or nearest balance date of suspending for three to four years, or abolishing, special depreciation, investment allowance and certain other concessions and incentives with effect from 31 December, 1970 or nearest balance date?

Companies which answered that the value of capital expenditure projects approved in the relevant year would have been less than the value of projects actually approved if special depreciation allowance had been suspended for three to four years are termed "responsive" to the suspension of that allowance. Firms which would have reduced the value of capital expenditure approvals as a result of the abolition of special depreciation allowance are termed "responsive" to the abolition of that allowance. Similar terminology is used in relation to the suspension or abolition of the investment

allowance and certain other incentives and concessions.

Of the fifty-five companies which completed the questionnaire, two did not answer question seventeen or eighteen. One other firm answered that the questions relating to special depreciation allowance were not applicable.<sup>2</sup> Two firms gave a similar answer in relation to the question on investment allowance.<sup>3</sup> For these reasons, the analysis is based on fifty-two answers to questions on the abolition or suspension of special depreciation allowance and fifty-one answers to similar questions in relation to investment allowance.

The analysis given below is similar to that of the previous chapter. First, we discuss the effect of the suspension or abolition of special depreciation or investment allowance on other than major capital expenditure projects. Secondly, the effect of the above policy changes on the approval of major capital expenditure projects is analysed and thirdly, we examine the effect of the suspension or abolition of certain other incentives and concessions on the value of capital expenditure projects approved in the relevant year.

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<sup>2</sup>This firm does not claim special depreciation allowance.

<sup>3</sup>In the year ended 31 December, 1971 or nearest balance date, the activities undertaken by these firms did not qualify for the investment allowance.

THE DIRECT EFFECT OF THE SUSPENSION OR ABOLITION OF SPECIAL DEPRECIATION OR INVESTMENT ALLOWANCE ON THE VALUE OF CAPITAL EXPENDITURE PROJECTS APPROVED, OTHER THAN MAJOR PROJECTS<sup>4</sup>

General Results

From the tabulated answers to question 17A(1) the reader will see that forty-five (86.5 per cent) of the fifty-two companies which answered that question would not have decreased (or increased) the value of capital expenditure projects approved during the year ended 31 December, 1971 or nearest balance date, given that special depreciation allowance had been suspended for a period of three to four years with effect from 31 December, 1970. Seven companies (13.5 per cent) answered that the value of capital expenditure proposals approved would have decreased. The null hypothesis, that there is no difference in those companies which answered that the value of capital expenditure approvals would have been the same and those companies which answered that the value of approvals would have decreased, is rejected ( $p < 0.001$ ).<sup>5</sup> A similar question in relation to the investment allowance (17A(2)) revealed that 86.3 per cent of the participants (forty-four) would not have decreased the value of capital expenditure projects approved. The remaining seven companies answered that the value of their capital expenditure projects approved in the year ended 31 December, 1971 or nearest balance date would have decreased, had the investment

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<sup>4</sup> For the purposes of the questionnaire a major capital expenditure project was defined as one which would substantially alter the size or nature of the participant.

<sup>5</sup> As there was no reason to expect the value of capital expenditure projects approved to increase on the suspension or abolition of the allowances discussed in this chapter, a one-tailed test of significance has been used.

allowance been suspended. This result is also highly significant ( $p < 0.001$ ).

The seven firms which were responsive to the suspension of the investment allowance were also responsive to the suspension of special depreciation. Three responsive companies answered that the suspension of these allowances would result in a decrease in the value of capital expenditure approvals of less than five per cent. Although three other firms answered that the decrease would be between five and ten per cent, different firms gave this answer for the suspension of special depreciation and investment allowances. One participant indicated that the suspension of the investment allowance would have reduced the value of its capital expenditure approvals by about twenty per cent. A different firm answered that suspension of special depreciation allowance would have had a similar effect.

Assuming that capital expenditure approvals were reduced by the maximum percentage given for each class, the suspension of special depreciation allowance would have reduced capital expenditure approvals in the year ended 31 December, 1971 or nearest balance date by approximately \$1.2 millions. This represents 1.6 per cent of the capital expenditure incurred on plant and machinery by fifty-one firms which answered question five. The equivalent amount for the investment allowance is \$1.5 millions or two per cent of the capital expenditure on plant and machinery.

From the tabulated answers to questions 18A(1) and 18A(2) it will be seen that five firms (ten per cent) were responsive to the abolition of special depreciation and the investment allowance. As with questions 17A(1) and 17A(2),

the same firms were responsive to the abolition of both allowances. These results are highly significant ( $p < 0.001$ ).

Of the five firms which were responsive to the abolition of special depreciation and investment allowances, one was of the view that the abolition of these allowances would decrease the value of capital expenditure approvals by up to five per cent of actual approvals. Three firms indicated that the value of capital expenditure approvals would fall by between five and ten per cent and one firm answered that the value of its capital expenditure approvals would decrease by twenty per cent. The abolition of the investment allowance would have reduced the value of capital expenditure projects approved by one firm by fifteen per cent.

The decrease in the value of capital expenditure projects approved in the year ended 31 December, 1971 which would have resulted from the abolition of special depreciation or the investment allowance is estimated to be \$1 million.<sup>6</sup> Four of the five firms which were responsive to the abolition of special depreciation and investment allowances were also responsive to the suspension of those allowances (see Tables XII-1 and XII-2). One firm, which was not responsive to the suspension of special depreciation or the investment allowance, was responsive to the abolition of those allowances. Of the three firms which were responsive to the suspension of special depreciation and investment allowances, but were not responsive to the abolition of those allowances, one was also responsive to the timing effect of special depreciation and investment allowances (see question sixteen). Two other

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<sup>6</sup>In Appendix M a method is suggested which might be used to estimate the amount of net output which would be forgone if investment allowance were suspended or abolished.

companies which were responsive to the suspension of special depreciation and investment allowances were not responsive to the abolition or the timing effects of these allowances.

TABLE XII-1  
RESPONSIVENESS TO THE SUSPENSION OF SPECIAL DEPRECIATION ALLOWANCE: CLASSIFIED BY RESPONSIVENESS TO THE ABOLITION OF THAT ALLOWANCE

Suspension	Abolition		Total
	Responsive	Not Responsive	
Responsive	4	3	7
Not Responsive	1	44	45
Total	5	47	52

TABLE XII-2  
RESPONSIVENESS TO THE SUSPENSION OF INVESTMENT ALLOWANCE: CLASSIFIED BY RESPONSIVENESS TO THE ABOLITION OF THAT ALLOWANCE

Suspension	Abolition		Total
	Responsive	Not Responsive	
Responsive	4	3	7
Not Responsive	1	43	44
Total	5	46	51

Five companies which were not responsive to the abolition or suspension of special depreciation or investment allowance

added explanations of their answers. One company, which has been in a tax loss position for some time, stated that incentives and concessions working through the tax system did not affect its capital expenditure decisions as the benefits from tax losses carried forward were remote.

A very large company which is engaged in a major capital expenditure programme wrote that :

All recent projects as well as current ones are part of a five-year plan for which finance had been arranged or planned. Loss of these allowances would not have restricted our programme to date but would have reduced funds available for further expansion.

Although expected taxation savings arising from incentives were taken into account in planning finance for capital expenditure projects for a five year period, the loss of these incentives would have resulted in the firm drawing on contingent sources of finance. Consequently, it would not be necessary for the company to abandon or delay its projects. However, the aggregate amount of finance available at the end of the present five-year plan would be less than otherwise. For this reason, the firm might be unable to adopt all of the proposals which would otherwise be undertaken in the next five year period.

A prominent company director suggested that capital expenditure was dependent on the availability of finance and that tax savings in a given year would affect the amount of capital expenditure undertaken in a future period. This view was also supported by an executive who took part in the formal testing of the draft questionnaire. The amount of capital expenditure undertaken by the relevant company was limited by the amount of finance available.

Although special depreciation and investment allowances

claimed in the current period may have an indirect effect on the amount and timing of capital expenditure undertaken in a later period via their effect on liquidity, the importance of this effect is unknown. Furthermore, the indirect nature of this effect suggests that monetary policy and changes in the level of company taxation might be more effective and less discriminatory.

One other firm, which does not claim special depreciation, wrote in respect of the investment and other allowances included in questions seventeen and eighteen that :

Our forward planning of projects ignores items of temporary tax relief.

This comment is surprising as the company is in a capital intensive industry and is about to undertake a major expansion. If taxation incentives and concessions are ignored in forward planning, then it is impossible for these allowances to influence the nature, timing and amount of capital expenditure.

The fifth company added that a period of three to four years in question seventeen was too long to delay capital expenditure projects. This suggests that the company may have given a different answer had special depreciation or the investment allowance been suspended for a shorter period. It is not known how many other companies might have been prepared to delay projects if the allowance were suspended for a shorter period.

Although the above comments are of interest in interpreting the answers given, no reasonable assumption can be made as to whether or not they are typical of companies which were not responsive to the suspension or abolition of special depreciation or investment allowance.

The Significance of Size and Growth of Participants

The effect of the suspension of special depreciation allowance or investment allowance on the value of capital expenditure approved in the year ended 31 December, 1971 or nearest balance date is classified by the size of participants in Tables XII-3 & XII-4. Of the twenty-three large firms, three were responsive to the suspension of special depreciation allowance compared with four of the twenty-seven small firms. This result is not statistically significant ( $p > 0.05$ ).<sup>7</sup> A similar analysis relating to the suspension of the investment allowance revealed that the answers given by participants were independent of size.<sup>8</sup>

TABLE XII-3  
RESPONSIVENESS TO THE SUSPENSION OF SPECIAL DEPRECIATION  
ALLOWANCE: CLASSIFIED BY SIZE OF PARTICIPANTS

	Size of Participants		Total
	Small	Large	
Responsive	4	3	7
Not Responsive	23	20	43
Total	27	23	50

Not analysed: Two companies the size of which is unknown. Both were not responsive.

<sup>7</sup>  $X^2$  (corrected) equals 0.05, df. equals one.

<sup>8</sup>  $X^2$  (corrected) equals zero, df. equals one.

TABLE XII-4

RESPONSIVENESS TO THE SUSPENSION OF INVESTMENT ALLOWANCE:  
CLASSIFIED BY SIZE OF PARTICIPANTS

	Size of Participants		Total
	Small	Large	
Responsive	4	3	7
Not Responsive	21	21	42
Total	25	24	49

Not analysed: Two companies the size of which is unknown.  
Both were not responsive.

The answers given to questions 18A(1) and 18A(2) classified by the size of participants disclose that the effect of abolishing special depreciation or investment allowance is also unrelated to the size of companies (see Tables XII-5 & XII-6).<sup>9</sup>

TABLE XII-5

RESPONSIVENESS TO THE ABOLITION OF SPECIAL DEPRECIATION  
ALLOWANCE: CLASSIFIED BY SIZE OF PARTICIPANTS

	Size of Participants		Total
	Small	Large	
Responsive	3	2	5
Not Responsive	24	21	45
Total	27	23	50

Not analysed: Two companies the size of which is unknown.  
Both were not responsive.

<sup>9</sup> For special depreciation  $X^2$  (corrected) equals 0.03 and for the investment allowance  $X^2$  (corrected) equals zero. In both cases df. equals one.

TABLE XII-6  
RESPONSIVENESS TO THE ABOLITION OF INVESTMENT ALLOWANCE:  
CLASSIFIED BY SIZE OF PARTICIPANTS

	Size of Participants		Total
	Small	Large	
Responsive	3	2	5
Not Responsive	22	22	44
Total	25	24	49

Not analysed: Two firms the size of which is unknown.  
Both were not responsive.

The responsiveness of participants to the suspension of special depreciation or investment allowance is analysed by growth in Tables XII-7 and XII-8 respectively. The null hypothesis, that the responsiveness of firms to the suspension of these allowances is independent of the growth of participants, cannot be rejected.<sup>10</sup> A similar analysis in relation to the abolition of special depreciation or investment allowance is given in Tables XII-9 and XII-10. Differences revealed by these tables also relate to chance.<sup>11</sup>

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<sup>10</sup>For special depreciation  $X^2_2$  (corrected) equals 0.96 and for the investment allowance  $X^2_2$  (corrected) equals 1.15. In both cases df. equals one.

<sup>11</sup>For special depreciation  $X^2_2$  (corrected) equals 1.29 and for the investment allowance  $X^2_2$  (corrected) equals 1.10. In both cases df. equals one.

TABLE XII-7  
RESPONSIVENESS TO THE SUSPENSION OF SPECIAL DEPRECIATION  
ALLOWANCE: CLASSIFIED BY GROWTH OF PARTICIPANTS

	Growth of Participants		Total
	Slow	Fast	
Responsive	2	5	7
Not Responsive	23	17	40
Total	25	22	47

Not analysed: Three firms which answered that question 4(c) on their rate of growth was not applicable and two firms the growth of which is unknown. All of these firms were not responsive.

TABLE XII-8  
RESPONSIVENESS TO THE SUSPENSION OF INVESTMENT ALLOWANCE:  
CLASSIFIED BY GROWTH OF PARTICIPANTS

	Growth of Participants		Total
	Slow	Fast	
Responsive	2	5	7
Not Responsive	23	16	39
Total	25	21	46

Not analysed: Three firms which answered that question 4(c) on their rate of growth was not applicable and two firms the growth of which is unknown. All of these firms were not responsive.

TABLE XII-9

RESPONSIVENESS TO THE ABOLITION OF SPECIAL DEPRECIATION  
ALLOWANCE: CLASSIFIED BY GROWTH OF PARTICIPANTS

	Growth of Participants		Total
	Slow	Fast	
Responsive	1	4	5
Not Responsive	24	18	42
Total	25	22	47

Not analysed: Three firms which answered that question 4(c) on their rate of growth was not applicable and two firms the growth of which is unknown. All of these firms were not responsive.

TABLE XII-10

RESPONSIVENESS TO THE ABOLITION OF INVESTMENT ALLOWANCE:  
CLASSIFIED BY GROWTH OF PARTICIPANTS

	Growth of Participants		Total
	Slow	Fast	
Responsive	1	4	5
Not Responsive	24	17	41
Total	25	21	46

Not analysed: Three firms which answered that question 4(c) on their rate of growth was not applicable and two firms the growth of which is unknown. All of these firms were not responsive.

### The Flexibility of Capital Expenditure Plans

To determine if the responsiveness of firms to the suspension or abolition of special depreciation allowance or investment allowance was independent of the length of forward programme for the purchase of significant items of plant and machinery, or the postponement, abandonment or advancement of the planned purchase of significant items of plant and machinery, a number of correlations was examined. These are discussed in Appendix N. From the analysis presented, the responsiveness to the suspension or abolition of the allowances under study is found to be independent of the above variables.

### Constraint on Further Capital Expenditure

Question fifteen requested participants to indicate the most significant constraint on further capital expenditure during the year ended 31 December, 1971 or nearest balance date. Those companies which were of the view that two or more constraints were equally important were requested to indicate both constraints. From the answers given to this question, analyses were prepared to determine whether responsiveness to the suspension or abolition of special depreciation or investment allowance was independent of the nature of the constraint on further capital expenditure. Owing to the small number of firms which indicated that constraints other than a finance (15(i)) or an inadequate rate of return on proposals considered (15(ii)) were the most significant, some aggregation of answers was necessary. In Tables XII-11 to XII-14 answers to question fifteen are classified into two groups; those firms which answered that a finance constraint was the most

TABLE XII-11

RESPONSIVENESS TO THE SUSPENSION OF SPECIAL DEPRECIATION ALLOWANCE: CLASSIFIED BY THE MOST SIGNIFICANT CONSTRAINT ON FURTHER CAPITAL EXPENDITURE

	Most Significant Constraint		Total
	Finance	Other	
Responsive	5	3	8
Not Responsive	17	24	41
Total	22	27	49

Number analysed: 46.

Not analysed: Five firms with no significant constraint and one firm which did not answer question fifteen. All of these firms were not responsive.

TABLE XII-12

RESPONSIVENESS TO THE SUSPENSION OF INVESTMENT ALLOWANCE: CLASSIFIED BY THE MOST SIGNIFICANT CONSTRAINT ON FURTHER CAPITAL EXPENDITURE

	Most Significant Constraint		Total
	Finance	Other	
Responsive	3	3	6
Not Responsive	19	24	43
Total	22	27	49

Number analysed: 45.

Not analysed: Five firms with no significant constraint and one company which did not answer question fifteen. All of these firms were not responsive.

TABLE XII-13

RESPONSIVENESS TO THE ABOLITION OF SPECIAL DEPRECIATION ALLOWANCE: CLASSIFIED BY THE MOST SIGNIFICANT CONSTRAINT ON FURTHER CAPITAL EXPENDITURE

	Most Significant Constraint		Total
	Finance	Other	
Responsive	3	3	6
Not Responsive	19	24	43
Total	22	27	49

Number analysed: 46.

Not analysed: Five firms with no significant constraint, and one firm which did not answer question fifteen. All of these firms were not responsive.

TABLE XII-14

RESPONSIVENESS TO THE ABOLITION OF INVESTMENT ALLOWANCE: CLASSIFIED BY THE MOST SIGNIFICANT CONSTRAINT ON FURTHER CAPITAL EXPENDITURE

	Most Significant Constraint		Total
	Finance	Other	
Responsive	3	3	6
Not Responsive	18	24	42
Total	21	27	48

Number analysed: 45.

Not analysed: Five firms with no significant constraint, and one company which did not answer question fifteen. All of these firms were not responsive.

significant constraint and those indicating that some other constraint was the most significant. Firms which answered that a finance and some other constraint were equally important have been included in both groups. Five firms answered that there was no significant constraint on further capital expenditure. As these companies could not be appropriately included in either group, they have been excluded from the analyses.

The tables disclose that differences in the constraint applicable to responsive and not responsive companies relate to chance.<sup>12</sup>

#### Capital Expenditure Decision Techniques

In Tables XII-15 & XII-16 the responsiveness of firms to the suspension or abolition of each allowance under study is classified by the capital expenditure decision techniques employed. The tables disclose the number of methods used by responsive and not responsive firms. As an analysis of the answers of forty-three firms to questions 17A(1) and 30(a) gave the same tabulation as that of the forty-two firms which answered questions 17A(2) and 30(a), one table is presented. Similarly, an analysis of the responsiveness of firms to the abolition of both allowances classified by capital expenditure decision techniques employed produced the same tabulation.

The above analyses disclose that responsiveness to the abolition or suspension of special depreciation and investment allowances is independent of the capital expenditure decision

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<sup>12</sup>For the suspension of special depreciation and investment allowances  $X^2$  (corrected) equals 0.51 and 0.61 respectively. For the abolition of these allowances  $X^2$  (corrected) equals 0.02 and zero respectively. In all cases df. equals one.

TABLE XII-15  
RESPONSIVENESS TO THE SUSPENSION OF SPECIAL DEPRECIATION  
ALLOWANCE OR INVESTMENT ALLOWANCE: CLASSIFIED BY CAPITAL  
EXPENDITURE DECISION TECHNIQUES EMPLOYED

	Capital Expenditure Decision Techniques		Total
	Discounted Cash Flow	Other	
Responsive	6	8	14
Not Responsive	28	43	71
Total	34	51	85

Number analysed: Forty-three firms in relation to special depreciation and forty-two in respect of the investment allowance. Note that both numbers give the same tabulation.

Not analysed: Five firms which use no recognised capital expenditure decision techniques and nine firms which completed the brief questionnaire only. Two of the former firms were not responsive.

TABLE XII-16  
RESPONSIVENESS TO THE ABOLITION OF SPECIAL DEPRECIATION  
ALLOWANCE OR INVESTMENT ALLOWANCE: CLASSIFIED BY CAPITAL  
EXPENDITURE DECISION TECHNIQUES EMPLOYED

	Capital Expenditure Decision Techniques		Total
	Discounted Cash Flow	Other	
Responsive	4	8	12
Not Responsive	30	43	73
Total	34	51	85

Number analysed: Forty-seven in relation to special depreciation and forty-six in respect of the investment allowance. Note that both numbers give the same tabulation.

Not analysed: Five firms which use no recognised capital expenditure decision techniques and nine participants which completed the brief questionnaire only. All these firms were not responsive.

techniques employed.<sup>13</sup>

The effect of the abolition or suspension of special depreciation or the investment allowance on the value of capital expenditure projects approved is classified by whether capital expenditure proposals are evaluated on a pre-tax or an after-tax (including a after-tax and a pre-tax) basis (see Tables XII-17 to XII-20). Five firms which were responsive to the suspension of special depreciation and investment allowances evaluated capital expenditure proposals on an after-tax basis. Although no responsive firms evaluated proposals on a pre-tax basis, two responsive firms which did not use any recognised capital expenditure decision techniques were not analysed. The results disclose that firms which evaluated proposals on an after-tax basis were no more responsive to the suspension of these allowances than were other firms.<sup>14</sup> Similarly, responsiveness to the abolition of special depreciation and investment allowances was independent of the basis of evaluating capital expenditure proposals.<sup>15</sup>

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<sup>13</sup>For the suspension of special depreciation and investment allowances  $\chi^2$  (corrected) equals zero and for the abolition of these allowances  $\chi^2$  (corrected) equals 0.03. In both cases df. equals one.

<sup>14</sup>For the suspension of special depreciation allowance p equals 0.20 and for investment allowance p equals 0.23.

<sup>15</sup>For the abolition of special depreciation allowance p equals 0.61 and for investment allowance p equals 0.65.

TABLE XII-17

RESPONSIVENESS TO THE SUSPENSION OF SPECIAL DEPRECIATION:  
CLASSIFIED BY EVALUATION OF CAPITAL EXPENDITURE PROPOSALS  
ON AN AFTER-TAX OR A PRE-TAX BASIS

	Basis of Evaluating Capital Expenditure Proposals		Total
	After-Tax <sup>1</sup>	Pre-Tax	
Responsive	5	0	5
Not Responsive	23	10	33
Total	28	10	38

<sup>1</sup>Includes those companies which answered that proposals are evaluated on a pre-tax and an after-tax basis.

Not analysed: Five firms which use no recognised method of evaluating proposals and nine respondents to the brief questionnaire only. Two of the former firms were responsive.

TABLE XII-18

RESPONSIVENESS TO THE SUSPENSION OF INVESTMENT ALLOWANCE:  
CLASSIFIED BY EVALUATION OF CAPITAL EXPENDITURE PROPOSALS  
ON AN AFTER-TAX OR A PRE-TAX BASIS

	Basis of Evaluating Capital Expenditure Proposals		Total
	After-Tax <sup>1</sup>	Pre-Tax	
Responsive	5	0	5
Not Responsive	23	9	32
Total	28	9	37

<sup>1</sup>Includes those companies answering that proposals are evaluated on a pre-tax and an after-tax basis.

Not analysed: Five firms which use no recognised method of evaluating proposals and nine respondents to the brief questionnaire only. Two of the former firms were responsive.

TABLE XII-19

RESPONSIVENESS TO THE ABOLITION OF SPECIAL DEPRECIATION:  
CLASSIFIED BY EVALUATION OF CAPITAL EXPENDITURE PROPOSALS  
ON AN AFTER-TAX OR A PRE-TAX BASIS

	Basis of Evaluating Capital Expenditure Proposals		Total
	After-Tax <sup>1</sup>	Pre-Tax	
Responsive	4	1	5
Not Responsive	24	9	33
Total	28	10	38

<sup>1</sup>Includes those companies which answered that proposals are evaluated on a pre-tax and an after-tax basis.

Not analysed: Five firms which use no recognised method of evaluating capital expenditure proposals and nine participants which completed the brief questionnaire only. All of these companies were not responsive.

TABLE XII-20

RESPONSIVENESS TO THE ABOLITION OF INVESTMENT ALLOWANCE:  
CLASSIFIED BY EVALUATION OF CAPITAL EXPENDITURE PROPOSALS  
ON AN AFTER-TAX AND A PRE-TAX BASIS

	Basis of Evaluating Capital Expenditure Proposals		Total
	After-Tax <sup>1</sup>	Pre-Tax	
Responsive	4	1	5
Not Responsive	24	8	32
Total	28	9	37

<sup>1</sup>Includes those companies which answered that capital expenditure proposals are evaluated on a pre-tax and an after-tax basis.

Not analysed: Five firms which use no recognised capital expenditure decision techniques and nine participants which completed the brief questionnaire only. All of these firms were not responsive.

The Adequacy of Ordinary Tax Rates of Depreciation  
and Methods of Accounting for Depreciation

In Tables XII-21 and XII-22 the responsiveness of firms to the suspension or abolition of special depreciation is compared with the adequacy of ordinary tax rates of depreciation on plant and machinery. The results disclose that a higher proportion of responsive firms answered that ordinary tax rates of depreciation were inadequate, than those which answered that these rates were adequate. These results are related to chance. Thus the responsiveness to the suspension or abolition of special depreciation allowance is independent of the adequacy or inadequacy of ordinary tax rates of depreciation on plant and machinery.<sup>16</sup>

TABLE XII-21

RESPONSIVENESS TO THE SUSPENSION OF SPECIAL DEPRECIATION  
ALLOWANCE: CLASSIFIED BY ADEQUACY OF ORDINARY TAX RATES  
OF DEPRECIATION ON PLANT AND MACHINERY

	Ordinary Tax Rates of Depreciation		Total
	Adequate	Inadequate	
Responsive	2	5	7
Not Responsive	20	25	45
Total	22	30	52

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<sup>16</sup>For the suspension of special depreciation  $\chi^2$  (corrected) equals 0.16 and for the abolition of that allowance  $\chi^2$  (corrected) equals 0.32.

TABLE XII-22  
RESPONSIVENESS TO THE ABOLITION OF SPECIAL DEPRECIATION  
ALLOWANCE: CLASSIFIED BY ADEQUACY OF ORDINARY TAX RATES  
OF DEPRECIATION ON PLANT AND MACHINERY

	Ordinary Tax Rates of Depreciation		Total
	Adequate	Inadequate	
Responsive	1	4	5
Not Responsive	21	26	47
Total	22	30	52

In the next two tables (Tables XII-23 and XII-24) responsiveness of firms to the suspension or abolition of special depreciation is classified by the method of accounting for depreciation on plant and machinery. Those companies claiming and charging maximum tax rates of depreciation form

TABLE XII-23  
RESPONSIVENESS TO THE SUSPENSION OF SPECIAL DEPRECIATION  
ALLOWANCE: CLASSIFIED BY METHOD OF ACCOUNTING FOR  
DEPRECIATION ON PLANT AND MACHINERY

	Method of Accounting for Depreciation		Total
	Claim and Charge Ordinary and Special Tax Rate of Depreciation	Other	
Responsive	5	3	8
Not Responsive	27	20	47
Total	32	23	55

Number analysed: 50.

Not analysed: Two firms which did not answer question twenty-five. Both were not responsive.

TABLE XII-24  
RESPONSIVENESS TO THE ABOLITION OF SPECIAL DEPRECIATION  
ALLOWANCE: CLASSIFIED BY METHOD OF ACCOUNTING FOR  
DEPRECIATION ON PLANT AND MACHINERY

	Method of Accounting for Depreciation		Total
	Claim and Charge Ordinary and Special Tax Rate of Depreciation	Other	
Responsive	3	3	6
Not Responsive	29	20	49
Total	32	23	55

Number analysed: 50.

Not analysed: Two firms which did not answer question twenty-five. Both were not responsive.

one group and those using other methods form the second group. The results disclose that responsiveness to the suspension or abolition of special depreciation is unrelated to the method of accounting for the depreciation of plant and machinery.<sup>17</sup>

#### Some Further Questions on the Investment Allowance

In the case of the investment allowance, certain data of a similar nature to that discussed above was sought for periods other than the year ended 31 December, 1971 in questions twenty, twenty-two and twenty-nine. These questions were included in the original questionnaire only.

Question twenty requested participants to indicate whether the planned purchase of any significant items of new plant and

<sup>17</sup>For the suspension of special depreciation  $X^2$  (corrected) equals 0.02 and for the abolition of that allowance  $X^2$  (corrected) equals zero. In both cases df. equals one.

machinery had been abandoned as a result of the withdrawal of the investment allowance in 1966. Forty-five of the forty-six participants answered this question. All of them answered that no significant items had been abandoned.

Seven companies (15.5 per cent) answered, in question twenty-two, that capital expenditure projects had been approved which would not have been approved had the investment allowance not been re-introduced in 1970. Three of these companies were also responsive to the abolition of the investment allowance and two further firms were responsive to the timing effect of that allowance (see question 16D). Another company, which stated that the value of capital expenditure projects approved since the re-introduction of the investment allowance would have decreased by twenty-five per cent had that allowance not been re-introduced, did not answer questions seventeen or eighteen on the suspension or abolition of the investment allowance. One company, which answered that capital expenditure projects (other than major projects) had been approved which would not have been approved if the investment allowance had not been re-introduced in 1970, was not responsive to the timing effect (see question 16D), the suspension (see question 17A(2)), or the abolition (see question 18A(2)) of that allowance. This firm answered that the value of capital expenditure projects approved since the re-introduction of the investment allowance in 1970 which would not have been approved was equivalent to five per cent or less of the value of projects actually approved. In view of the answers given by this company to questions sixteen, seventeen and eighteen, it would appear that its answer to question twenty-two is inconsistent and is therefore

disregarded.

Question 29(a) sought to determine the effect, or expected effect, of increasing the rate of the investment allowance to twenty per cent and extending its scope. Both of these changes were announced in the June, 1972 Financial Statement in which the government stressed that the investment allowance should not be regarded as a permanent feature of the taxation structure. Part (b) of question twenty-nine sought to assess the effect of this part of the announcement.

As this question was unstructured, some difficulty in classifying answers was anticipated. The general trend of answers given is therefore supported by quotations from certain questionnaires.

Forty-five of the forty-six firms which completed the original questionnaire answered question 29(a). Of these, twenty-nine per cent gave an answer which suggested that the policy changes under consideration would result, or had resulted, in a minor advancement in the timing of qualifying expenditure. A further seven per cent indicated a significant, and four per cent a considerable advancement in the timing of capital expenditure. Thus forty per cent of the participants emphasised the timing effect of the 1972 changes in the investment allowance.

Thirteen per cent answered that the amount of capital expenditure was expected to increase. Of these, nine per cent planned to increase qualifying expenditure by a significant amount, and four per cent were responsive to a minor extent. Almost half of the participants (forty-seven per cent) indicated that the announcement had, or would have, no direct effect on their capital expenditure decisions. About eighty

per cent of those firms which answered this question were not responsive or were responsive to a minor degree only. This figure is comparable with that obtained in hypothetical questions seeking data on the effect of abolishing or suspending the investment allowance and its effect on the timing of capital expenditure.

Answers classified as having a minor effect on the timing of capital expenditure include :

- (1) Increased liquidity arising from this additional concession will influence a decision to increase commitments for capital expenditure.
- (2) May result in capital commitments in 1973-74 rather than in 1974-75.
- (3) By making the return on projects more attractive it may bring forward the implementation of projects.

Companies indicating that a significant effect on timing resulted from the policy changes under study include :

- (1) Part of our plant replacement programme has been brought forward - say \$2 - 300,000.
- (2) A major item is being considered earlier.

One large firm which was classified as being responsive to a considerable degree answered that the planned renewal of major manufacturing plant costing between \$1 - 2 millions was advanced to take advantage of the investment allowance. A further company, which was also responsive to the timing effect and the abolition of the investment allowance answered that a major expansion was being advanced.

A small, fast growth firm which emphasised the effect on the amount of capital expenditure answered that :

projects which showed marginal profitability before (the increase and extension of the investment allowance) would be adopted.

and that expectations that the allowance might be withdrawn

would possibly advance the date of a very profitable project. A company which owns a large fleet of trucks answered that the extension of the investment allowance to this class of asset would have a substantial effect on the acquisition of new trucks.

Few of the non-responsive firms gave reasons in support of their answers. Among those which did were the following :

- (1) Investment allowance is not of very high priority in decision making. It is regarded as a recognition of expansion attempts, but expansion is not likely to be cancelled or postponed by adverse decisions of government on allowances.
- (2) Major capital projects require to be planned... in advance and generally will be undertaken to provide adequate capacity as and when estimated to be required. Consequently, it is seldom possible to plan to take advantage of the vagaries of government fiscal policy.

It would have been desirable to follow-up this question a year later with a similar question designed to determine the extent to which predictions were realised. As the writer has already received considerable assistance from participants, it was decided not to do so.

Although no definite conclusion can be drawn from the above question, the answers given were reasonably consistent with those given to other questions on the investment allowance.

Question 29(b) sought to determine the effect of the Budget statement that the investment allowance was not a permanent feature of the taxation system. Two of the companies which were responsive to the increase in the investment allowance did not answer question 29(b). Of the remainder, nine would not have advanced the timing or increased the amount of capital expenditure but for the

Minister's statement. Thirteen companies were unaffected by that statement, one of which answered that the investment allowance had never been regarded as a permanent feature of the taxation system. One other company answered that capital expenditure plans would be reviewed in March of 1973 before the presentation of the next budget.

The above investigation into the effect of the suspension of special depreciation or the investment allowance for a period of three to four years on the value of capital expenditure projects approved (other than major projects) revealed that eighty-six per cent of the participants would not have decreased the value of projects approved. Given the abolition of these allowances, ninety per cent of the participants would have undertaken the same amount of capital expenditure (other than that relating to major projects) as that actually undertaken. The responsiveness to the suspension or abolition of special depreciation or investment allowance was independent of a wide range of variables.

The effect of the suspension or abolition of these allowances on the value of major projects approved in the year ended 31 December, 1971 or nearest balance date is investigated below.

THE DIRECT EFFECT OF THE SUSPENSION OR ABOLITION OF  
SPECIAL DEPRECIATION OR INVESTMENT ALLOWANCE ON  
MAJOR CAPITAL EXPENDITURE PROJECTS

From the tabulated answers it can be seen that thirty-three of the fifty-one companies (80.5 per cent) which answered question 17B in respect of special depreciation on plant and machinery approved major capital expenditure projects in the year ended 31 December, 1971. One of these companies did not answer question 17C. Of the remaining thirty-two companies, three indicated that the suspension of special depreciation allowance for three to four years would have delayed the approval of major projects in the year ended 31 December, 1971. The null hypothesis that there is no difference between those firms which would have delayed the approval of major projects and other firms as a result of the suspension of special depreciation allowance is rejected ( $p < 0.001$ ). None of the thirty-two firms indicated that they would have abandoned major projects as a result of the suspension of special depreciation allowance. This result is also statistically significant.

Similar questions relating to the suspension of the investment allowance produced similar results. Of the thirty-three companies which completed question 17C(2), the same three companies would have delayed but not abandoned the approval of major capital expenditure projects.

Of the seven firms which were responsive to the suspension of special depreciation or investment allowance in respect of other than major projects, one would have postponed major projects, three did not approve major projects in the relevant year and three were not responsive

to the suspension of special depreciation or investment allowance in respect of major projects. One of the two firms which were responsive in respect of major projects only was responsive only to the timing effect of these allowances (see questions 16A(i) and 16D). The other was responsive to the timing effect of the investment allowance only.

Two of the three firms which were responsive to the suspension of special depreciation and investment allowances in respect of major projects were small, fast growth companies. The other firm was a large, slow growth firm. In Tables XII-25 and XII-26 the responsiveness of firms to the suspension of special depreciation and investment allowance respectively is classified by the size of participants. In the case of special depreciation allowance the table also applies to the abolition of that allowance. The responsiveness to the suspension and abolition of special depreciation allowance and to the suspension of the investment allowance is independent of the size of participants.<sup>18</sup>

The responsiveness to the suspension and abolition of special depreciation allowance or the suspension of the investment allowance is classified by the growth of participants in Tables XII-27 and XII-28 respectively. The difference in the proportion of slow and fast growth firms which were responsive and not responsive also relates to chance.<sup>19</sup>

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<sup>18</sup> For special depreciation  $p$  equals 0.55 and for investment allowance  $p$  equals 0.52.

<sup>19</sup> For special depreciation  $p$  equals 0.61 and for investment allowance  $p$  equals 0.42.

TABLE XII-25

RESPONSIVENESS TO THE SUSPENSION AND ABOLITION OF SPECIAL  
DEPRECIATION ALLOWANCE ON MAJOR CAPITAL EXPENDITURE  
PROJECTS: CLASSIFIED BY SIZE OF PARTICIPANTS

	Size of Participants		Total
	Small	Large	
Responsive	2	1	3
Not Responsive	14	13	27
Total	16	14	30

Not analysed: Two companies the size of which is unknown. Both of these companies were not responsive.

TABLE XII-26

RESPONSIVENESS TO THE SUSPENSION OF INVESTMENT ALLOWANCE  
ON MAJOR CAPITAL EXPENDITURE PROJECTS: CLASSIFIED BY  
SIZE OF PARTICIPANTS

	Size of Participants		Total
	Small	Large	
Responsive	2	1	3
Not Responsive	14	14	28
Total	16	15	31

Not analysed: Two companies the size of which is unknown. Both of these companies were not responsive.

TABLE XII-27

RESPONSIVENESS TO THE SUSPENSION AND ABOLITION OF SPECIAL  
DEPRECIATION ALLOWANCE ON MAJOR CAPITAL EXPENDITURE  
PROJECTS: CLASSIFIED BY GROWTH OF PARTICIPANTS

	Growth of Participants		Total
	Slow	Fast	
Responsive	1	2	3
Not Responsive	11	14	25
Total	12	16	28

Not analysed: Two companies the growth of which is unknown, and two other companies which indicated that the question on growth (4(c)) was not applicable. All of these companies were not responsive.

TABLE XII-28

RESPONSIVENESS TO THE SUSPENSION OF INVESTMENT ALLOWANCE  
ON MAJOR CAPITAL EXPENDITURE PROJECTS: CLASSIFIED  
BY GROWTH OF PARTICIPANTS

	Growth of Participants		Total
	Slow	Fast	
Responsive	1	2	3
Not Responsive	15	11	26
Total	16	13	29

Not analysed: Two companies the growth of which is unknown, and two other companies which indicated that the question on growth (4(c)) was not applicable. All of these companies were not responsive.

Question 18C sought similar data on the effect of abolishing special depreciation or investment allowance on the approval of major capital expenditure projects. As the answers given in relation to special depreciation were the same as those given for the suspension of that allowance, further discussion of special depreciation is not necessary.

In question 18C(2) a small, fast growth firm, which was consistently responsive to relevant allowances discussed above (and in the previous chapter), answered that major capital expenditure projects would have been abandoned if the investment allowance were abolished. This company answered in the corresponding part of question seventeen that the suspension of the investment allowance would have delayed major capital expenditure projects approved in the year ended 31 December, 1971 or nearest balance date. The same company answered that, had the investment allowance not been re-introduced in 1970, major capital expenditure projects which had been approved would not have been approved (see question 22(a)).

Two other companies which would have delayed major capital expenditure projects had the investment allowance been suspended, answered that the abolition of that allowance would also result in the delay of major projects.

THE EFFECT OF SUSPENDING OR ABOLISHING SELECTED  
CONCESSIONS AND INCENTIVES

Other Than Major Projects

In addition to special depreciation on plant and machinery and the general investment allowance, questions seventeen and eighteen sought to determine the effect of the suspension or abolition of the following allowances on the approval of capital expenditure projects;

- (a) West Coast development (investment) allowance,
- (b) Special depreciation on:
  - (i) employee accommodation,
  - (ii) cool stores for meat or meat products,
  - (iii) hotels for tourist accommodation,
- (c) Additional depreciation on:
  - (i) buildings satisfying meat hygiene regulations,
  - (ii) buildings for the storage, or processing of fish or fish products,
  - (iii) plant, machinery or equipment used for scientific research,
- (d) Supplementary depreciation on motels or hotels,
- (e) Forestry development expenditure, and
- (f) Research grants.

From the tabulated answers to questions seventeen and eighteen, it will be evident that few companies approved capital expenditure projects in the year ended 31 December, 1971 which qualified, or would qualify, for the above allowances. Firms were responsive to the abolition or suspension of additional depreciation on plant and machinery used for scientific research and research grants only. One large, fast growth firm was responsive to the suspension or abolition of both of

these allowances. A small fast growth firm was responsive to the abolition or suspension of research grants. In the case of the suspension or abolition of research grants, one firm would have reduced its qualifying capital expenditure by fifty per cent. The other firm would have reduced its qualifying expenditure by five to ten per cent for the suspension of the allowance and by forty per cent if it were abolished.

### Major Projects

The suspension or abolition of the West Coast (investment) allowance would have resulted in one firm delaying a major capital expenditure project. This company gave a similar answer for the suspension or abolition of special depreciation and the investment allowance.

The suspension or abolition of other allowances discussed in this section would not have affected the approval of major capital expenditure projects.

### SUMMARY

According to the answers given to questions seventeen and eighteen the suspension for three to four years or the abolition of a large number of taxation concessions and incentives on 31 December, 1970 or nearest balance date would have had a minor effect on the value of capital expenditure projects approved in the following year.

The suspension of special depreciation allowance on other than major capital expenditure projects would have decreased the value of qualifying projects approved by about 1.6 per cent. The equivalent figure for the suspension of the investment allowance was two per cent. Seven firms (13.5 per cent) were responsive to these allowances. The abolition of special

depreciation or the investment allowance on capital expenditure projects (other than major projects) would have resulted in a decrease in the value of qualifying projects approved of less than 1.4 per cent. In addition, three firms would have delayed major capital expenditure projects had the investment allowance been suspended or special depreciation been suspended or abolished. Two firms would have delayed major capital expenditure projects, given that the investment allowance was abolished, and one firm would have abandoned a major project.

Of the nine other allowances included in questions seventeen and eighteen, one firm was of the view that the value of qualifying capital expenditure projects approved (other than major projects) would decrease by less than ten per cent if additional depreciation on plant and machinery used for research purposes were suspended or abolished. Two firms were responsive to the suspension or abolition of research grants. Had the West Coast investment allowance been suspended or abolished on 31 December, 1970 or nearest balance date one company would have delayed the approval of a major capital expenditure project.

Some additional questions on the effect of withdrawing in 1966, re-introducing in 1970 and extending in 1972 the investment allowance produced answers which were basically consistent with answers given to the hypothetical questions.

The responsiveness of firms to the suspension or abolition of special depreciation or investment allowance was independent of a large number of variables studied.

The above results, as with those of the previous chapter, apply to participants and not to companies in general. The

conclusion that special depreciation and investment allowances had a very minor effect on the amount of capital expenditure approved by participants in the year ended 31 December, 1971 is of considerable importance. Further research would be necessary to determine whether this conclusion also applies to companies in general.

CHAPTER XIIITHE BOOK VALUE OF PLANT AND MACHINERY AND THE  
DISPOSAL OF ITEMS OF SUCH PLANT AND MACHINERYABSTRACT

Sixty-six per cent of the forty-four companies which answered question thirty-one stated that they regarded the book value of plant and machinery as irrelevant in deciding whether to sell or scrap significant items of such plant and machinery. A significantly higher proportion of those firms which were responsive to the timing effect of special depreciation answered that they regarded the book value of plant and machinery as relevant to the decision to sell or scrap significant items of such plant and machinery than did firms which were not responsive to the timing effect of that allowance. No other statistically significant findings are revealed by the analysis presented in this chapter.

INTRODUCTION

The decision to sell or scrap significant items of plant and machinery may be as important to the firm as the decision to acquire additional plant and machinery. If such assets are retained beyond their economic life or sold prematurely, firms' methods of production will be less efficient than would otherwise be the case. Decisions to sell or scrap significant items of plant and machinery should be made after an appropriate analysis. This requires that all relevant costs be taken into account and that irrelevant costs be omitted. Relevant costs are those expected future costs which will differ between alternatives.<sup>1</sup> As the book value<sup>2</sup> of plant and machinery is an historic cost which will not differ between alternatives, it is irrelevant to a decision

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<sup>1</sup>Charles T. Horngren, Cost Accounting : A Managerial Emphasis, Prentice-Hall, Englewood Cliffs, 1962, 417.

<sup>2</sup>That is accumulated cost net of accumulated depreciation provision.

to sell or scrap such assets.

In this chapter the answers given to question thirty-one, which requested participants to answer whether they regarded the book value of plant and machinery as relevant or irrelevant in deciding whether to scrap or sell significant items of such plant and machinery, are analysed. This question was included in the original questionnaire only. Two companies which completed that questionnaire did not answer question thirty-one. For this reason, this chapter is based on an analysis of forty-four answers to the relevant question.

#### THE RESULTS

Of the forty-four companies which answered question thirty-one, sixty-six per cent (twenty-nine) stated that they regarded the book value of significant items of plant and machinery as irrelevant in deciding whether to sell or scrap significant items of such assets. The remaining fifteen companies (thirty-four per cent) were of the opposite view. These differences are statistically significant ( $p < 0.05$ ).

One of the companies which answered that the book value of plant and machinery was relevant noted that :

"Major sales of plant and machinery could have a significant effect on net income."

One other company gave a similar explanation of its answer. A similar reason might apply to other companies which answered that the book value of plant and machinery was relevant in deciding to sell or scrap such assets.

Those companies which indicated the book value of plant and machinery was relevant in deciding to sell or scrap significant items of such assets were not questioned on the

weight given to this factor in making such decision. Two companies added comments indicating that this was a secondary factor.

To investigate whether the size or growth of participants was a significant variable affecting the answers given to question thirty-one, Tables XIII-1 & XIII-2 were prepared. The first table discloses that the proportion of small firms which answered that the book value of plant and machinery was relevant in deciding to sell or scrap such plant and machinery was not significantly different from that of large firms.<sup>3</sup> Similarly, the proportion of slow growth firms which answered that the book value of plant and machinery was relevant was not significantly different from that of fast growth firms.<sup>4</sup>

If ordinary and special tax rates of depreciation are charged, the amount at which plant and machinery is stated net of depreciation in successive periods decreases rapidly during the initial periods. Those companies which charge ordinary and special depreciation may find that the book value of items of plant and machinery which are being considered for sale or scraping may be relatively small. This might have influenced companies which charge ordinary and special depreciation to answer that the book value of plant and machinery is irrelevant to the decisions under discussion. On the other hand, firms which charge depreciation on the straight-line method or on the diminishing value method at rates less than the relevant ordinary and special tax rates of depreciation might find that the book value of plant and machinery which might be sold or scrapped is relatively large.

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<sup>3</sup>  $\chi^2$  (corrected) equals zero, df. equals one.

<sup>4</sup>  $\chi^2$  (corrected) equals 0.41, df. equals one.

TABLE XIII-1

RELEVANCE OF BOOK VALUE OF PLANT AND MACHINERY TO THE  
DECISION TO SELL OR SCRAP SIGNIFICANT ITEMS OF SUCH  
PLANT AND MACHINERY: CLASSIFIED BY SIZE OF PARTICIPANTS

	Size of Participants		Total
	Small	Large	
Relevant	7	8	15
Irrelevant	15	14	29
Total	22	22	44

TABLE XIII-2

RELEVANCE OF BOOK VALUE OF PLANT AND MACHINERY TO THE  
DECISION TO SELL OR SCRAP SIGNIFICANT ITEMS OF SUCH  
PLANT AND MACHINERY: CLASSIFIED BY GROWTH OF PARTICIPANTS

	Growth of Participants		Total
	Slow	Fast	
Relevant	6	8	14
Irrelevant	17	12	29
Total	23	20	43

Not analysed: One firm which answered that the measure of growth was not applicable. This firm answered that the book value of plant and machinery was relevant to the decision under discussion.

Consequently, the effect of such a decision on reported income may be sufficient to influence these companies to answer that the book value of plant and machinery is relevant to the decision to sell or scrap items of such plant and machinery. To test this possibility, the answers given to question thirty-one were tabulated by the method of accounting for depreciation of plant and machinery (see Table XIII-3). The answers of those companies which charge ordinary and special tax rates of depreciation are compared with companies which used other methods. Firms which charge ordinary and special depreciation on some assets and use other methods for other assets have been included in both classifications. The analysis reveals that the answers given to question thirty-one were independent of the method of accounting for depreciation of plant and machinery.<sup>5</sup>

Firms which were responsive to the timing, suspension or abolition of special depreciation allowance<sup>6</sup> might be expected to answer that the book value of plant and machinery was irrelevant in deciding to sell or scrap significant items of such plant and machinery. To respond to this allowance these firms may need to scrap or sell items of plant and machinery regardless of their book value.

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<sup>5</sup> $\chi^2$  (corrected) equals 1.60, df. equals one.

<sup>6</sup>See questions 16A(i), 17A(1) and 18A(1).

TABLE XIII-3  
RELEVANCE OF BOOK VALUE OF PLANT AND MACHINERY TO THE  
DECISION TO SELL OR SCRAP SIGNIFICANT ITEMS OF SUCH  
PLANT AND MACHINERY: CLASSIFIED BY METHOD OF ACCOUNTING  
FOR DEPRECIATION ON PLANT AND MACHINERY

	Method of Accounting for Depreciation		Total
	Claim and Charge Ordinary and Special Tax Rates	Other	
Relevant	7	11	18
Irrelevant	18	11	29
Total	25	22	47

Number analysed: Forty-three.

Not analysed: One firm which did not answer question twenty-five on method of accounting for depreciation. This firm answered that the book value of plant and machinery was irrelevant to the decision under discussion.

In Table XIII-4 those firms which answered that the book value of plant and machinery was relevant or irrelevant in deciding to sell or scrap significant items of such assets are classified by whether they were responsive or not responsive to the timing effect of special depreciation. In contrast to what might have been expected, all three responsive firms answered that the book value of plant and machinery was relevant. This result is statistically significant ( $p = 0.04$ ). Thus we may conclude that firms which were responsive to the timing effect of special depreciation were more likely to answer that the book value of plant and machinery was relevant in deciding to sell or scrap significant items of such assets than were other firms.

From the data collected, no explanation of this conclusion could be found.

TABLE XIII-4

RELEVANCE OF BOOK VALUE OF PLANT AND MACHINERY TO THE DECISION TO SELL OR SCRAP SIGNIFICANT ITEMS OF SUCH PLANT AND MACHINERY: CLASSIFIED BY RESPONSIVENESS OF PARTICIPANTS TO THE TIMING EFFECT OF SPECIAL DEPRECIATION ALLOWANCE

	Responsiveness to the Timing Effect of Special Depreciation		Total
	Responsive	Not Responsive	
Relevant	3	12	15
Irrelevant	0	28	28
Total	3	40	43

Not analysed: One firm which did not answer question sixteen on the responsiveness of participants to the timing effect of special depreciation. This firm answered that the book value of plant and machinery was irrelevant to the decision under discussion.

In Tables XIII-5 & XIII-6 the answers given to question thirty-one are classified by responsiveness of participants to the suspension and abolition of special depreciation allowance respectively. These tables do not reveal any statistically significant relationships.<sup>7</sup>

Those companies which used discounted cash flow capital expenditure decision techniques might be expected to answer that the book value of plant and machinery was irrelevant in deciding to sell or scrap significant items of such plant

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<sup>7</sup>For the suspension of special depreciation  $\chi^2$  (corrected) equals 0.91. For the abolition of that allowance  $\chi^2$  (corrected) equals 0.65. In both cases df. equals one.

TABLE XIII-5

RELEVANCE OF BOOK VALUE OF PLANT AND MACHINERY TO THE DECISION TO SELL OR SCRAP SIGNIFICANT ITEMS OF SUCH PLANT AND MACHINERY: CLASSIFIED BY RESPONSIVENESS OF PARTICIPANTS TO THE SUSPENSION OF SPECIAL DEPRECIATION ALLOWANCE

	Responsiveness to the Suspension of Special Depreciation		Total
	Responsive	Not Responsive	
Relevant	4	10	14
Irrelevant	3	24	27
Total	7	34	41

Not analysed: Two companies which did not answer question seventeen on the responsiveness of participants to the suspension of special depreciation, and one firm which answered that that question was not applicable. The latter answered that the book value of plant and machinery was relevant to the decision under discussion.

TABLE XIII-6

RELEVANCE OF BOOK VALUE OF PLANT AND MACHINERY TO THE DECISION TO SELL OR SCRAP SIGNIFICANT ITEMS OF SUCH PLANT AND MACHINERY: CLASSIFIED BY RESPONSIVENESS OF PARTICIPANTS TO THE ABOLITION OF SPECIAL DEPRECIATION ALLOWANCE

	Responsiveness to the Abolition of Special Depreciation		Total
	Responsive	Not Responsive	
Relevant	3	11	14
Irrelevant	2	25	27
Total	5	36	41

Not analysed: Two companies which did not answer question eighteen on the responsiveness of participants to the abolition of special depreciation, and one firm which answered that that question was not applicable. The latter answered that the book value of plant and machinery was relevant to the decision under discussion.

and machinery. Decisions based on these methods depend on the amount and timing of cash flows and not on the book value of plant and machinery.<sup>8</sup>

In Table XIII-7 the answers given to question thirty-one are classified by whether firms use discounted cash flow or other capital expenditure decision techniques. It can be seen that seven firms which used discounted cash flow methods answered that the book value of plant and machinery was relevant, whereas fourteen answered that it was irrelevant. The results disclosed in the table are not statistically

TABLE XIII-7

RELEVANCE OF BOOK VALUE OF PLANT AND MACHINERY TO THE  
DECISION TO SELL OR SCRAP SIGNIFICANT ITEMS OF SUCH PLANT  
AND MACHINERY: CLASSIFIED BY CAPITAL EXPENDITURE DECISION  
TECHNIQUES EMPLOYED

	Capital Expenditure Decision Techniques		Total
	Discounted Cash Flow	Other	
Relevant	7	7	14
Irrelevant	14	11	25
Total	21	18	39

Not analysed: Five companies which did not employ any recognised capital expenditure decision techniques. One of these firms answered that the book value of plant and machinery was relevant to the decision under discussion.

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<sup>8</sup>A tax reduction resulting from a claim for a loss on disposal, or an additional tax payment for the assessment of depreciation claims recovered on the disposal, of an asset would be relevant.

significant.<sup>9</sup> This result suggests that some firms which use discounted cash flow methods do not entirely rely on those methods. Other factors also appear to be taken into account. These might include the results suggested by other capital expenditure decision techniques and the effect of capital expenditure decisions on reported income.

#### CONCLUSION

Sixty-six per cent of the forty-four companies which answered question thirty-one stated that they regarded the book value of plant and machinery as irrelevant in deciding whether to sell or scrap significant items of such plant and machinery. A significantly higher proportion of those firms which were responsive to the timing effect of special depreciation answered that they regarded the book value of plant and machinery as relevant to the decision under discussion than did firms which were not responsive to the timing effect of that allowance. From the data collected, no explanation could be found for this result. No other statistically significant findings were revealed by the analysis given above.

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<sup>9</sup> $\chi^2$  (corrected) equals zero, df. equals one.

CHAPTER XIV  
DEPRECIATION AND PRICING

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ABSTRACT

The treatment of depreciation for price control purposes is examined. The pricing methods used by participants in the questionnaire survey are examined to provide a first answer as to the effect of depreciation on prices.

Depreciation computed at maximum ordinary tax rates of depreciation was traditionally recognised as an admissible cost for price control purposes. Although special depreciation was not recognised as an admissible cost, taxation was computed for price control purposes as if special depreciation were not claimed. Under this policy prices were neither higher nor lower than they would have been had special depreciation not been available.

Under the Stabilisation of Prices Regulations 1973 adjustments for the effect of special depreciation claimed on ordinary depreciation claimed in later periods were limited to ordinary depreciation on assets which were still subject to special depreciation. Special depreciation was recognised as an admissible cost under the Stabilisation of Prices Regulations 1974. It is suggested that prices may increase to a greater extent than would have been the case had special depreciation not been available. Both of the policy changes described in this paragraph apply to Category B goods and services only.

Thirty per cent of the companies questioned answered that price control was the most important method of determining the prices of their goods and services. Forty-six per cent answered that some form of cost-plus pricing was the most important method. One-third of these included ordinary and special depreciation in setting prices. Seventeen per cent of the participants stated that the prices of their goods and services were primarily determined in the market place.

The desire to have special depreciation recognised as an admissible cost for price control may have influenced the depreciation policies of public companies in the recent past. The pricing policies of companies may have required the adoption of a particular depreciation policy so that a satisfactory profit is earned from year to year.

Although a definite conclusion is not possible there is some evidence to suggest that a small proportion of companies surveyed might increase prices if the rate of special depreciation were increased.

## INTRODUCTION

As most of the companies surveyed operate under imperfect competition, they may exercise some control over their prices. For this reason, the impact of depreciation in general, and of depreciation incentives and concessions in particular, on the prices of goods and services is of relevance to this study.<sup>1</sup> First, we will discuss direct government control over prices and the treatment of depreciation for this purpose. Secondly, we will examine the pricing methods used by participants and the role of depreciation in fixing prices under the methods given.

### DEPRECIATION AND DIRECT GOVERNMENT CONTROL OF PRICES<sup>2</sup>

During World War II and the early post-war period direct government control of prices was substantially expanded. From 1948 until 1970 successive governments followed a continuing policy of removing goods and services from direct price control.<sup>3</sup> The prices of certain subsidised and essential

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<sup>1</sup>Forty-eight of the one hundred and eleven companies requested to participate in the questionnaire survey disclosed their sales figure for the year ended 31 December, 1971 or nearest balance date. The average percentage of depreciation to sales for these companies was 2.6 per cent. The highest percentage scored by a company included in the forty-eight studied was just over eight per cent.

<sup>2</sup>The following discussion is limited to the control of prices of goods and services under the Control of Prices Act 1947 and regulations pursuant to the Economic Stabilisation Act 1948. The prices of certain goods and services are controlled under separate regulations (for example, the price of motor spirits). These are not discussed. The main sources of information for this section of this chapter are the relevant regulations and the New Zealand Official Yearbook 1973, together with information supplied by a senior officer of the Department of Trade and Industry in the course of an interview with the writer, held in December, 1973.

<sup>3</sup>New Zealand Official Yearbook 1973, Government Printer, Wellington, 1973, 658.

items and those items manufactured, distributed or retailed by monopolies or quasi-monopolies, together with all drugs supplied under the social security scheme, continued to be controlled.<sup>4</sup> In the 1970s direct price control was again expanded in an effort to limit the rate of inflation.<sup>5</sup> For this reason, price control was of considerable importance to companies during the period covered by the questionnaire.

Prior to the introduction of special depreciation in 1945, depreciation computed at ordinary tax rates of depreciation was recognised as an admissible cost for the purposes of determining profit for price control purposes. Companies were permitted to increase their prices if the average rate of return on shareholders' equity for the relevant industry was less than the maximum rate permitted.<sup>6</sup> As special depreciation was introduced to compensate for inflation and not as an allowance for wear, tear and obsolescence, it was not recognised as an admissible cost. To avoid penalising those companies which claimed special depreciation for taxation purposes, three adjustments were made in computing the profitability of industries for price control purposes;

- (1) Depreciation was computed at maximum ordinary tax rates of depreciation assuming that special

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<sup>4</sup> ibid., 659.

<sup>5</sup> loc.cit.

<sup>6</sup> Shareholders' equity is also adjusted to eliminate all revaluations and in some cases goodwill. An adjustment may also be made where the ratio of shareholders' equity to total liabilities is high. (Source: Interview held by the writer with a senior officer of Trade and Industry Department in December, 1973.)

depreciation had not been claimed in prior years,

- (2) Tax was computed at the amount which would have been paid (or would be payable) had special depreciation not been claimed,
- (3) The total of shareholders' equity was adjusted to be consistent with one and two above.<sup>7</sup>

The effect of this policy was that the annual accounts for price control purposes were kept in line with what would have been the case had special depreciation not been introduced.

Firms which qualified for special depreciation were able to increase their after-tax rate of return on shareholders' equity by claiming but not charging special depreciation and by not providing for deferred taxation. If a deferred tax provision were provided, the after-tax rate of return on shareholders' equity would have been the same as that if special depreciation were not claimed. On the other hand, if special depreciation were charged and claimed, the rate of return on shareholders' equity would have been less than if special depreciation had not been introduced.

Although ordinary depreciation was generally recognised as an admissible cost for price control purposes, a small number of exceptions applied in particular cases. Some industries were permitted to compute depreciation on the

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<sup>7</sup>The adjustments listed and those discussed elsewhere in this section were made for price control purposes only. They were not required to be adopted for financial reporting purposes. Similar adjustments were made in the accounts of unincorporated businesses.

straight-line method for price control purposes.<sup>8</sup> Firms in these industries also charge depreciation on that method for financial reporting purposes.

In 1970 a "voluntary" early-warning system was initiated under which manufacturers of several commodities supplied the Department with details of cost increases which they claimed necessitated price increases prior to increasing their prices.<sup>9</sup> From 17 November, 1970 to 14 February, 1971 the prices of most goods were frozen at prices applicable on 12 November, 1970.<sup>10</sup> The price justification scheme replaced the price freeze with effect from 15 February, 1971.<sup>11</sup> Manufacturers and packers were required to obtain approval of price increases from the Department of Trade and Industry.

A further price freeze applied from 14 February, 1972 to 31 March of that year.<sup>12</sup> The maximum price of goods was the normal price applying to the relevant item on 14 February, 1972.

Under the Stabilisation of Prices Regulations 1972, which succeeded the price freeze from 1 April, 1972, the traditional treatment of depreciation for price control purposes was applied to a large number of companies for the first time in some years.<sup>13</sup> Owing to the difficulty of adjusting for

<sup>8</sup> Source: Interview held by the writer with a senior officer of Trade and Industry Department in December, 1973.

<sup>9</sup> New Zealand Official Yearbook, op.cit., 658.

<sup>10</sup> Price Freeze Regulations 1970 and Price Freeze Regulations 1970 Amendment No.1.

<sup>11</sup> See Price Order No.2154.

<sup>12</sup> Price Freeze Regulations 1972.

<sup>13</sup> Stabilisation of Prices Regulations 1972, regulation 8(d).

special depreciation claimed in prior years and to the relative insignificance of these adjustments, the Stabilisation of Prices Regulations 1973 incorporated a change in policy for Category B goods and services.<sup>14</sup>

A manufacturer or packer was permitted to increase prices subject to certain provisions including the right of the Secretary of the Department of Trade and Industry to object if the admissible costs of a manufacturer or packer projected on an annual basis fell short of his "absorptive capacity".<sup>15</sup> A manufacturer's absorptive capacity was the largest of three amounts calculated from relationships between taxable profits and sales and taxable profits and total funds. For the purposes of the regulations, taxable profits were defined as total taxable profits after disallowing as a charge against revenue (among other things) "all depreciation in excess of ordinary rates allowed by the Commissioner of Inland Revenue".<sup>16</sup> Although manufacturers and packers of Category B goods were primarily controlled on a pre-tax basis, the Secretary was required to have regard to -

- "(a) Any details supplied by the manufacturer or packer in support of the additional amount of ordinary depreciation which would have been claimable in respect of those assets that are still subject to special depreciation, if depreciation in excess of ordinary rates had not at any time been written off those assets."<sup>17</sup>

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<sup>14</sup>Stabilisation of Prices Regulations 1973, regulations 3(a)(ii) and 4. Category B goods and services are defined as goods and services other than those listed as Category A goods and services. For the most part, Category B goods and services consists of items other than those which were subject to direct price control prior to 1970.

<sup>15</sup>ibid., regulation 8.

<sup>16</sup>loc.cit. (Emphasis added).

<sup>17</sup>ibid., regulation 8(4)(a) (Emphasis added).

and to -

- "(b) Any details supplied ... specifying increases in total funds which would have occurred had depreciation in excess of ordinary rates not at any time been written off those assets that are still subject to special depreciation, due allowance being made for any additional tax that would have been payable had special depreciation not been claimed in respect of those assets."<sup>18</sup>

Under this policy adjustments for special depreciation were restricted to the first four or five years of the life of an asset (that is the period during which special depreciation is claimed). The effect of special depreciation claimed in prior years on ordinary depreciation claims in later years was not taken into account. Thus taxpayers who claimed special depreciation reduced their admissible costs in later years.

The Stabilisation of Prices Regulations 1974 attempted to limit price rises for Category B goods and services by controlling the percentage of pre-tax profit to sales.<sup>19</sup>

For the purposes of these regulations pre-tax profit means :

"... net profit before tax determined in accordance with generally accepted accounting principles consistently applied by the enterprise from its trading operations, after taking into account all expenses (including special depreciation and interest on borrowed money) of conducting and financing them, and - ...

- (b) Disallowing as a charge against revenue all depreciation in excess of the rates allowed by the Commissioner of Inland Revenue ...."<sup>20</sup>

From the above regulation it would appear that firms which charge less than maximum ordinary and special depreciation would not be permitted to treat ordinary and special

<sup>18</sup> ibid., regulation 8(4)(b). (Emphasis added).

<sup>19</sup> Stabilisation of Prices Regulations 1974, regulations 4, 5 and 8. These regulations came into force on 15 July, 1974.

<sup>20</sup> ibid., regulation 4(1).

depreciation as an admissible cost. However, in applying the regulation the Department permits these firms to treat maximum ordinary and special depreciation as an admissible cost.<sup>21</sup> The regulations also defined the extent to which certain items may be claimed as admissible costs for the purposes of determining the price of Category B goods and services. For this purpose :

"Depreciation shall be allowed in respect of any asset at the rate of depreciation for the time being allowed by the Commissioner of Inland Revenue pursuant to the Land and Income Tax Act 1954 in respect of assets of that kind used for the same purpose."<sup>22</sup>

Under the 1974 regulations it is clear that special depreciation and, almost certainly, additional and supplementary depreciation are admissible costs for the purposes of computing prices and determining whether the maximum profit ceiling has been exceeded. For this reason, companies which qualify for these allowances will be permitted to increase prices by a larger amount than would be the case if concessionary rates of depreciation were not available.<sup>23</sup>

If the regulations continue in their present form beyond 31 March, 1975, it would appear that firms will be entitled to deduct the full first year depreciation allowances in determining prices.<sup>24</sup> Because of the size of the first year allowances, many firms may be able to justify significant

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<sup>21</sup> Source: Discussion held by writer with a senior officer of Trade and Industry Department.

<sup>22</sup> Stabilisation of Prices Regulations 1974, regulation 10(d).

<sup>23</sup> The reason for this change in the treatment of special depreciation was not disclosed.

<sup>24</sup> The first year depreciation scheme is outlined on pages 65-67.

price rises.

Although special depreciation is recognised as an admissible cost for the purposes of controlling the prices of Category B goods and services, it is not clear whether the Price Tribunal will adopt this policy in respect of Category A goods and services. The regulations do not specify the method of determining admissible costs for the latter.

Prior to the 15 July, 1974, price control procedures resulted in prices which were neither higher nor lower than what would be the case in the absence of special depreciation allowance. Although some limitations were placed in 1973 on the extent of adjustments made for the effect of special depreciation on ordinary depreciation claims so as to reduce admissible costs in later years, the 1974 regulations recognise both ordinary and special depreciation as admissible costs for the purpose of controlling the prices of Category B goods and services. This new policy may result in higher prices than would otherwise be the case.

#### PRICING POLICIES OF PUBLIC COMPANIES

From the tabulated answers to question twenty-six, it can be seen that thirty per cent of the companies which completed that question ranked price control or similar government regulations as the most important method of determining the price of their products and/or services.<sup>25</sup>

One of these companies wrote that :

"We [operate] in a price controlled industry and do not claim special depreciation. Trade and Industry do not recognise special depreciation

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<sup>25</sup>The tabulated answers to question twenty-six are given on page 575.

as an expense."

Although this practice avoids the need to maintain separate accounts for price control, taxation and financial accounting purposes, it results in the company paying higher tax during the early life of an asset and less tax in its later life than would otherwise be the case.

One reason for this company's policy may be that it feels that a satisfactory after-tax profit cannot be earned if special depreciation is claimed and charged, while prices are determined on the basis of ordinary depreciation. If special depreciation is claimed and not charged, with or without a deferred tax provision, after-tax profits in the initial years would be no less than that obtained under present policies, and liquid assets would be conserved. As the directorate is already of the opinion that ordinary tax rates of depreciation provide a "true and fair" charge for depreciation, there would not appear to be any objections to claiming but not charging special depreciation allowance.

Although no other companies indicated that their depreciation policy was directly influenced by price control procedures, it would be unwise to assume that price control was unimportant. Some companies, especially those manufacturing or supplying Category A goods and services, may have charged special depreciation in the hope that this practice might support submissions that special depreciation be recognised as an admissible cost for price control purposes. The extent to which this point of view might have influenced the depreciation policies of public companies in the recent past is unknown.

The setting of price based on the cost of manufacturing and marketing the company's products or services was the most important method of pricing for forty-six per cent of those companies which completed the original questionnaire.<sup>26</sup> Within limits, companies using this method may recover the loss in revenue from the withdrawal of an incentive or concession from their customers. Conversely, they may increase their prices if an incentive or concession is accounted for in such a manner that after-tax profits are reduced.

Of the twenty-one companies using some form of cost-plus pricing, six included depreciation at ordinary and special tax rates, one used ordinary tax rates, seven used the straight-line method and three used other methods. A further four companies did not answer this part of the question. Two of the above companies used a different depreciation method for pricing from that used for financial reporting purposes. Both companies charge ordinary and special tax rates of depreciation for financial reporting purposes. Two other companies used a different basis for pricing purposes. One of these, which charges depreciation for financial reporting purposes on original cost, used straight-line depreciation on replacement cost for pricing purposes. The other company charges depreciation on replacement cost in its annual report, but includes depreciation on original cost for pricing

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<sup>26</sup> The above answer implies that demand and other factors are not considered. A less rigorous interpretation that allows for the setting of price based on costs, with due regard for the expected cost structure of competitors, demand, long run profit and growth objectives and possible control by government and public or pressure group surveillance appears more reasonable.

purposes.

Although no definite conclusion can be drawn from the above, about thirteen per cent of the forty-two companies which answered questions 26(a) and (where applicable) (b), determined prices on a cost-plus basis and incorporated special depreciation as a cost for this purpose. Thus there is prima facie evidence that a small proportion of companies would ultimately increase prices, if the rate of special depreciation allowance were increased. The effect of a similar policy change on the prices set by other companies using cost-plus pricing is less clear. If their depreciation charges were not increased as a result of an increase in the rate of special depreciation, profit after-tax would increase. As prices tend to be sticky downward, it is unlikely that prices would fall. However, it is possible that prices might not rise as fast as might otherwise be the case.

Seventeen per cent of the participants answered that the market price of similar products produced, or services rendered, by competitors was the most important method of pricing. In addition, three other companies (seven per cent) answered that this method and one or more of the alternative methods were of equal importance. For these companies, depreciation policy is of less importance in setting prices than the expected cost structure of competitors. It may be, however, that the price set by the market dictates that a particular depreciation policy be adopted for financial reporting purposes in order that a satisfactory profit is earned from year to year. Information on this aspect of pricing policy was not sought.

CONCLUSION

Under a long standing policy, depreciation computed at ordinary tax rates was recognised as an admissible cost for price control purposes. Although special depreciation was not recognised as an admissible cost, taxation was computed as if special depreciation were not claimed. During 1973 this policy was amended for Category B goods and services. The prices of these goods and services were controlled on a pre-tax basis and depreciation computed at ordinary tax rates of depreciation was recognised as an admissible cost. The Secretary of the Department of Trade and Industry was required (if requested) to have regard to any additional ordinary depreciation which would have been claimed had special depreciation not been claimed on assets still subject to that allowance and the consequential effect on taxation. The Stabilisation of Prices Regulations 1974 introduced a further change in the treatment of depreciation for the purposes of controlling the prices of Category B goods and services. Under these regulations both ordinary and special depreciation are recognised as admissible costs.

The traditional treatment of depreciation for price control purposes resulted in prices which were neither higher nor lower than would have been the case if special depreciation were not available. It is suggested that special depreciation may result in higher prices than would otherwise be the case under the Stabilisation of Prices Regulations 1974.

Thirty per cent of the companies which completed the relevant question of the original questionnaire answered that

price control, or similar regulation, was the most important method of pricing. Forty-six per cent answered that some form of cost-plus pricing was the most important method of determining prices. About one-third of these companies included ordinary and special depreciation as costs in setting prices. Seventeen per cent of the participants answered that prices were primarily determined in the market place.

A definite conclusion is not possible. However, there is some evidence to suggest that a small proportion of companies surveyed might increase prices if the rate of special depreciation were increased.

Pricing policies may have exerted some influence on the depreciation policy adopted by companies for financial reporting purposes. Some companies may have charged and claimed special depreciation in the recent past in order to support a case for the recognition of the latter as an admissible cost for price control purposes. Other companies may have adopted a given depreciation policy in order that prices set by the market result in a satisfactory profit.

Depreciation policy is clearly of some importance in determining prices. There is a need for further research to explore this relationship in depth.

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P A R T F O U RSUMMARY AND CONCLUSIONS

Special depreciation and investment allowances are intended to influence the timing, amount and nature of capital expenditure undertaken by firms. Given realistic assumptions and values for relevant variables, special depreciation increases the net present value of capital expenditure proposals by between 1.7 and 4.5 per cent of the cost of the qualifying asset, while a ten per cent investment allowance increases the net present value of capital expenditure proposals by more than four per cent of the cost of the qualifying asset.

As the discount rate increases, the benefit from special depreciation increases until a maximum is reached at some high discount rate. The benefit from investment allowance decreases as the discount rate increases. As the ordinary rate of depreciation increases, the benefit from special depreciation decreases. For this reason, an asset which is used continuously will receive less benefit from special depreciation than the one which is idle for two-thirds of the day or three-quarters of the week.

Special depreciation and investment allowances encourage the accumulation of qualifying assets rather than their efficient use. These allowances discriminate against new firms and those firms undertaking relatively major expansions.

The benefit from special depreciation and investment allowances may be shifted by price and output changes and by changes in the cost of factors of production.

Discounted cash flow decision techniques are sensitive to special depreciation and investment allowances. The sensitivity of the payback and accounting rate of return methods to these allowances depends on the facts of the particular case. In general, these methods are less sensitive than are discounted cash flow methods.

A review of nine studies conducted in three different countries suggested that a significant proportion of firms do not evaluate capital expenditure proposals on an after-tax basis and that capital expenditure decision techniques which are less sensitive to incentives and concessions are more frequently used than those which are sensitive. A small proportion of the participants in these studies were reported to be responsive to allowances similar to special depreciation and investment allowances.

The results of a mail questionnaire survey of fifty-five New Zealand public companies, which sought to determine the extent to which special depreciation and investment allowances influenced the timing, amount or nature of capital expenditure project approvals, were analysed. In respect of the year ended 31 December 1971 or nearest balance date, 9.2 per cent of the participants answered that special depreciation resulted in the acquisition of qualifying assets at an earlier time than would have been the case if that allowance had not been available. These responsive firms accounted for less than five per cent of the capital expenditure undertaken by participants. If special depreciation had been suspended for a period of three to four years from 31 December 1970 it is estimated that the value of capital expenditure projects approved

(other than major projects) by participants in the year ended 31 December 1971 would have decreased by 1.6 per cent. Had special depreciation been abolished, the value of minor capital expenditure projects approved would have decreased by less than 1.4 per cent of actual approvals. In addition, three firms answered that they would have delayed major capital expenditure project approvals had special depreciation been suspended or abolished.

Seventeen per cent of the participants answered that investment allowance resulted in the acquisition of qualifying assets at an earlier time than would have been the case had that allowance not been available. The suspension of investment allowance for three to four years would have decreased the value of minor capital expenditure project approvals by two per cent compared with actual approvals. The abolition of investment allowance would have had a similar effect on the value of minor capital expenditure project approvals to that of the abolition of special depreciation. One firm answered that it would have abandoned major capital expenditure projects if investment allowance were suspended and two other firms answered that they would have delayed such projects.

The above results support the conclusion that special depreciation and investment allowances had little effect on the timing, amount or nature of capital expenditure project approvals of participants in the year ended 31 December 1971 or nearest balance date.

Firms which answered that the most significant constraint on further capital expenditure was an inadequate rate of return on proposals considered were

more responsive to the timing effect of special depreciation than were other firms. Fast-growth firms were also more responsive to the timing effect of that allowance than were other firms. Except for the above, the suspension, abolition or timing effect of special depreciation and of investment allowance was independent of a large number of variables studied.

The results presented in Chapter XIII revealed that sixty-six per cent of the participants regarded the book value of plant and machinery as irrelevant in deciding to sell or scrap significant items of such plant and machinery. A significantly higher proportion of those firms which were responsive to the timing effect of special depreciation answered that they regarded the book value of plant and machinery as relevant to the decision to sell or scrap significant items of such plant and machinery.

A study of depreciation and pricing disclosed that depreciation was traditionally computed at maximum ordinary rates of depreciation for price control purposes. Although special depreciation was not recognised as an admissible cost, taxation was computed as if special depreciation were not claimed. Under this policy prices were neither higher nor lower than they would have been had special depreciation not been available. Special depreciation was recognised as an admissible cost under the Stabilisation of Prices Regulations 1974. It is suggested that under these regulations prices may increase to a greater extent than would have been the case had special depreciation not been available.

Thirty per cent of the companies questioned answered that price control was the most important method of determining the prices of their goods and services. Forty-six per cent answered that some form of cost-plus pricing was the most important method.

The desire to have special depreciation recognised as an admissible cost for price control may have influenced the depreciation policies of public companies in the recent past. The pricing policies of companies may have required the adoption of a particular depreciation policy so that a satisfactory profit is earned from year to year.

The empirical results presented in Part Four are based on the questionnaire survey referred to above. As participants in this survey may differ in some significant way from non participants, the above conclusions apply to participants only. Further research would be required to determine whether the above conclusions also apply to companies in general.

CHAPTER XV  
SUMMARY AND CONCLUSIONS

In Part One, aspects of accounting theory, taxation policy and practice, and law were examined to determine their influence on the depreciation practices of public companies in the recent past.

In historic cost accounting, accounting for depreciation aims to allocate the cost of a tangible fixed asset, less its estimated residual value, over its assessed economic life. Depreciation is allocated to accounting periods in a systematic and rational manner. This process gives expression to the concept of matching costs with revenue as applied to tangible fixed assets.

The diminishing value depreciation method results in a very high depreciation rate if the estimated residual value of an asset is small and if the assessed life of an asset is short.

A claim for depreciation of plant and machinery, computed on the diminishing value method, has been granted since income was first taxed in the 1892-93 income year. Prior to the income year which commenced on 1 April 1940, a taxpayer was permitted to claim a deduction for depreciation without charging a similar amount. From the 1940-41 income year, a taxpayer was entitled to claim in each year, for each class of asset, the lesser of :

- (i) the amount calculated at the schedule rate of depreciation, or
- (ii) the amount of depreciation charged against revenue in his annual accounts.

This change in practice was intended to improve the Commissioner's administration of depreciation claims. Special depreciation, which was introduced with effect from 1 April 1945

was also required to be charged in order to qualify for a claim.

The above ruling may have resulted in the charging of depreciation in excess of that "reasonably necessary for the purpose" and the crediting of such amounts to depreciation provisions rather than to reserves as required by the Eighth Schedule of the Companies Act 1955. There is little evidence of concern by directors or auditors relating to the possible conflict between the requirements of the Eighth Schedule and the desire to minimise taxation.

With effect from the income year which commenced on 1 April 1963, companies were permitted to claim special depreciation without charging a similar amount. This relaxation was extended to ordinary depreciation with effect from the 1968-69 income year.

In Part Two, the annual accounts of one hundred and eleven public companies were analysed. The methods used by the sample companies from 1962 to 1973 (inclusive) to determine the gross amount at which plant and machinery, and buildings were stated, and the methods used to account for depreciation, investment allowance and income tax allocation in respect of differences between depreciation charged and claimed, were examined.

More than ninety per cent of the companies studied stated plant and machinery at historic cost. In contrast, sixty per cent of the companies revalued buildings prior to 1962 or between 1962 and 1973. Forty-one per cent of the companies which revalued buildings did not disclose the basis used and thirty-four per cent restated buildings at the latest Government valuation. Three companies annually revalued plant, machinery and buildings.

Given the findings of Part One, it is not surprising that the diminishing value depreciation method was the most frequently used method of computing depreciation charges on plant and machinery. Two sample companies were known to use a method other than the diminishing value method, prior to 1969. More than fifty per cent of the companies charged ordinary or ordinary plus special depreciation in each year from 1962 to 1973. Up until 1968, only ten per cent of the sample companies took advantage of the Commissioner of Inland Revenue's 1963 ruling that special depreciation could be claimed without charging a similar amount. Since the 1968 ruling (that ordinary depreciation as well as special depreciation could be claimed without charging similar amounts) there has been a significant growth in the use of the straight-line method. In 1973, eighteen per cent of the sample companies used this method. Companies engaged in fixed-capital intensive activities and those companies undertaking relatively major expansions have tended to adopt the straight-line method.

Although less data was disclosed on the methods used to compute depreciation charges on buildings than on the methods used to compute depreciation charges on plant and machinery, it appears that all of the sample companies computed depreciation on buildings on the straight-line method.

Prior to the 1968-69 income year, rulings by the Commissioner of Inland Revenue restricted the ability of companies to generate a "correct" tax-paid charge for depreciation and a "correct" impact on the amount net of accumulated depreciation charge at which plant and machinery was stated. In these circumstances provision for deferred tax may not have resulted in a "true and fair" profit after-tax.

There has been a significant growth in the number of companies which charge less depreciation than that claimed and provide for deferred tax. In 1973, more than fifty per cent of the companies which claimed depreciation in excess of that charged provided for deferred tax. In the balance sheet, most companies which provided a deferred tax credit disclosed accumulated deferred tax credit as a separate item or as a long term liability. A small number of companies generally charged more depreciation than that claimed. None of these companies provided a deferred tax debit.

Investment allowance is a tax gift which, once granted, is not repayable. It does not affect the amount or timing of depreciation claims. It is submitted that accounting theory supports the view that the tax saving arising from claiming investment allowance should be reflected in a lower taxation provision than would otherwise be required in the year in which the allowance is claimed. All of the sample companies which disclosed their method of accounting for investment allowance or answered the relevant question in the questionnaire used this method.

In Part Three the opinions of the participants in the questionnaire survey on the adequacy of rates of depreciation permitted for taxation purposes were reported. It was concluded that participants were of the opinion that, ignoring the question of the replacement of plant and machinery when prices are rising :

- (a) ordinary rates of depreciation on plant and machinery provide at least an adequate allowance for the annual loss caused by fair wear and tear, other than that which can be made good by repairs, and

- (b) ordinary rates of depreciation plus special depreciation on plant and machinery provide at least an adequate allowance for the annual loss caused by fair wear and tear and by obsolescence, other than that which can be made good by repairs.

No statistically significant conclusion could be drawn on the adequacy of ordinary rates of depreciation on buildings for the purposes of providing for fair wear and tear.

The answers given by participants on the adequacy of rates of depreciation permitted for taxation purposes were not related to the size or growth of participants.

The efficacy of special depreciation and investment allowances in stimulating capital expenditure was investigated in Part Four.

Special depreciation and investment allowances were intended to encourage capital outlays on the footing that increased capital expenditure was itself a desirable objective; presumably on the assumption that it would result in increased output and/or more efficient methods of production.

Given realistic assumptions and values for relevant variables, special depreciation increased the net present value of capital expenditure projects by between 1.7 and 4.5 per cent of the cost of the qualifying asset. A ten per cent investment allowance increased the net present value of capital expenditure projects by more than four per cent of the cost of the qualifying asset.

As the discount rate increases, the benefit from special depreciation increases until a maximum is reached at some high discount rate. In contrast, the benefit from investment allowance decreases as the discount rate increases.

The ordinary rate of depreciation permitted for taxation purposes is an important variable in determining the benefit of special depreciation. The higher the ordinary rate of depreciation, the smaller is the proportion of depreciation claims advanced. Thus as the rate of ordinary depreciation increases, the benefit from special depreciation decreases. For this reason, special depreciation discriminates against intensive use of plant and machinery.

Special depreciation and investment allowances encourage the acquisition of qualifying assets rather than their efficient use. Both allowances discriminate against new firms which are unable to earn sufficient taxable income (before claiming special depreciation and investment allowance) to qualify for the maximum taxation saving.

For special depreciation and investment allowances to influence capital expenditure decisions, it is necessary that the capital expenditure decision techniques employed by firms be sensitive to these allowances. Discounted cash flow methods are sensitive to these allowances. The payback period and accounting rate of return methods are less sensitive to special depreciation and investment allowances.

The benefit from special depreciation and investment allowances may be shifted by price and output changes and by changes in the cost of factors of production.

A review of nine investigations undertaken in three different countries suggested that a significant proportion of firms do not evaluate capital expenditure decisions on an after-tax basis and that capital expenditure decision techniques which were less sensitive to incentives and concessions are more frequently used than other techniques. A small proportion of firms surveyed were

reported to be responsive to allowances similar to special depreciation and investment allowances.

In respect of the year ended 31 December 1971, or nearest balance date, 9.2 per cent of the participants (five) in the questionnaire survey of New Zealand public companies, answered that special depreciation resulted in the acquisition of qualifying assets at an earlier time than would have been the case if that allowance had not been available. Firms which were responsive to the timing effect of special depreciation accounted for less than five per cent of the capital expenditure on plant and machinery undertaken by participants. Seventeen per cent of the companies surveyed (nine) were responsive to the timing effect of investment allowance. These firms accounted for eleven per cent of the capital expenditure undertaken by participants.

The five firms which were responsive to the timing effect of special depreciation were also responsive to the similar effect of investment allowance.

If special depreciation or investment allowance had been abolished or suspended for a period of three to four years from 31 December 1970, it is estimated that the value of capital expenditure projects (other than major projects) approved by participants in 1971 would have been two per cent less than the value of actual approvals. In addition, three firms would have delayed major projects if investment allowance had been suspended or special depreciation had been suspended or abolished. The abolition of investment allowance would have resulted in the delay of major projects by two firms and the abandonment by one.

From the above results, it is concluded that the timing and amount of capital expenditure undertaken by participants were influenced to a very minor extent by special depreciation and investment allowance.

ion for price control purposes revealed that prior to 15 July 1974 prices were neither higher nor lower than would have been the case if special depreciation were not available. However, under the Stabilisation of Prices Regulations 1974 special depreciation, in addition to ordinary depreciation, was recognised as an admissible cost in the case of Category B goods and services. Under these Regulations prices may be higher than they would have been had special depreciation not been introduced. Thirty per cent of the participants in the questionnaire survey answered that price control was the most important method of pricing.

Forty-six per cent of the companies surveyed answered that some form of cost-plus pricing was the most important method of pricing. About one-third of these companies indicated that ordinary and special depreciation were included as a cost in setting prices. There is therefore some evidence to suggest that a small proportion of companies surveyed might increase prices if the rate of special depreciation were increased.

The above findings disclose that special depreciation and investment allowances had a very minor effect on the timing and amount of capital expenditure undertaken in 1971 by participants who accounted for about thirty per cent of the capital expenditure on plant and machinery undertaken by establishments surveyed for the Statistics of Industrial Production in 1970-71. It is interesting to speculate whether the single first year depreciation scheme, which replaced special depreciation and investment allowances with effect from 1 April 1975, will provide a greater stimulus to participants' capital outlays.