SOME IMPLICATIONS OF CANADIAN TAX LAW ON GROWTH

Effects of the Capital Cost Allowance Provisions of the Canadian Income Tax Act

by

Roger Pierre Mendels, B.Com.

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Department of Economics and Political Science,
McGill University,
Montreal.

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PREFACE

An examination of some annual reports by Canadian companies reveals a great divergence of opinion as to the proper treatment of the liberal capital cost allowances the Canadian firms are allowed to claim for tax purposes.

Depreciation policies have far-reaching effects not only on the operations of the individual firm but also on the allocation of resources. The writer therefore decided to take a closer look at the implications of the Canadian income tax provisions on the future of the individual firm and of the economy in general. He was encouraged in his endeavour by Professor E. W. Kierans, now President of the Canadian Stock Exchange and the Montreal Stock Exchange. Very helpful comments and suggestions were made by Mr. E. M. Briggs, Supervisor of Taxation, Du Pont of Canada Limited as well as by Mr. T. S. Morse, Assistant Controller of the same company, both of whom read the draft of the thesis. The author further wants to acknowledge the suggestions and pertinent comments made by Mr. G. C. Gibb, Assistant Economist, Du Pont of Canada Limited. The opportunity to use the company's library at all times proved to be a very valuable advantage.

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INTRODUCTION

The provisions of the Income Tax Act relating to capital cost allowances have had and are having a profound impact on the operations of the individual corporation and the national economy as a whole. We shall therefore explore the effects of these allowances on the growth of the individual firm, the industry within which it operates and the whole economy.

The effect of depreciation policies is bound to be most pronounced in capital intensive industries. The chemical industry has therefore been selected as the basis of our enquiry. Not only is the chemical industry one of the most capital intensive industries, but it is also a rapidly growing industry so that the two most important factors to be considered in relation to the capital cost allowance features of the Income Tax Act will be duly considered.[1]

CHAPTER I

THE LAW

A) FEDERAL

PRE - 1949

Under the provisions of the Taxing Statutes preceding the 1948 Income Tax Act, the rate of depreciation approved by the Minister for a particular asset was applied to that asset until it was fully depreciated. There was no uniform rate in existence and the depreciation charged in the books had to coincide with the amount claimed for tax purposes. Furthermore, the depreciation charge was calculated on the straight-line basis, i.e. the charge to income did not vary over the years, being a certain percentage of the original cost of the asset.

No allowance was deductible from income in respect to losses in value of assets from causes other than wear and tear or diminution in value through the use of the asset in producing income. In other words, no allowance could be made for obsolescence. If an asset became obsolete before it was fully depreciated, the taxpayer was not allowed to charge the balance of the capital cost against income. This was a severe limitation especially in an economy characterized by rapid technological progress.

THE INCOME TAX ACT 1948

The capital cost allowance provisions of the 1948 Act which was applicable to 1949 and subsequent taxation years marked a

drastic change in the method permitted in calculating the charges against income. The Act establishes a positive right to deduct capital cost allowances as determined by regulation. Order-in-Council PC.6471, as amended, defines sec. 11 (1)(a) of the Act by providing as follows

(a) the diminishing balance system of depreciation is established.

(b) the amount of the allowance is no longer restricted to the amount shown in the taxpayer's books of account. (1954)

(c) the taxpayer may reduce the rates from time to time, and, in any one year, he may take no capital cost allowance should this appear advantageous to him.

(d) the present capital cost allowance provisions permit the businessman to recover the full amount of the capital cost of an asset to him, not only the depreciation on his asset. If a depreciable asset is disposed of at less than its undepreciated capital cost, the resulting loss may be charged against income. Conversely, if the asset is disposed of at an amount exceeding its undepreciated capital cost, then under the recapture provisions of the Act the excess will be considered income. Any amount over and above the excess, however, is not so recaptured since it is actually a capital gain, which is not taxable.[2]

(e) assets are divided into some 18 classes and a maximum rate varying from 4 percent to 100 percent is stated for each

class. The taxpayer, however, may, at his option, adopt one general classification for all his assets falling within the classes 2 to 12 and charge a uniform rate of 4%, i.e. all his assets will be included in class I.[3]

However there are limitations to these provisions. If an asset is included in one of the 18 classes set up by regulation and the asset is disposed of, the loss can be charged against income only if the asset is the only or last one in the class. Otherwise, the businessman must continue to claim depreciation on the asset, although it is no longer in existence as far as he is concerned.

B) PROVINCIAL

In 1952, the Province of Quebec started to levy her own corporation income taxes. While the federal authorities allow a tax credit for Quebec taxes paid, there may be an additional tax liability for corporations operating in the province due to the fact that Quebec does not follow the federal methods of income determination. In other words, the taxpayer will have to maintain separate books of accounts. Quebec does not allow depreciation charges computed on a diminishing balance. Furthermore, the depreciation claimed for taxation purposes cannot be greater than the charges set up in the books.

The Province of Ontario entered the corporate taxation field in 1957. The Ontario Statutes follow the federal

legislation very closely; the provisions relating to capital cost allowances are identical to the federal provisions. (It should be pointed out, however, that the present Ontario tax rate is 11% while the federal credit allowed is only 9%).

While provincial taxes are a definite feature to be taken into account by businessmen, their effect will be ignored throughout this thesis, not because their impact is small in relation to the federal regulations, but because they do not apply uniformly throughout the country, making it thus impossible to generalize their incidence.

CHAPTER II

IMPLICATIONS AND EFFECTS OF THE CAPITAL COST ALLOWANCE PROVISIONS.

Any decision as to the treatment of the capital cost allowances is basically a policy decision. Capital cost allowances have to be considered in line with other corporate objectives such as investment and growth policies pursued by the firm. The Canadian tax legislation gives management a high degree of flexibility as far as profit determination is concerned. Needless to say that a book profit inflated or deflated due to the capital cost allowances may have nothing to do with an economic profit and may consequently have a very marked effect on the future operations of the firm.

If we examine at random some annual reports of Canadian Companies we see that opinions vary greatly as to the appropriate treatment of capital cost allowances. While some companies consider as current income the funds retained by claiming greater capital cost allowances for tax purposes than they charge on their books, others set up deferred liability accounts figuring that at some time in the future the taxes currently saved will become payable. Many companies have adopted compromise policies, e.g. by setting up a dollar limit on their deferred liability and taking into income every saving in excess of that amount.

1 ACCOUNTING TREATMENT OF THE CURRENT TAX SAVINGS.

The Committee on Accounting and Auditing Research of the

Canadian Institute of Chartered Accountants, in their bulletin No. 10 released in September 1954, recommended the following treatment of the savings:

a) Minimum Disclosure

Notes to the statements which would show

1) the extent to which taxes otherwise payable were reduced or increased

2) the net accumulated amount of such reduction for the year under review

b) Preferred Treatment

Reflect the tax reduction in the statements, reducing the net profit for the year and showing the accumulated reserve on the balance sheet.

While b) was adopted by the Committe as the most satisfactory treatment of the current tax reduction, it was not adopted unanimously. Mr. G. M. Smith felt that in most cases net income for the year should be determined after charging as income tax the amount payable on the estimated taxable income for that year, even though such tax has been materially affected by a difference between capital cost allowance claimed and recorded depreciation.

The Committee's recommendations have been implemented by a large number of companies, and, at least during the period of time following the repeal of Income Tax Regulation 1100(4) in 1954, there seemed little reason not to accept the Institute's recommendation as

the ideal solution. However, after a very short lapse of time, many firms began to realize that the accumulation of a deferred liability account could, providing certain prerequisites were met, go on forever, i.e. it became apparent that any reserve set up in the books for future taxes might possibly never be used up. And deviations from the recommended practice appeared as shown by the following few examples:[4]

British-American Oil Company Limited set up a deferred liability account during the years 1954 and 1955. In 1956 the account amounting to $2,500,000 was transferred to Retained Earnings i.e. to the Capital Account and the 1956 and subsequent tax savings were taken in as income for the year.

Canadian Industries Limited set up a liability amounting to $2,713,000 by the end of 1955. Considering this amount sufficient to cover any future tax liability, the company, starting in 1956, credited income with all the savings made because of the capital cost allowances.

Other companies adopted still different methods. The Steel Company of Canada Limited does not set up different books of account for income and tax liability determination. The company charges on its books an amount of depreciation equal to the amount of capital cost claimed for income tax purposes. Texaco, up to 1958, used the diminishing balance method for computing depreciation both for income and tax purposes. In 1958 the company switched to straight-line depreci-

ation in the books while it retained the diminishing balance method to calculate its tax liability.

Still other companies continued to build up their deferred liability account setting aside substantial amounts for taxes applicable to future years. Examples are Imperial Oil Limited and Dupont of Canada Limited.

These few examples show clearly the divergence of views even among firms within the same industry concerning the proper treatment of the capital cost allowance provisions of the Income Tax Act. And the variety of solutions adopted points to the conclusion that in quite a few cases the full implications of the current tax saving on the future of the firm are not fully realized.

11 COPORATE POLICY AND CAPITAL COST ALLOWANCES.

Since no corporation intent on surviving in a era of rapid technological change and development can afford to ignore the effect of decisions relating to conditions of to-day on conditions of to-morrow, the capital cost allowance provisions of the Income Tax Act assume a position of prime importance in the decision making process of management. Indications point to the fact that companies have come to realize this point. The decision to take any current tax saving into income was most likely taken by companies convinced that there would never be any future tax liability arising out of the fact that they claim excess depreciation for tax purposes. Having analysed the accumulation of the reserve over the years together with their

projected expansion programs, they have come to the conclusion that their future growth will make a reserve superfluous. Fine, but what about to-day's income? What if a recession should set in requiring a check on expansion? Even if the latter possibility was discarded, what about the purpose for which depreciation reserves are set up anyway? What about inflation? These are questions the answers to which are not so obvious and I wonder if the firms having made their policy decisions with respect to the treatment of the tax saving have explored all the implications of their action. In the following chapters I shall try to outline some of the problems arising out of the alternative solutions to the problems posed by the Canadian legislation.

CHAPTER III

TAX DEFERRAL AND TAX SAVING.

The amount of the current tax saving made by the firm is a function of four variables: the rate of depreciation charged in its books by the company, the rate of capital cost allowance permitted by the taxation authorities, the corporate income tax rate, and the rate of capital expansion by the firm. Symbolically

$$TS = f\ (CCA,\ D, r, g)$$

where: TS = amount of taxes saved

CCA = rate of capital cost allowance

D = depreciation charged by the company according to economic life expectations.

r = tax rate.

g = rate of growth.

Of these variables, two are determined as far as the firm is concerned since they are fixed by law: the maximum rate of capital cost allowance that the company can claim for tax purposes and the rate of income tax. The firm, with certain limitations,[5] has authority to set and change the other two: the depreciation charged on the books and capital expansion. In other words, the tax saved as far as the individual business is concerned becomes a function of the

depreciation that the company charges in the books and its rate of growth:

$$TS = f(D,g)$$

Table 1 illustrates the relationship between capital cost allowances for tax purposes and straight-line book depreciation:

Table 1.

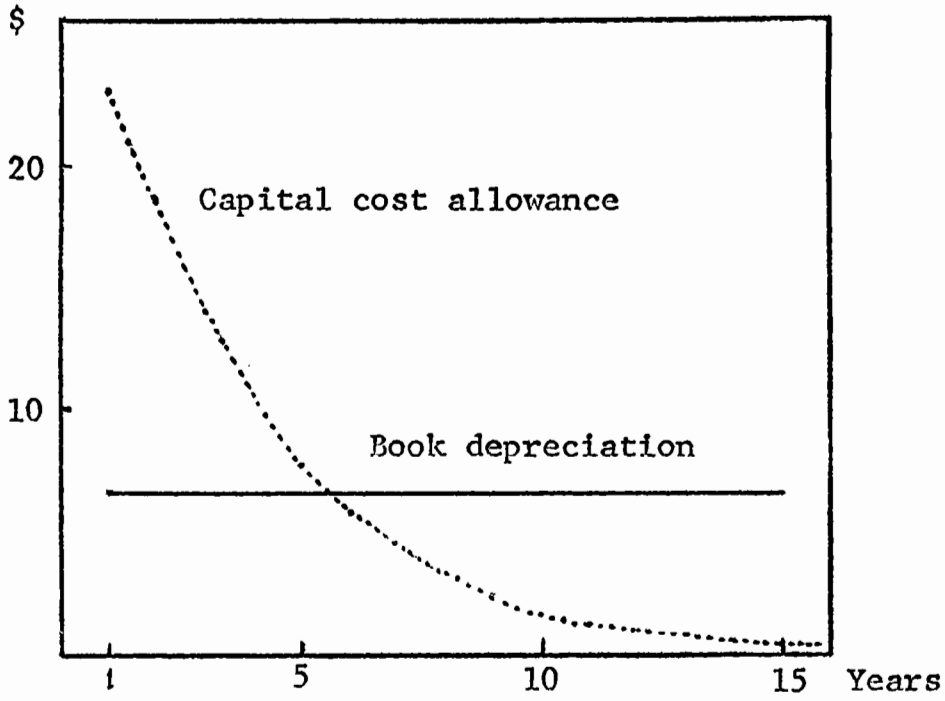
Asset costing $ 100.

Year	Capital Cost Allowance 1	Unclaimed Capital Cost	Book Depreciation 2	Underpreciated Cost.
1	25.00	75.00	6.67	93.33
2	18.75	56.25	6.66	86.67
3	14.06	42.19	6.67	80.00
4	10.55	31.64	6.66	73.34
5	7.91	23.73	6.67	66.67
6	5.93	17.80	6.66	60.01
7	4.45	13.35	6.67	53.34
8	3.34	10.01	6.66	46.68
9	2.50	7.51	6.67	40.01
10	1.88	5.63	6.66	33.35
11	1.41	4.22	6.67	26.58
12	1.05	3.17	6.67	20.01
13	0.79	2.38	6.67	13.34
14	0.60	1.78	6.67	6.67
15	0.44	1.34	6.67	---

1 a rate of 25% has been selected at random.
2 assuming a life span of 15 years, 100/15 or 6,66-7% will be written off annually if the straight-line method of depreciation is followed.

Assuming that the 15 year life-span represents the economic life of the asset, we can see from Chart 1 the effect of the capital cost allowance diminishing-balance method and the straight-line method: over the first five years the businessman makes a tax

CHART 1
RELATIONSHIP BETWEEN C.C.A. AND BOOK DEPRECIATION
Asset costing $ 100
(CCA = 25% Book depreciation = 6.7%)



Source: Author's calculations

saving which is reversed during the later life of the asset.[6] The net amount of the saving during the first year is as follows:

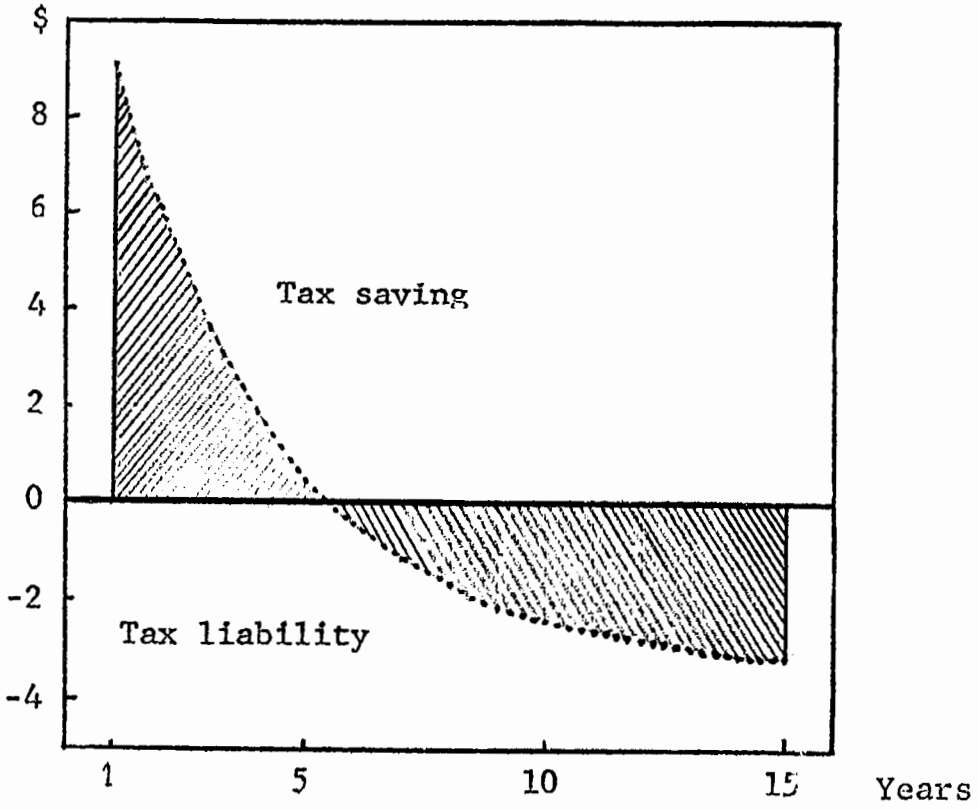
Operating profit	$100.00
Book depreciation	$ 6.67
	$ 93.33
Income tax	$ 46.66

Tax saving (either set up as a deferred liability or taken into income):

Operating profit	$100.00
capital cost allowance	$ 25.00
	$ 75.00
Income tax	$ 37.50
Tax saving (46.66-37.50)	$ 9.16

It is apparent from Chart 1, that if the businessman had selected a different rate of book depreciation this saving would have been greater (smaller) depending on whether the book rate had been smaller (greater). Furthermore, Chart 2 shows that the saving is concentrated over the first 5 years of the asset's life. In other words, the saving is substantial during the initial third of the asset's life-span, whereas the liability offsetting this saving during the last 10 years is much further spread.

CHART 2
EFFECT OF DIFFERING CCA AND BOOK DEPRECIATION
Asset costing $ 100
(CCA = 25%; Book depreciation = 6.7%)



Source: Author's calculations.

This example illustrates the relationship between capital cost allowance and depreciation. Since it is obvious that the saving can be made only during the initial years of the life of the asset, the dependence of the saving on the rate of capital expansion undertaken by the firm becomes apparent. Without any further capital investment the saving ceases after a certain period of time (5 years in our example). If, on the other hand, the firm continues to expand the saving can go on forever. This is why many companies, not wanting to set up a continuously growing reserve, tend to include the saving into their current net income.

The relationship between the rate of growth and tax saving becomes clear from the Table 2 and Chart 3.

We can see that both the capital cost allowance and book depreciation approach the value of $ 100.00 at the end of the 15 year period, i.e. by the time the first additional investment of $ 100.00 is fully written off.[7] In other words, by the time the first injection is written off, there will be no more saving possible and after the 5th year the amount of the tax saving declines. The same conclusion would not hold if instead of a steady investment of the same amount the company had expanded at a geometric rate of growth.

It is clear that as long as the company keeps expanding at a rate in excess of the book depreciation, the tax saving will continue. (Chart 4)

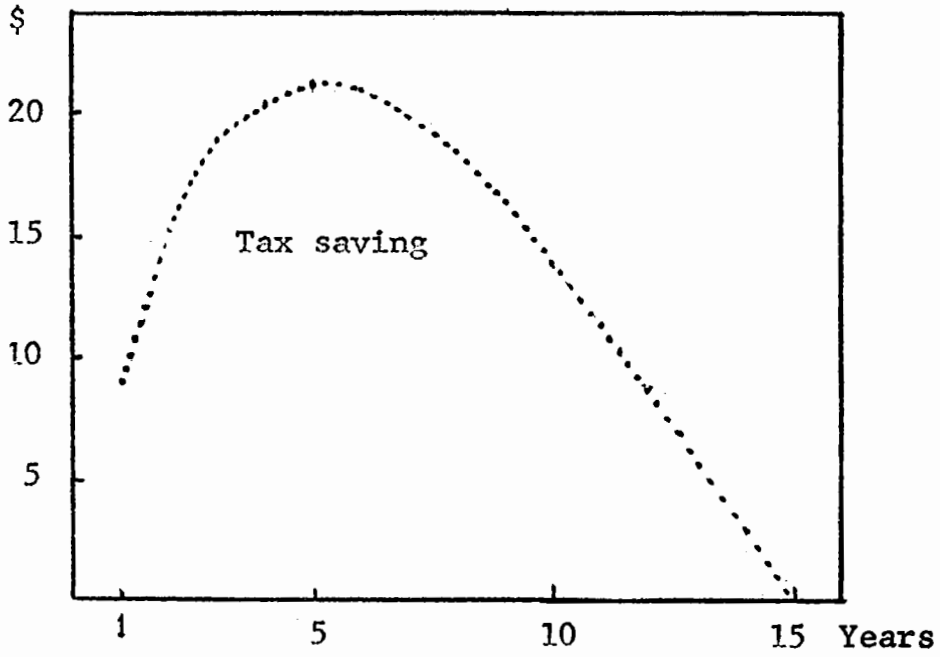
Table 2.

Year	New Investment	C.C.A.	Book Depreciation	Excess C.C.A. over book dep.	Tax Saving.
1	100	25.00	6.67	18.33	9.16
2	100	43.75	13.33	30.42	15.21
3	100	57.81	20.00	37.81	18.90
4	100	68.36	26.66	41.70	20.35
5	100	76.27	33.33	42.94	21.47
6	100	82.20	39.99	42.21	21.10
7	100	68.65	46.66	39.99	19.99
8	100	89.99	53.32	36.67	18.33
9	100	92.49	59.99	32.50	16.25
10	100	94.37	66.65	27.72	13.86
11	100	95.78	73.32	22.46	11.23
12	100	96.83	79.99	16.84	8.42
13	100	97.62	86.66	10.96	5.48
14	100	98.22	93.33	4.89	2.44
15	100	98.66	100.00	-- --	- --

Thus an annual rate of growth of say 8% will permit the company to save indefinitely on its taxes if its rate of book depreciation is below this 8% rate of expansion (the rate of book depreciation can be either on a straight-line or a diminishing balance method)[8].

From the foregoing it follows that it is quite possible for a company to build up a reserve for future liabilities that it is never going to use up, even a reserve that keeps on expanding indefinitely.

Chart 3
TAX SAVING REALIZED WITH ARITHMETIC RATE OF GROWTH ($ 100 per year)
(CCA = 25%; Book depreciation = 6.7%)



Source: Author's calculations.

As long as a company can claim tax depreciation in excess of the amounts set up in the books, it will be able to save on its current payments. This condition is met as long as we have:

$$\text{CCA} > \text{Book depreciation}$$

Assuming a rate of capital cost allowance of 25% and a rate of book depreciation of 6.7% we can express this condition as follows:

Year 1: $I\ (0.25) > I\ (0.067)$

Year 2: $I\ (1-0.25)(0.25) > I\ (0.067)$

Year 3: $I\ (1-0.25)^2(0.25) > I\ (0.067)$

...

Year n: $I\ (1-0.25)^{n-1}(0.25) > I\ (0.067)$

for $n \leqslant N$ we finally have

$$I\ (1-c)^{n-1}c > Id \qquad \text{and}$$

for $n > N$

$$I\ (1-c)^{n-1}c > 0$$

where I is the value of the asset to be depreciated
c the diminishing-balance rate of depreciation allowed for income tax purposes
d the rate of book depreciation equal to $\frac{1}{N}$ where N is the economic life of the asset (e.g. if the economic life of a particular asset is 15 years, the rate of book depreciation will be $\frac{1}{15} = 0.067$. Book depreciation could be calculated on a diminishing-balance basis too) If $n > N$, then Id becomes zero as the asset has been fully depreciated.

If now the company makes the same investment I every year (see table 2, page 16), the saving will continue as long as

$$\sum_{i=1}^{n} I\ (1-c)^{i-1}\ c > Idn \qquad \text{where } n < N$$

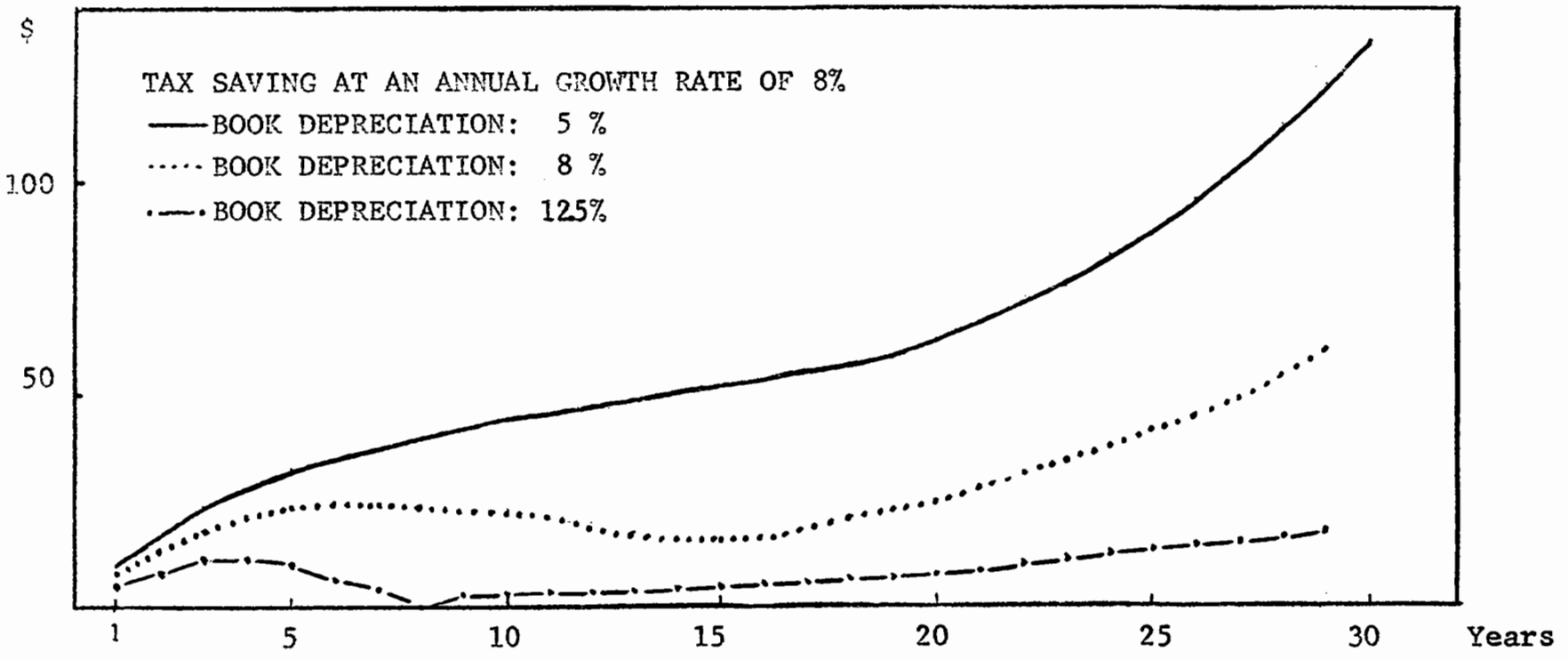
For $n = N$
$Idn = I\frac{1}{N}\ N = I$ and no more savings will be possible as $\sum_{i=1}^{n} I(1-c)^{i-1}\ c$ will equal I only at infinity.

For $n > N$
Idn will still equal I as an asset cannot be depreciated more than 100%.

CHART 4

TAX SAVING REALIZED WITH A GEOMETRIC RATE OF GROWTH

(CCA = 25%)



Source: Author's calculations

With a geometric rate of capital expansion r, the investment for any year n will be:

$$I\ (1+r)^{n-1}$$

and the capital cost allowance will be:

$$I(1+r)^{n-1}(1-c)^{n-n}c + I(1+r)^{n-2}(1-c)^{n-(n-1)}c + \ldots\ I(1+r)^{n-n}(1-c)^{n-1}\ c$$

If no reversal of the tax savings is to occur we must have:

$$Ic\left[(1+r)^{n-1}(1-c)^{n-n} + (1+r)^{n-2}(1-c)^{n-(n-1)} + \ldots\ (1+r)^{n-n}(1-c)^{n-1}\right] \rangle \sum_{i=n-N>0}^{n} I(1+r)^{i-1}\ d$$

$$Ic \sum_{i=0}^{n-1} (1+r)^{n-i-1}(1-c) \rangle \sum_{i=n-N>0}^{n} (1+r)^{i-1}\ Id$$

$$\frac{c}{d} \sum_{i=0}^{n-1} (1+r)^{n-i-1}(1-c)^{i} - \sum_{i=n-N>0}^{n} (1+r)^{i-1} \rangle 0$$

No reversal of the tax saving will be possible as long as this equation holds. In other words, with given values of c, r and d the firm will be able to determine the magnitude of any tax saving it can make due to the capital cost allowances.

These examples have illustrated the relationship between tax and book depreciation. In order to take advantage of the tax savings offered, the firm thus has to grow and expand continuously. The impact of this incentive feature will be explored in the following chapters.

CHAPTER IV

CAPITAL COST ALLOWANCES AND INVESTMENT.

Considerable controversy and concern has recently been aroused concerning Canada's rapid post-war growth and expansion. One of the main points of contention being the rapidly growing burden of international indebtedness the country has to bear.[9] While a discussion of these problems is beyond the scope of this thesis, they are mentioned here in order to stress the fact that Canada's growth has been spectacular, as witnessed by the controversy over foreign investment within the country.

Nobody is willing to invest his funds in a foreign country unless the business conditions in that country are favourable. And a number of conditions have to be met before an investment abroad offers enough incentives to overcome the investor's (We are not concerned with the speculator here) natural preference for his own country: the political climate has to be favourable and stable, the rate of growth of the country's economy has to seem assured, tax laws have to be appropriate etc. Canada is offering excellent investment opportunities because it meets these prerequisites. This fact, unfortunately, makes it impossible to examine the precise impact of any one factor alone on capital growth. It is therefore impossible to isolate the impact of the capital cost allowance provisions on investment. Only one thing is certain: they have been a definite contributing factor to the capital growth of a

young country.

Capital expenditures in Canada have increased substantially since 1946, as is apparent from table 3.

TABLE 3

CAPITAL EXPENDITURES, CANADA 1946-60
(million dollars)

Year	Construction	Machinery & Equipment	Total
1946	1,044	630	1,674
1947	1,397	1,043	2,440
1948	1,824	1,263	3,087
1949	2,166	1,373	3,539
1950	2,453	1,483	3,936
1951	2,871	1,868	4,739
1952	3,434	2,057	5,491
1953	3,756	2,220	5,976
1954	3,737	1,984	5,721
1955	4,169	2,075	6,244
1956	5,273	2,761	8,034
1957	5,784	2,933	8,717
1958	5,830	2,534	8,364
1959 1	5,798	2,613	8,411
1960 2	5,942	2,828	8,770

1 preliminary
2 intentions

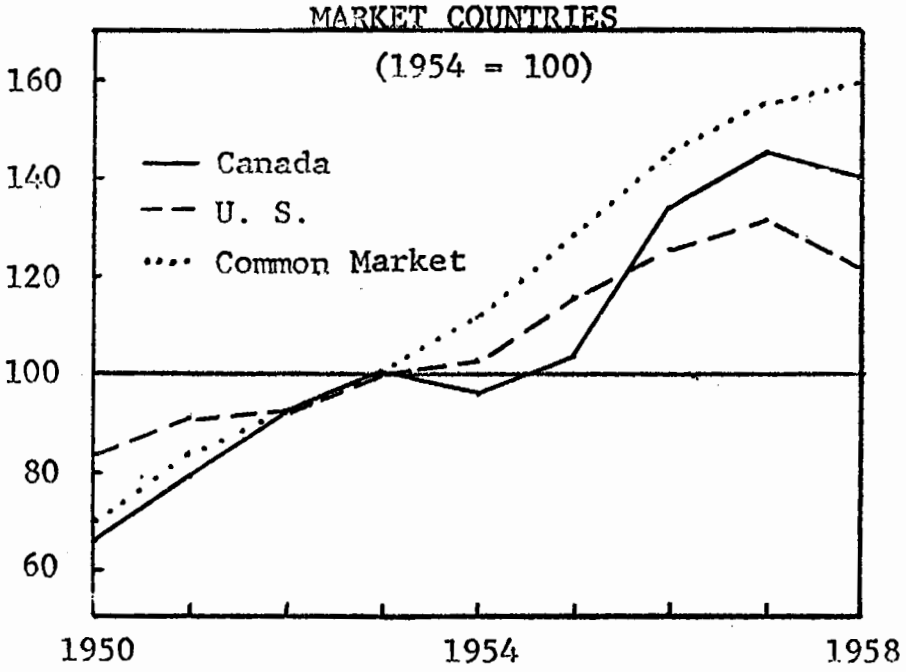
Sources Dominion Bureau of Statistics
Department of Trade and Commerce.

Thus, over the last 15 years, capital expenditures have risen 424%, an annual increase of 12%. In relation to GNP this is certainly a rate higher than the one at which most countries have expanded during the same period. (Charts 5 and 6).

It would be misleading to believe that this spectacular growth was uniform throughout the whole economy. A number of industries

CHART 5

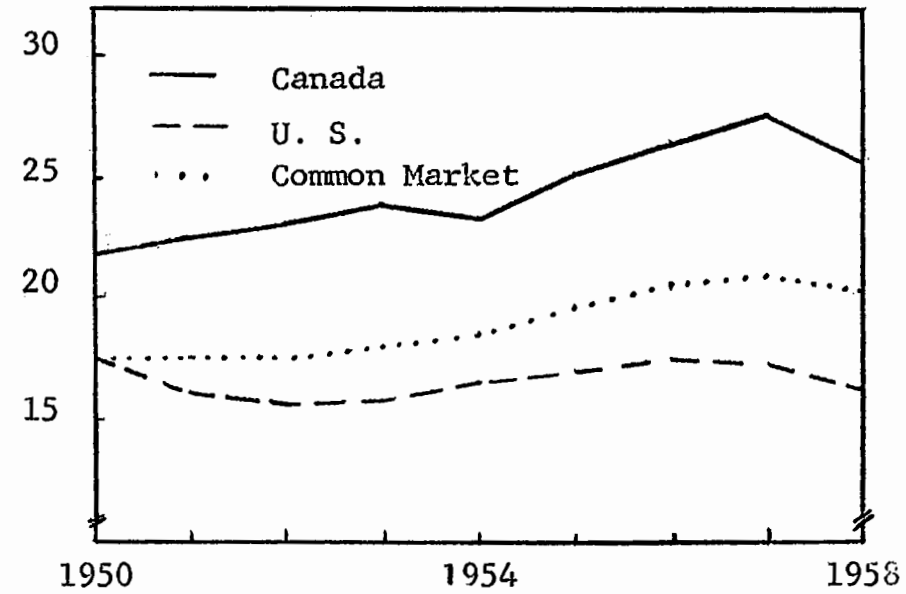
GROSS FIXED CAPITAL FORMATION
CANADA, UNITED STATES
AND EUROPEAN COMMON
MARKET COUNTRIES



Source: CANADA: Dominion Bureau of Statistics,
National Accounts
UNITED STATES AND COMMON MARKET: National
Industrial Conference Board

CHART 6

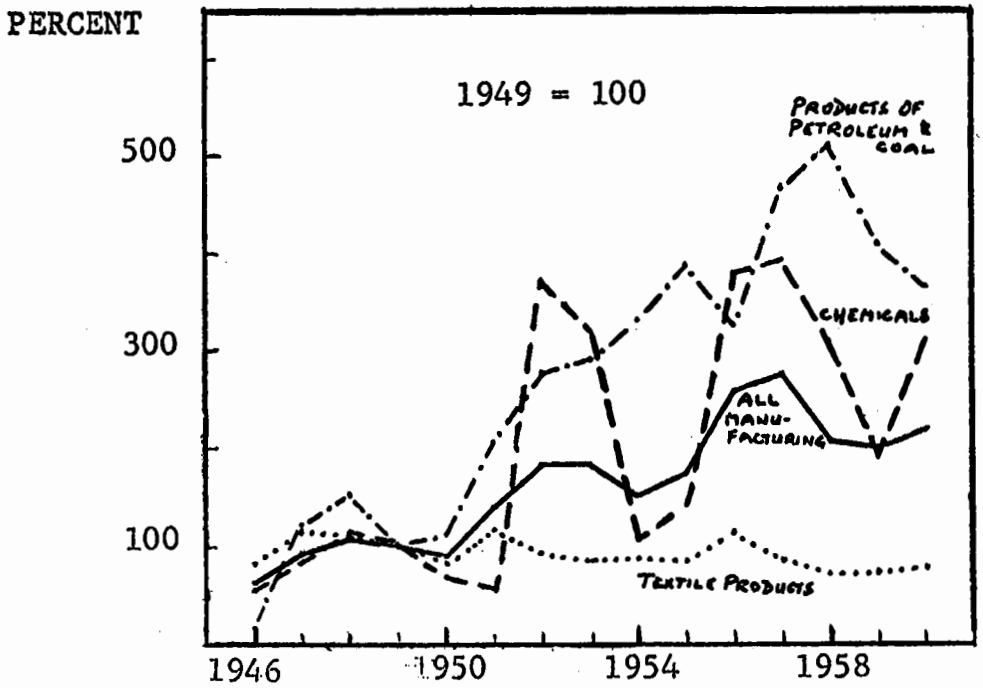
GROSS CAPITAL FORMATION AS A PERCENT OF GNP



SOURCE - SEE CHART 5

experienced a slower growth, with the more dynamic ones outshooting them by a wide margin. (Chart 7)

CHART 7
CAPITAL EXPENDITURES: 1946-60
SELECTED INDUSTRIES
(CURRENT DOLLARS)



Source: Dominion Bureau of Statistics
Department of Trade & Commerce.

The chemical industry has been one of the fastest growing industries during the period 1946-60. And since the rate of growth is a predominent factor determing any possible tax deferral, we shall take a closer look at this industry in order to determine the effect of the capital cost allowance provisions.

Since 1946, investment by the chemical industry has been growing at an annual rate of 13%. Furthermore, chemical

investment is more and more being concentrated in machinery and equipment as can be seen from Table 4 and Chart 8.

TABLE 4

CHEMICAL INDUSTRY.
CAPITAL EXPENDITURES, 1946-60.
(million dollars)

Year	Construction	Cumulative Total	Machinery & Equipment	Cumulative Total	Total Invest.
1946	11.6	11.6	8.0	8.0	19.6
1947	14.4	26.0	19.3	27.3	53.3
1948	15.0	41.0	26.9	54.2	95.2
1949	11.9	52.9	25.9	80.1	133.0
1950	7.3	60.2	19.0	99.1	159.3
1951	19.2	79.4	38.5	137.6	217.0
1952	61.2	140.6	79.8	217.4	358.0
1953	32.0	172.6	90.3	307.7	480.3
1954	15.1	187.7	24.7	332.4	520.1
1955	21.6	209.3	34.7	367.1	576.4
1956	57.9	267.2	87.0	454.1	721.3
1957	65.6	332.8	84.1	538.2	871.0
1958	43.1	375.9	73.5	611.7	987.6
1959 1	24.4	400.3	49.7	661.4	1061.7
1960 2	34.0	434.3	86.6	748.0	1182.3

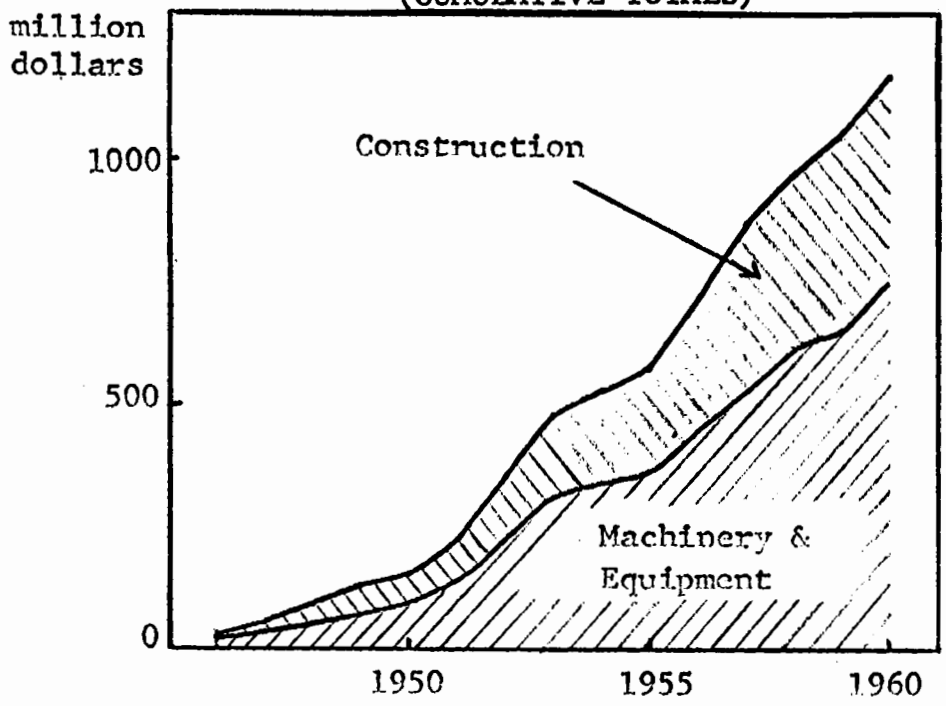
1 preliminary 2 intentions

Source: See Table 3

This fact is of importance because the capital cost allowance rate that can be claimed for machinery and equipment is higher than the rate permitted for buildings (20% vs. 5-10% depending on the structure of the building). So that the chemical industry is in a position to make greater tax savings than most other industries.

Already one of the most capital intensive industries

CHART 8
CHEMICAL INDUSTRY
CAPITAL EXPENDITURES 1946-60.
(CUMULATIVE TOTALS)



Source: see Table 3

(Table 5), the chemical industry can be expected to increase further its use of capital as the most capital intensive segments of the industry are also the most dynamic and fastest growing. (Table 6)[10]

Two companies account for a large part of Canada's chemical output: Canadian Industries Limited and DuPont of Canada Limited. Furthermore, as these two companies have adopted different methods of treatment of the tax saving, I am going to consider them as representatives of the whole industry and examine the effect of the capital cost allowance provisions on the operations of these two firms.

TABLE 5

SELECTED INDUSTRIES

INVESTMENT AT ORIGINAL COST
1959

	Total ($ million)	Per Employee ($)
Manufacturing-Total	13,404	10,200
CHEMICALS	1,490	27,700
Products of Petroleum and Coal & Non-metallic Mineral Products	1,714	28,100
Paper Products	1,843	19,600
Iron & Steel Products	1,512	7,900
Textile Products	499	7,800
Transportation Equipment	735	6,400
Clothing	199	2,200
Mining	3,613	32,100
Agriculture & Fishing	5,929	7,900
Forestry	539	5,700

Source: Dominion Bureau of Statistics.[11]

Canadian Industries Limited started to take the tax saving into income after having accumulated a reserve for future taxes amounting to $2.7 million. The annual additions to net income amounted to:[12]

1956	$1,858,000
1957	$2,079,000
1958	$1,416,000
1959	$ 695,000

TABLE 6

CHEMICAL INDUSTRY

INVESTMENT AT ORIGINAL COST
1959

	Total ($ million)	Per Employee ($)
Acids, Alkalies & Salts	492	47,400
Compressed Gases	45	29,500
Primary Plastics	104	29,300
Fertilizers	57	18,800
Coal tar distillation	7	16,400
Detergents & washing compounds	23	9,400
Polishes & dressings	8	8,600
Inks	7	6,700
Paints & Varnishes	38	6,100

Source: Dominion Bureau of Statistics.[11]

The company's policy, in effect, amounts to a lowering of the effective federal tax rate below the 47-50% rate in effect during the period. But this is not the only effect the company's policy has. Even if CIL's anticipation that the $2.7 million will cover any further tax liability was accurate, current income would still be distorted substantially. In effect, if the rate of capital expansion were to fall to a point where the company has to use the reserve set aside, the effective tax rate would still increase from the present low to the full rate. This becomes obvious from the following example:

Operating earnings	$1,000,000.
Book depreciation	300,000.
Taxable income	700,000.
Income tax thereon	350,000.
Net earnings	$ 350,000.

If now the capital cost allowance for the year in question is smaller than the $ 300,000 depreciation charged on the books, the company will be affected as follows:

Operating earnings	$1,000,000.
Capital cost allowance	200,000.
Taxable income	800,000.
Income tax thereon	400,000.
Net earnings	$ 400,000.

The smaller capital cost allowance increases taxable income for the year by $ 100,000. Even if the tax liability of $50,000.00 on that amount is charged against the reserve, the tax rate on the book profit is still 50%, higher than the amount previously charged to income. It is thus obvious that the method followed by the company in computing net income distorts the latter figure during the years where a real tax saving is made. This fact becomes particularly serious when the saving is paid out as dividends, in which case the company as a matter of fact pays out funds that are in reality capital funds - as we shall see later.

Du Pont of Canada Limited, on the other hand, has been consistently following the treatment recommended by the Committee

on Auditing and Research of the Canadian Institute of Chartered Accountants. The reserve set up by the company for possible future liabilities has grown each year by the following amounts:[13]

1954	$ 198,100.
1955	333,200.
1956	766,417.
1957	1,432,400.
1958	1,150,000.
1959	1,143,000.

Here we have an approach quite different from the one followed by the company's competitors. The main advantage of Du Pont's policy from an income determination point of view is that the company's earnings over the years are not distorted due to tax savings. It should be noted, however, that Du Pont just as well as CIL recovers substantial amounts of cash due to reduced current tax payments.

Depreciation reserves have always been a major source of funds for expansion. Around 80% of the U.S. chemical industry's capital expenditures are financed from depreciation reserves.[14] With Canadian capital cost allowances exceeding the rates permitted in the United States by the Internal Revenue Service, it can be expected that they assume an even greater proportion in Canada.[15] The implications of this fact are clear: the Canadian system of tax determination is more conducive to capital expansion than the method used in the United States. When businessmen south of the border complain that not enough is allowed for depreciation they usually

aim at two basic points: (1) the present policies do not take into account the actual replacement cost of modern machinery and equipment, and (2) they do not recognize the swift and increasing pace of obsolescence.[16] These points are undoubtedly well taken and they give a good indication of the advantages enjoyed by the Canadian business. It seems therefore difficult to understand why Canadian companies use these advantages to swell their income, laying themselves open to pressures by the shareholders for greater dividends. (It should be remembered too, that many companies have in existence employee bonus plans, and the amount of bonus allocated to officers is usually a direct function of the net income for the year.)

Many complaints have been voiced concerning the failure of the governments to allow the firms to make provisions for the ever increasing replacement costs of plant and equipment. While no construction cost index is published by the Dominion Bureau of Statistics, an examination of the relevant price indices for the components used in buildings and equipment gives a clear indication of the amount of inflation over the past 15 years.[17] (Table 7)

The problem posed by inflation is accurately stated in Du Pont's Annual Report to the shareholders for 1959:

> The investment figures contained in financial statements show the cost of the assets at the time they were acquired. The inflation of recent years, which continues to erode money values, has had an effect on financial results which is not recorded in the statements. Because construction and equipment costs have continued

to rise, and are now 122% above 1945 levels, the cost of building the company's plants and properties, expressed in 1959 dollars, would be $138,000,000 instead of the $106,000,000 shown in the balance sheet. Current revenues are received in current dollars, so that depreciation costs charged against these revenues should also be expressed in current values rather than in terms of original costs. On this basis depreciation would have been $7,760,000 for 1959, or $1,850,000 more than was actually set aside.

TABLE 7

SELECTED COST INDICATORS
1949=100

	Wholesale Prices of		Average Hourly Earnings (Construction)
	Non-Residential Building Materials	Rolling Mill Products	
1945	71.4	70.8	73.3
1946	75.0	78.3	76.2
1947	84.5	82.7	84.2
1948	95.9	93.2	93.1
1949	100.0	100.0	100.0
1950	105.0	106.3	105.0
1951	118.6	119.8	117.8
1952	123.2	127.0	130.7
1953	124.4	130.5	142.6
1954	121.8	128.3	146.5
1955	123.4	130.3	150.5
1956	128.0	138.6	163.4
1957	130.0	150.3	174.3
1958	129.8	153.6	176.2
1959	131.7	155.3	182.2

Source: Dominion Bureau of Statistics

If replacement value were the basis for calculating depreciation charges, then these charges would increase yearly, i.e. they would increase by the amount of inflation taking place.

Since this procedure is nowhere permitted by law, capital erosion becomes a real problem to the firm. But Canadian companies are more fortunate than most of their counterparts abroad. The greater capital cost allowances permitted during the initial life of their properties could be used as a cushion against inflation, for the earlier savings are savings made in dollars having greater purchasing power. Instead of accumulating a reserve for future taxes that quite possibly will never be used up entirely, the funds saved could be earmarked as a cushion against inflation. But will the tax saving be sufficient to offset the losses suffered by the firm through inflation? Du Pont's Report to the shareholders puts the understatement of depreciation charges for 1959 at $1,850,000. During the same year the reserve for future taxes was increased by $1,143,000 which means that tax depreciation exceeded book depre-= ciation by approximately double this amount. In other words, the company could have fully offset the losses suffered through inflation during the year in question.

We can estimate the amount of the yearly losses through inflation by constructing a capital cost index for the chemical industry (Table 8) and by applying this index to the assets of a particular company. Canadian Industries Limited and its two successor companies (1954) Canadian Industries Limited and Du Pont of Canada Limited will serve us again as an example (Tables 9 and 10)

TABLE 8

INDEX OF PLANT AND EQUIPMENT COST

CHEMICAL INDUSTRY
(1949=100)

	Construction	Machinery & Equipment	Total Index
1945	72.1	70.8	71.3
1946	75.5	78.3	77.2
1947	84.4	82.7	83.3
1948	94.9	93.2	93.8
1949	100.0	100.0	100.0
1950	105.1	106.3	105.9
1951	118.3	119.8	119.3
1952	125.8	127.0	126.5
1953	130.8	130.5	130.6
1954	130.5	128.3	129.1
1955	132.9	130.3	131.3
1956	140.4	138.6	139.2
1957	145.5	150.3	148.5
1958	146.1	153.6	150.9
1959	149.4	155.3	153.1

Total Increase 1945-1959: 115%
Annual Increase 1945-1959: 5.6%

Source: Dominion Bureau of Statistics.[18]

TABLE 9

CANADIAN INDUSTRIES LIMITED

ESTIMATED CAPITAL LOSSES THROUGH INFLATION
(Million $)

	Fixed Assets		Depreciation		
	Based on Historical Cost	Based on Replacement Cost	Actual-Based on historical cost	Based on Replacement cost	Understatement of actual depreciation charged
1945	45.8	45.8	2.2	2.2	-
1946	50.5	54.3	2.1	2.2	0.1
1947	55.3	63.3	2.1	2.5	0.4
1948	58.6	74.6	2.8	3.6	0.8
1949	62.9	83.9	3.9	5.2	1.3
1950	67.3	93.2	4.5	6.2	1.7
1951	74.5	112.3	4.4	6.6	2.2
1952	99.6	146.8	4.5	6.6	2.1
1953	126.7	174.9	5.6	7.9	2.3

Source: Author's calculations[19]

TABLE 10

ESTIMATED CAPITAL LOSSES THROUGH INFLATION 1954-59.
(Million $)

	Fixed Assets		Depreciation		
	Based on Historical Cost	Based on Replacement Cost	Actual-Based on historical cost	Based on Replacement cost	Understatement of actual depreciation charged
		CANADIAN INDUSTRIES LIMITED			
1954	89.1	108.3	3.9	4.8	0.9
1955	105.3	125.7	4.6	5.5	0.9
1956	120.4	147.8	5.9	7.2	1.3
1957	135.3	172.1	6.2	7.9	1.7
1958	144.6	184.2	7.6	9.8	2.2
1959	150.6	192.4	8.4	10.8	2.4
		DU PONT OF CANADA LIMITED			
1954	57.4	76.6	5.0	6.7	1.7
1955	61.0	81.7	4.5	6.0	1.5
1956	71.4	96.6	4.3	6.1	1.8
1957	85.5	116.8	4.3	6.0	1.7
1958	96.0	128.7	5.4	7.2	1.8
1959	105.8	140.0	5.9	7.8	1.9

Sources: see Table 9

Table 9 gives us an indication as to the magnitude of the losses suffered by the company through inflation. Furthermore we can see that during the period under review the company's operating earnings were overstated by $10.9 million. However, due to the fact that in 1952 and 1953 the company claimed and charged depreciation on its assets under construction, the amount of the overstatement was reduced as follows:

1952	$2,716,000
1953	5,348,000
Total:	$8,064,000

During 1954 Canadian Industries Limited was split into two new corporations: The present Canadian Industries Limited and Du Pont of Canada Limited. Since both firms immediately took advantage of the new provisions requiring no longer that tax and book depreciation be identical, we can evaluate the savings the two companies thus made in the light of their losses through inflation during the period 1954-59. (Table 10)

The tax savings realized by the two companies during this period amounted to:

	CIL	DU PONT
1954	$ 940,000	$ 198,100
1955	1,773,000	333,200
1956	1,858,000	766,417
1957	2,079,000	1,432,400
1958	1,416,000	1,150,600
1959	695.000	1,143,000
1954-59	$8,761,000	$5,023,717

Since the tax savings shown are net amounts, we can see that both companies could have offset their losses through inflation by charging book depreciation based on the replacement cost of their assets. The tax savings realized by both companies have been declining since 1957. Two factors account for this decline: an increase in tax rates in 1959 and, more important, a decline in the rate of the capital expansion undertaken by both firms. If capital costs continue to rise at an annual rate of 5-6%, then the future tax savings made by the two companies will no longer be sufficient
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to cover their capital losses. However, both firms could make provisions for this contingency by investing the funds currently saved and by letting the earnings thereon accumulate up to a point where the difference between book depreciation based on historical cost and a provision based on replacement cost was fully covered.

CHAPTER V

PUBLIC POLICY IMPLICATIONS

The foregoing analysis has shown some of the effects of the capital cost allowance provisions. While it is obvious that these provisions have profound implications for the individual firm and for the various industries within the economy, their general impact seems to be less generally recognized, especially in view of the restrictive interpretation given some of the provisions of the Act by the Department of National Revenue.

The impact of the capital cost allowance provisions of the Act will have to be considered not only in relation to their own obvious consequences but also in the broad context of other policy objectives. To use Pantaleoni's methaphore, it is not enough to know that a stone thrown into the water will generate waves but the amplitude of the waves generated and the force with which they hit the shores will have to be explored too.

A) CAPITAL COST ALLOWANCES, CAPITAL STRUCTURE AND INCOME.

The Canadian tax depreciation allowances favour the capital intensive firm by permitting it to recover a substantial part of the cost of its assets over a relatively short period of time. This is an advantage over industries characterized by a low capital intensivity. Whetherthis advantage is a lasting one depends on factors such as obsolescence and technological change

as well as inflationay pressures.

It is obvious that in a growing economy change and adjustment to change are everpresent phenomena. Furthermore, in an "era of mass consumption" where technological change becomes an almost daily phenomenon, the marginal efficiency of capital, i.e. the anticipated return on a contemplated outlay will necessarily be influenced by the lapse of time over which the amount invested in a certain project can be recovered. It is with these considerations in mind that we have to examine the apparent discriminatory effects of the capital cost allowance provisions.

We have seen that the present system has the effect of lowering the effective tax rate on the earnings of the capital intensive firm during the initial years of its investment and even later on if its rate of expansion exceeds the rate of depreciation it charges on its books. But here the advantage stops. For investment in highly complex manufacturing facilities involves a great amount of risk. A risk that less capital intensive industries do not have to bear to the same extent. The fact that a large share of the original investment can be recovered in a relatively short period of time tends to obscure the fact that during the subsequent years the depreciation charges allowed for tax purposes will be declining. Furthermore, and most important, if an asset grouped in one of the 18 classes becomes obsolete and it is discarded, the unclaimed capital cost of the asset cannot be

charged against income unless it is the only asset in its class. The business will have to keep on depreciating a no longer existing asset until it is fully depreciated. It is obvious that while the liberal capital cost allowances make it advantageous for the business to invest in new facilities, the latter provisions will hamper the businessman's desire to replace obsolete or non-efficient facilities. This is certainly or restrictive feature and it is only recently, when it became apparent that Canada's industrial growth was slowing down that claims to remedy this feature were voiced.[21]

A small or new firm will usually find it difficult to take full advantage of the capital cost allowance provisions. If a major expansion is undertaken the heavy preliminary manufacturing and start-up expenses will usually put the firm in a loss position during the first year (s) of operation so that it is often to the advantage of the firm not to claim any capital cost allowances at all during this period.[22] Furthermore, the firm can usually not take advantage of the right to depreciate asset under construction. (A taxpayer may claim depreciation on his capital outlays for the full year during which the investment is made. This feature which permits a further acceleration of the write-off is of particular value in the case of major projects requiring several years to complete). It becomes thus apparent that the capital cost allowance provisions, by favouring established firms which are able to claim all the allowances on new projects to which they are legally entitled,

make it more difficult for newcomers in a particular field, or even for small companies undertaking a substantial expansion program. A large well established company embarking on a program of diversification and expansion will in effect, receive a tax refund for the initial losses it may suffer in a new venture. This is because its tax payments on the profits from its other operations will be reduced due to the fact that the firm can deduct the losses on the new venture from its taxable income. Here we have an example of a true proportional tax, an example of a case where the government not only taxes the businessman on his profits but also shares his losses.

These are advantages given the big or diversified firm through public policy; they are in addition to the numerous advantages already enjoyed by the big concerns.

A discussion concerning the impact of this aspect of the capital cost allowances on the economy involves the whole controversial subject of anti-monopoly or anti-trust policy, the economies of scale and so forth. It is therefore beyond the scope of this thesis.

B) CAPITAL COST ALLOWANCES AND GROWTH.

No individual firm or nation can afford to stand still, to be satisfied with maintaining a certain position. In a monopolistically competitive economy the stationary firm will soon be displaced by its competitors, and its relative position in the industry will deteriorate. From an international point of view the same argument applies to any nation intent on maintaining or gaining a position of influence in world affairs. The present ideological warfare between the free world and the communist bloc countries makes it more imperative than ever for the Western countries to maintain a climate favourable to the entrepreneur. A tax system that penalizes incentive and enterprise can only mean stagnation and decay. As Professor Dan Throop Smith put it recently, "The peculiar and perverse character of our tax system is dramatized by the fact that it was cited by Krushchev as evidence that we fail to use incentives to increase production to the extent that they are used in Communist Russia. It is indeed ironic that the Soviet Leader in speaking of incentive should note to President Eisenhower that 'in many ways you stifle it'."[23]

(a) RISK AND UNCERTAINTY.

Accelerated depreciation will greatly reduce the risk and uncertainty in investment decisions. Businessmen usually insist on the fact that a new investment has to pay for itself in a

relatively short period of time, referred to as the pay-off.period, i.e. the time interval over which the use of the new asset is expected to reduce operating expenses or to increase net profits (before depreciation allowances) by an amount equal to the cost of the asset. Stringent depreciation treatment by the authorities will (if the pay-off period is shorter than the write-off period permitted by law) considerably reduce the net pay-off realizations. Liberal allowances on the other hand, will not interfere with the investor's plans for amortization of an asset.[24]

(b) TIME DISCOUNT AND AVAILABILITY OF FUNDS.

The fact that the taxpayer can deduct greater allowances during the initial lifetime of his asset has been referred to by some economists as an interest or time-discount gain. While exact computations of the value of the discount gain may not be made in actual practice, most businessmen recognize an advantage in receiving income in the near future as compared with the same amount of income in the more distant future. The greater present value of the tax saving can be said to represent a reduction in the cost of the asset to the taxpayer, improving the net return on the investment.

A corollary to the foregoing is the fact that under a system of capital cost allowances such as the one presently in use in Canada a growing firm is enabled to finance a substantially larger fraction of its investments from internally generated funds

than under a system permitting only normal depreciation allowances. Although the current tax saving made by the Canadian firm will ultimately revert into greater tax liabilities so that the tax saving will be cancelled out over the whole life of the asset it has been shown that the saving does not have to revert into a liability if the firm continues to expand at a certain rate.[25] (see ChapterIII). Furthermore, we have seen that the tax saving depends of the nature of a particular firm's assets. In a highly competitive capital intensive industry, such as the chemical industry, where the investment is more and more being concentrated in machinery and equipment the tax saving and consequently the availability of funds for future expansion will be greater than for other less capital intensive industries.[26]

Internally generated and reinvested funds offer a definite advantage to the firm, for they are cheaper than funds borrowed on the capital market since they are interest-free. In other words, the company financing its expansion through internally generated funds will be able to earn a better return on its investment than the firm which has to rely on outside capital.

The possibility of recovering the larger part of an investment in a relatively short period of time thus provides a stimulus to investment by raising the marginal efficiency of capital and this is badly needed if we want to have risk and venture capital forthcoming at all. This fact is important since the Canadian

corporation tax rates are among the highest in the world.

C) CAPITAL COST ALLOWANCES AND THE CAPITAL MARKET.

That tax laws are bound to have a profound impact on the capital market has become obvious by now. And their impact is greater than is generally recognized:

> Depreciation and depletion allowances together with retained profits make up retained earnings by business. The tax laws relating to depreciation and depletion allowances and changes in these laws affect the distribution of business investment expenditures as between classes of assets and as between industries. Indeed these laws have significant effects upon the allocation of resources among industries.[27]

We shall therefore try to examine the implications of liberal capital cost allowances as well as the tax rate on the capital market.

"Depreciation allowances are a means of reserving earnings for the preservation of the assets in the interests of guaranteeing, so far as possible, the opportunity tomake future earnings for present and future stockholders".[28] This broad statement gives admirably well the reason why businessmen set up depreciation reserves at all. Not merely to replace worn-out and obsolete facilities - in an era of rapid technological change replacement is usually not good enough - but to preserve the future earning power of the firm. This is a fact often misunderstood by economists. And it gives us a clue to the financial implications of liberal depreciation allowances.

We have seen that a firm that is allowed to keep on hand substantial amount of cash due to liberal capital cost allowances will be able to finance most of its expansion out of internally generated funds. In other words, this firm will not be subject to the usual check that the capital market has on the policies and operations of the firm. This fact has been the basis for much of the recent criticism levelled against the liberal Canadian capital cost allowances. The main point of these attacks being that they lead to a misallocation of resources.[29] It can be said that a misallocation of resources is quite possible- in the short run. In the long run the firm that has grown too quickly will find it difficult to earn the depreciation allowances it is allowed to claim for tax purposes. Liberal capital cost allowances are a form of tax relief that, just like any other method of tax relief, will not work in the case of a firm that has no taxable income. Furthermore the other component of retained earnings, viz. profits reinvested in the business, will drop sharply, offsetting whatever advantage the firm may gain due to the capital cost allowances provisions. (This of course provided we have effective competition within the industry in which the firm operates). Ultimately the inefficient firm will have to face the capital market again and either reorganize its structure or find itself eliminated.[30] Another implication of liberal and accelerated depreciation allowances becomes immediately apparent here. The "tight money" policy implemented by the Central Banks in times when

inflationary pressures become a threat to the purchasing power of the currency will have little effect on the firm that does not have to rely on the capital market for funds. In other words, monetary policy will be weakened in some instances by the effects of our current fiscal policy.[31] An example of the importance of this feature can be found in 1951 when the authorities had to defer the accelerated depreciation regulation as part of the program for controlling the inflation sparked by the Korean War.

Tax rates are the second factor influencing the amount of funds available for expansion. However, the effect of tax rates on the availability of funds to the firm is less obvious than the effect of capital cost allowances.

The fact that the net (after-tax) rates of return on investment have remained about constant over a period of drastic increase in tax rates suggests almost complete shifting of the tax.[32] Economists have advanced two explanations as to the methods used to pass on to the consumer the increased burden of the tax: an increase in prices and/or a reduction in investment in order to restore a set target rate of return net of tax.

Numerous examples can be quoted to illustrate the more or less complete shifting of the tax via price increases. The elasticity of the demand curve for a given product will determine the rapidity with which the burden can be shifted. When in 1959 the federal corporation income tax rate was raised from 47 to 50 percent

(including Old Age Security Tax) and the federal sales tax from 10 to 11 percent, the price of a package of cigarettes was increased immediately from 37 cents to 40 cents. This immediate shifting of the tax was possible because the demand for cigarettes is relatively inelastic - at least in the short run.

Professor Shoup is the main exponent of the theory that reduced investment is a prime means used to shift the increased tax burden.[33] These views, however, seem difficult to reconcile with reality. To quote Professor Musgrave:

> In all, the high level of investment which prevailed during the period of high tax rates makes it hard to believe that full shifting was accomplished via reduction in investment. Also, I am bothered by the implication of the underlying theory of investment behavior. I cannot believe that investment should be simply a function of available funds; nor can I believe that the willingness to invest as a function of the net rate of return should be so extremely elastic. As Professor Shoup himself notes, the target rate of investment itself might have changed over the period, and there remains the question of how this target rate came to be determined in the first place.[34]

In any case, no matter which of the two alternative methods of shifting the tax may be used, the effect is the same: net earnings on invested capital have remained fairly constant over the years and net profits have remained a significant source of funds for expansion and growth.

While the foregoing discussion has dealt with the impact of tax provisions on growth generally, let us now stop and consider the interrelationship of both depreciation allowances and tax rates on the capital market.

Again the chemical industry will serve us as an illustration here. The tremendous post war expansion of the industry has been financed almost exclusively without the capital market. This fact has been recognized by the Gordon Commission:

> Usually Canada's chemical firms have been financed in the initial stages by the direct transfer of funds from other countries, particularly the United States and the United Kingdom. Later, as these Companies have expanded their operations, they have raised most of their capital from retained earnings. Control, in other words, has remained substantially in the hands of those who have initiated these developments. Their rate of growth, meanwhile has been conditioned by the development of the Canadian economy generally.[35]

Table 8 shows that during the period from 1954 to 1958 (the last year for which figures are available) almost 95 percent of the funds required for the capital expansion undertaken by the chemical industry came from internal sources.

There can hardly be any doubt that more restrictive depreciation regulations would have slowed down the growth of the capital intensive industries such as the chemical industry. For the demands on the Canadian capital market have been substantial during the past decade as can be seen from the high cost of external financing. Many companies would certainly have been reluctant to expand at these costs. In other words, industrial expansion would have been proceeding at a slower rate. Or inflows of foreign capital would have had to make up for the deficiency.

Canada's industrial expansion seems to be slowing down presently.[36] If this is indicative of a trend, then the capital market

will soon assume a greater importance again in the financing of industrial expansion. For the depreciation allowances will decline as a source of internal funds. A period of consolidation will follow during which firms will have to absorb the apparent excess capacity created recently.

TABLE 11

CHEMICAL INDUSTRY
(Million dollars)

	1954	1955	1956	1957	1958	1954-58
Operating Profits	72.04	87.8	96.3	90.2	89.2	
Income Tax Declared	32.9	37.5	40.8	35.8	37.0	
Net Profit	39.1	50.3	55.5	54.4	52.2	
Cash Dividends	21.3	20.5	17.9	30.2	27.3	
Retained Earnings	17.8	29.8	37.6	24.2	24.9	
C.C.A. claimed	36.9	42.0	46.9	54.6	71.1	
Available Funds	54.7	71.8	84.5	78.8	96.0	385.8
Capital Expenditures	61.9	69.0	72.2	108.9	96.1	408.1
Internal Funds a % of Capital Expenditure	88.4	104.1	117.0	72.4	99.9	94.5

Source: Department of National Revenue, Taxation Statistics.

D) ADMINISTRATION

The capital cost allowance provisions of the Act were clearly designed to encourage investment and growth. That they are generally conducive to growth and expansion has been shown in the preceding chapters. But it has been mentioned too that they are only one aspect of public policy and that a full realization of their impact is necessary by both business and government.

The administration of the Income Tax Act is of importance since no law is important by itself but through the way it is administered. And one is often led to believe that the Department of National Revenue regrets the liberal capital cost allowance it has to allow business. There are many inconsistencies in Canadian tax law, and a close look at the whole legislation and the interpretation given it by the Department leaves one with the impression that there is a definite lack of overall cohesion.

Closely related to the field of capital cost allowances is the distinction of what constitutes an outlay that is (a) an outlay that may be capitalized and consequently depreciated, (b) an outlay that may neither be capitalized nor charged against income and (c) a business expense deductible from income. The distinction between these three categories is often very difficult to make and an analysis of departmental practice and court interpretation only increases the confusion.

An examination of the relevant section of the Act, Section 12 (1) (a) and (b), usually is of little help to the firm and the latter has to study the tax literature in order to determine whether an expense is deductible or not.[37] As Mr. Fabio Monet put it: "It is often difficult to differentiate between a capital expenditure and an income expenditure. The object of the expenditure, its nature and its affects are all so many criteria which can help to make the distinction. It is a question of fact which must be determined in the light of the facts and circumstances peculiar to each case".[38] Generally it can be said that if an expenditure does not result in the creation of an asset, as defined by any one class, then no deduction for this expense will be permitted. In other words, if a business makes preliminary studies to determine the feasibility of a contemplated project, these development expenses may be capitalized and consequently depreciated if the project is finally undertaken. If, however, the study reveals that the project would be uneconomical and it is consequently abandoned, then there is a possibility that the Minister may disallow this expense.

A typical example is furnished by Newfoundland Light and Power Co. Ltd. vs. M.N.R.[39] The company, a producer and distributor of electricity, incurred expenses in having an investigation made of several possible sites for a new plant. After selecting one of them the company claimed capital cost allowance on the total cost of the investigation, maintaining that the capitalized cost of the

study (plans, maps, etc) represented cost of property depreciable under Class 2 (c) of Schedule B. It was held that the company was entitled to the capital cost allowances on the cost of investigation only in respect of the site actually used (as allowed by the Minister), but not on the cost in respect of the discarded sites; the latter outlay did not bring the company any property qualifying for capital cost allowance and the capital cost of the plant that was ultimately erected was not affected by preliminary investigations demonstrating the inadequacy of other locations. This is a striking example of the narrow interpretation of the law without regard to economic consequences. There are other related cases where the courts have ruled in favour of the taxpayer, eg. Consumers' Gas Company of Toronto vs M.N.R.[40] and No. 693 vs M.N.R.[41] These cases clearly illustrate the fact that Section 12 (1) (a) and (b) is far from being clear and that the firm runs the risk of having expenses necessary for growth and expansion disallowed for income tax purposes. For if the Department refuses to consider as a business expense, made for the purpose of gaining income such outlays as payments for market research, plant layout etc, then one may wonder if the Canadian legislation is really so conducive to growth as is so often claimed. For it is not enough to encourage growth by allowing liberal depreciation charges against income. The other provisions of the Act have to be so designed and their interpretation must be such that they do not counteract whatever advantage

the depreciation allowances confer in the first place.[42] Growth being necessary for our well-being, no country can afford to hamper it. This is a fact that has been recognized by most advanced countries as the following chapter will show.

CHAPTER VI

INTERNATIONAL COMPARISONS.

Before stating that Canada's tax policies are liberal and quite conducive to growth, we have to look at the policies pursued by other countries in order to evaluate the Canadian System properly. This is all the more relevant since the popular belief that Canada's industrialization is proceeding at one of the highest growth rates in the world is recognized as being no longer true. Western Europe is presently growing at a much faster rate even if allowance is made for the fact that the European Countries started from a much lower base than Canada.[43]

(a) United Kingdom.

The British depreciation system is far more liberal than the Canadian system. The deduction for capital cost allowances consists of three basic features:

(a) investment allowances

(b) initial allowances

(c) annual depreciation allowances

The investment allowance provisions are used as a flexible policy tool to assist particular industries. The taxpayer is entitled to write off a certain part of the cost of an asset (the rates range up to 40%) in the accounting period during which the acquisition is made. This deduction is in addition to the regular depreciation allowances. The English firm is thus entitled

to write off more than the full cost of the asset. Initial allowances are granted except where investment allowances are given. These allowances are usually equal to the annual allowance at which an asset may be depreciated. The effect of this provision is that the taxpayer may deduct twice the normal rate of capital cost allowance during the year the asset is acquired. However, the amount deducted as an initial allowance reduces the amount to which regular depreciation rates apply. Annual depreciation is normally calculated by the diminishing balance method although straight-line depreciation may be authorized by the Government.

If upon disposal of a depreciable asset the proceeds of the disposal are less than the depreciated capital cost, the short-fall or "balancing allowance" is deductible in the year of disposition. Conversely, excess depreciation will be recovered in the year of disposition as a "balancing charge". Initial allowances but not investment allowances are taken into account in determining balancing allowances and balancing charges.

The initial and investment allowances have created an accounting problem for the English businessman just as the Canadian provisions have for his Canadian counterpart. The English Institute of Chartered Accountants has made no specific recommendations as to their treatment and many firms have set up "Plant Replacement Reserves" i.e. reserves designed to offset inflationary pressures.[44]

(b) Sweden.

The Swedish tax system seems to be among the most liberal and the most flexible of the systems in use in the economically advanced nations of the world. As early as 1938 Sweden adopted "free depreciation" for tax purposes. Swedish companies could write off the cost of their machinery and equipment in any way they saw fit; the entire cost could be written off as an expense in the year of acquisition, or on any other basis the corporation thought appropriate. The only restriction on the taxpayer was that depreciation charges had to be identical for book and tax purposes and that total depreciation could not exceed original cost.

After World War II, Sweden, like most Western countries experienced a major boom and the liberal depreciation allowances were found to contribute substantially to inflation. Some temporary limitations were therefore imposed on the free depreciation provisions (1951) and a new permanent system was instituted as of January 1, 1956.

The new system, while more restrictive than the one previously in use, still exceeds in liberality most any system in the world. The taxpayer retains complete freedom in the treatment of depreciation allowances provided he does not exceed the limit imposed by the higher of two statutory ceilings. These ceilings are

(a) the diminishing-balance method of depreciation at a rate of 30 percent.

(b) regardless of the limit imposed by (a), the taxpayer may, at any time, write off 20 percent of the original cost of an asset, i.e., he may write off the cost of his machinery and equipment in five years at the most.

If at any time obsolescence, wear and tear or other factors reduce the actual value of the entire stock of machinery below its book value, the taxpayer may always write down his assets to their actual value regardless of the limits imposed by (a) and (b).

These liberal allowances extend only to machinery and equipment. Buildings may only be depreciated at straight-line annual rates of 1-2 percent.

While the tax laws thus give the Swedish taxpayer a great amount of flexibility, another feature of the tax system is perhaps even more unique. Any Swedish corporation may allocate, at its own discretion and with no necessity for government permission, up to 40% of its pretax income to an "investment reserve". The amount so set aside is deductible from income for national and local income tax purposes.

40% of the amount allocated to an investment reserve must be sterilized by deposit to the taxpayer's credit in the Bank of Sweden. The remaining 60% remain in the taxpayer's hand as part of his ordinary working capital - just as a provision for depreciation or bad debts.

The effect of these provisions can be seen from the following example:

	Sweden	Canada
Operating Profits	$ 1,000,000	$ 1,000,000
Depreciation	300,000	300,000
Taxable Income	700,000	700,000
Investment Reserve	280,000	--- ---
Net Taxable Income	420,000	700,000
Income Tax Thereon		
Rate	40%	50%
Amount	168,000	350,000
Net Income	252,000	350,000
Cash Recovered:		
Net Earnings	252,000	350,000
Depreciation	300,000	300,000
Investment Reserve 60%	168,000	--- ---
	720,000	650,000

This example illustrates the substantial difference between the amounts of cash available for future expansion to the Swedish Corporation and its Canadian counterpart. Furthermore, the cash retained by the Swedish company will be even greater to the extent

that it can charge greater depreciation allowances than the Canadian firm. Finally, the 40% of the amount credited by the Swedish taxpayer to the investment reserve and deposited by him in the Riksbank still remains his property, although his control over these funds is limited.

The control of the taxpayer's use of the funds deposited in the Bank is largely in the hands of the Labour Market Board, a government agency set up to combat unemployment. The investment reserve provisions are a unique example of a government engaging the help of private business to help fight economic fluctuations and instability. During a boom a taxpayer may set aside tax free some of his available funds and use them in times of recession. Whenever the taxpayer uses the reserve - with the consent of the authorities - the amount so used will not be added back to taxable income; however, in order to avoid double deductions the asset or expense charged to the reserve is, to the extent so charged, not also subject to depreciation or deduction. There is one major exception against double deductions: if a corporation uses all or part of its reserve with the permission or on the direction of the Board,[45] it receives, in the year of use, an extra investment deduction from taxable income equal to 10% of the amount so used.

These are the major provisions of the Swedish tax system, a system characterized by very liberal allowances to business and embodying some unique concepts. To use Dr. Harvey Perry's words:

"of all the depreciation experiments, that of Sweden is by far the most challenging".[45]

(c) Western Germany.

Western Germany has selected an approach to depreciation that seems to be quite restrictive. The basis of value for depreciation charges is historic cost (by the Asset Revaluation Law of 1949 assets in existence in June 1948 were revalued at that date on the basis of replacement prices prevailing in August, 1948) and depreciation is computed on a straight-line basis but if the taxpayer so elects he may claim diminishing-balance depreciation for movable assets. However, the deduction of depreciation for tax purposes can be claimed only to the extent that it is shown in the taxpayer's accounts: if the accounts show more depreciation than the amount allowable for tax purposes, the excess must be added to taxable income.

While these provisions may seem rigid and oppressive in relation to other countries policies, they do not tell the whole story. For while the German rate of tax for resident corporations is 51 percent (non-resident corporations pay 49 percent on all profits) this rate is reduced to 15 percent for such part of the income as is distributed to shareholders.

The impact of these provisions becomes apparent from the following example:

	Western Germany		Canada	
	(a)	(b)	(a)	(b)
Taxable Income	$1,000	$1,000	$1,000	$1,000
Dividends	100	300	100	300
Tax Rate				
51% on	900	700	---	---
15% on	100	300	---	---
50% on	---	---	1,000	1,000
Tax Payable	474	402	500	500
Effective Tax Rate	47.4%	40.2%	50%	50%
Cash Recovered	426	298	400	200

This example shows that whatever tax saving the Canadian company makes due to the capital cost allowance provisions is likely to be made up by the German firm due to the reduction of the tax rate on that portion of the earnings paid out as dividends. Furthermore, a concession known as "Schachtelprivileg" means that where a resident company and the payee has held at least 25% of the payer's share capital during the entire taxable year, the payee is not required to take the dividend into income. However, if the receiving company does not distribute to its shareholders the dividends which it has received tax free it will be liable for tax at 36% on those dividends.

These provisions have a threefold effect:

(a) it is to the advantage of the company to declare substantial dividends.

(b) the shareholder has a greater chance of receiving a fair dividend without internal pressures on the board of directors.

(c) there is not going to be a future tax liability on the firm due to the fact that it saves on current taxes as is the case for the Canadian company. The current tax rate is simply reduced and no limitations are imposed on the future operations and growth of the firm.[47]

(d) France.

Up to very recently, French manufacturing companies could write-off the cost of capital goods over nine years, 28 percent the first year and 9 percent in each of the eight following years. These provisions were changed in the spring of 1960 and a 25% diminishing balance was introduced. The present system allows manufacturers to write-off their machinery and equipment as follows:

Year	Percent
1	25.0%
2	18.8%
3	14.0%
4	10.6%
5	7.9%
6	5.9%
7-10	4.45
	100.00

In other words, France switched over to a diminishing balance method. Just as in Canada, the firm is not bound to apply the new regulations: companies may continue to use the present method if they consider it more adequate for their interests. The amount of depreciation claimed for tax purposes, however, cannot differ from the amount set up in the books.[48]

(e) United States.

Depreciation rates in the United States are not fixed by Statute or regulation but must be justified by reference to life expectancy, and in practice the write-off in the United States has been considerably lower than the old Canadian straight-line rates.[49] In 1954, the privilege was granted to use the diminishing balance method at double the straight-line rates but the provision is restricted to assets constructed in 1954 and later years.

These restrictive provisions have time and again been attacked by economists and businessmen alike. To quote Professor Dan Throop Smith:

> Federal Tax reform is urgently needed. It is recommended by taxpayers' groups and by economists. It is high on the list of proposed action by political leaders... Liberalization of depreciation allowances on machinery and equipment together with a tightening to deny capital gains treatment to profits from any too rapid depreciation comes second after a reduction of the individual income tax together with broadening of the base ... The structure of a tax system may be almost as important as the total level of taxation. With sufficient reform, we could probably support appreciably higher tax burdens than we now have, if that is desirable or inevitable. Without it, we shall reap accelerating social and economic damage from our systems. In various ways our

structure violates the three requisites of an acceptable tax system: fairness, minimum restraint on economic growth, and simplicity... Our tax allowances for depreciation are among the most restrictive in the world. With the great need for increased efficiency and production, we can no longer afford to maintain our present restrictions..."[50]

Professor Smith's points are undoubtedly well taken. The depreciation rates allowed United States business are not only low and restrictive, they also create confusion and uncertainty as each case is viewed on its merits by the Department of Internal Revenue Service. The restrictiveness of the United States depreciation allowances permitted for tax purposes has certainly contributed to the heavy inflow of United States Capital into Canada. This fact has been recognized 4 years ago:

Apart from the rate of tax, the principal factor of corporate income tax likely to affect the foreign investor is the rapidity with which capital investment may be written off by way of depreciation allowances. The Canadian system provides a substantial incentive to the United States investor in this respect, but does not offer as great an incentive to the United Kingdom investor as do the recently adopted United Kingdom Investment Allowances.[51,52]

This limited comparison of tax depreciation policy shows the different approach taken by various countries. Canada's liberal allowance provisions are exceeded by the Swedish and British regulations, about equal to the French provisions and much more liberal than the United States practice. Western, Germany, on the other hand, has taken a different approach altogether to the question of incentives to growth. However, there is

one basic difference between Canada and all the other countries considered: the Canadian practice of permitting different allowances for tax and book purposes seems to be quite unique.

CHAPTER VII

CONCLUDING REMARKS

Having explored the implications of the capital cost allowance provisions of the Canadian Income Tax Act, let us now summarize our findings and try to assess the main points brought out in our analysis.

The present system of capital cost allowance treatment is a liberal one. It is liberal and unique in that it allows the taxpayer an unusually great amount of flexibility. While some countries allow substantially greater depreciation charges for income tax purposes, they all seem to require that tax and book depreciation be identical. However, the liberal Canadian provisions have created their own problems. This can be seen from the widely divergent accounting treatment of the tax saving realized by claiming the full amount of capital cost allowances permitted by law and by setting up smaller charges in the books. While economists are usually not too concerned with accounting problems, they have to recognize that the accounting treatment of the capital cost allowances has its importance not only for the accurate reporting of financial results to shareholders. As far as the generation of internal funds is concerned, it doesn't matter whether the company takes into income the current tax saving realized or whether it sets up a deferred liability account. But

the application of the recovered funds does matter. If the increased net earnings lead to higher dividend payments and/or increased payments on account of the employee bonus plans, then the accounting treatment of the saving assumes an importance extending beyond historical revenue and cost measurement.

Depreciation allowances are of prime importance to the firm, for their function is not only to recover the capital cost of assets already in existence but even more important, to provide an internal source of funds for future growth and expansion. There are thus two basic problems connected with the problem of depreciation and these two problems are closely interrelated: inflation and future growth.

Canadian tax law permits the taxpayer to counter the problem of inflation fairly well, by permitting him to write off a large part of the cost of his assets, over a fairly short period of time. Furthermore the Canadian taxpayer, if he wants to do so, has the possibility to make provision in his accounts for the amount of inflation actually taking place. Nothing presents him from charging book depreciation based on replacement instead of historical costs. The taxsaving that the growing firm makes and is perhaps going to make indefinitely could very well be used to offset higher book depreciation charges. In other words, the problem of inflation will not be as acute to the Canadian firm as to the American firm for example. This does not mean that the Canadian

company should ignore it altogether. On the contrary, having the opportunity to make provisions for the ever rising replacement costs of fixed assets, it seems hard to understand why so many companies do not take advantage of the possibilities given them by the legislation.

But the erosion of the dollar does not only pose a problem for income determination purposes. It also means that more and more funds will be required for expansion and investment. Herein lies the real shortcoming of depreciation allowances based on historical cost. A decline in the purchasing power of the dollar will mean that depreciation charges will cover a smaller and smaller portion of the funds required for growth and expansion. But here again, the liberal Canadian allowances put the taxpayer in a more favourable position than more of his competitors abroad. By enabling capital intensive firms to make substantial tax savings - especially if the industry is fast growing - the tax provisions will permit these firms to expand and to grow, providing jobs and incomes. Table 5, page 27, gives an idea of the relative amounts of capital investment required to provide a job in the various industries. It shows that the investment required to give employment to a worker in chemicals is nearly three times as high as the average for all manufacturing. The apparent advantage that capital intensive industries enjoy in relation to less capital intensive industries finally amounts but to a dimi-

nution of the greater capital costs borne by these industries.

Generally speaking we can thus say that the Canadian Capital Cost Allowances are conducive to capital investment. However, it should be borne in mind that investment is not only a function of liberal depreciation allowances. It is not enough to enable a business to generate substantial amounts of internal funds and to assume that from then on growth will be automatic. A tax reduction - and that is what liberal allowances amount to - does not provide motivation, but only freedom to respond to an existing motivation for it will permit the freer play of economic forces. This is the real contribution to growth made by a liberal depreciation system. It is a real contribution although an indirect one for by itself it will prove insufficient to lead to industrial expansion. Even complete freedom from taxes will, in many istances, not provide a stimulus powerful enough for the investor if other prerequisites for growth such as political stability etc. are missing.

It is only relatively recent years that taxation has come to be considered not only as a means of raising income for governments but also a fiscal device for controlling cyclical fluctuations, and for channelling investment into various directions. The need for revenues to finance the ever growing services r required of modern goverment, unfortunately seems to have led to a piecemeal approach to fiscal policy by the Canadian government.

This becomes evident from the many inconsistencies found in the Income Tax Act. Some of these inconsistencies have been mentioned in Chapter V. Generally it can be said that the main fault of the Canadian Tax Legislation is its failure to define income as such in a way as to remove uncertainty concerning the deductibility of a certain expense. A law that is ambiguous is a bad law. And it becomes even worse when it is applied in such a way as to increase the uncertainty concerning its interpretation. These shortcomings of Canadian law unfortunately have the effect of considerably weakening whatever good provisions the Act embodies. For it is not enough to permit the taxpayer deduct liberal tax depreciation allowances if other provisions tend to cancel whatever advantages the law confers in the first place. It is indeeed ironic that a tax expert such as Mr. Keith E. Eaton has to give the following advice to the businessman:

> Since it is not possible to draw a hard and fast line in respect of expenses which have not been passed upon by the courts, one is often driven to adopting a rather rough and ready approach as follows:
>
> (1) Look at the size of the expense in relation to annual income.
>
> (2) Judge whether the benefit is going to last a couple of years at the outside or for a longer period.
>
> (3) Decide whether the expense is related to the whole capital structure of the taxpayer or only to its day-to-day business operations.
>
> (4) Deduct the expense and pray that the assessor won't notice anything unusual about it.[53]

It requires more than just one liberal feature within an increasingly complex tax structure to create an environment favourable to growth and expansion. If this fact is not fully recognized by government, the ever increasing need for revenues will lead not only to a skimming of the milk given by the cow but it will also lead to the malnutrition of the cow. The only sound way to increase government revenue is to widen the tax base. Exorbitant tax rates and oppressive features of a tax system that does not take into consideration this fact will result in economic stagnation and decay.

Finally, it is not enough to have a liberal approach to business taxation by government. It takes a full understanding by business of the possibilities given to it to assure the growth of a young nation.

NOTES

1

Some basic assumptions are made throughout this thesis:

a. the federal corporation income tax rate is assumed to remain at its present level of 50% (47% Income Tax and 3% Old Age Security Tax.)
b. the progressive feature of the tax is ignored. The present rate is 21% on the first $25,000 of taxable imcome and 50% on the remainder.
c. the present rates of capital cost allowance for tax purposes are assumed to remain at their present level.
d. it is assumed that the firm is able to earn the depreciation allowances.
e. the earning power of an asset is assumed to remain constant over its economic life and the asset is assumed to have no scrap value.

2

An example will illustrate this point:

Original cost of asset:	$100
Capital cost allowance claimed:	50
Unclaimed capital cost	$ 50

	(a)	(b)
Sale of asset:	$125	$25
Unclaimed capital cost:	50	50
Depreciation recovered:	50	--
Capital gain (loss)	$ 25	$(25)

case (a)	Depreciation recaptured:	$50 - taxable income
	Capital gain:	$25 - not taxable
case (b)	Capital loss:	$25 - deductable from income

3

The maximum rates applicable to these 18 classes are:

Class	1 -	4%	Class	8 -	30%
	2 -	6%		9 -	20%
	3 -	5%		10 -	30%
	4 -	6%		11 -	35%
	5 -	10%		12 -	100%
	6 -	10%		13 -	*
	7 -	15%		14 -	*

Class 15 -	*	Class 17 -	8%
16 -	40%	18 -	60%

*Classes 13 and 14 refer to leaseholds and patents respectively, and class 15 to woods assets. Capital cost allowance on properties in these classes is calculated according to a special formula in each case.

The following is a breakdown of assets by kind showing the class into which the various assets may be grouped:

Class No.		Rate
10	Access roads and trails protecting timber	30%
1	Aeroplane runways	4%
16	Aeroplanes and parts	40%
	Air conditioning equipment (same rate as building)	
	Animals	nil
8	Assets, tangible capital not specifically listed	20%
10	Automobiles	30%
10	Automotive equipment	30%
10	Automotive trucks	30%
7	Boats	15%
	Boilers	
	heating.....(same rate as building)	
8	manufacturing	20%
12	Books of lending libraries	100%
	Breakwaters	
6	wooden	10%
3	other	5%
1	Bridges	4%
9	Broadcasting equipment	25%
	Buildings	
3	brick, stone, cement, etc	5%
6	frame, log, stucco on frame, galvanized or corrugated iron	10%
10	mining (except refineries and office buildings not at mine)	30%
10	portable camp	30%
10	Buses	30%
1	Canals	4%
7	Canoes	15%

Class No.		Rate
8	Capital tangible assets not specifically listed	20%
	Cattle	nil
12	Chinaward	100%
8	Cold storage plants, lockers, etc	30%
	Concessions	*
10	Contractors' moveable equipment	30%
	Copyrights	*
1	Culverts	4%
12	Cutlery	100%
12	Cutting part of a machine	100%
8	Dairy plant and equipment	20%
1	Dams	4%
12	Dental instruments (costing less than $50)	100%
12	Dies	100%
8	Display fixtures (window)	20%
2	Distributing equipment for production of gas	6%
2	Distributing equipment of producer of heat	6%
2	Distributing equipment of producer or distributor of electrical energy	6%
2	Distributing equipment of distributor of water	6%
3	Docks	5%
10	Drive-in theatre property	30%
	Electrical wiring..(same rate as building)	
11	Electrical advertising signs	35%
2	Electrical distributing equipment	6%
2	Electrical generating equipment	6%
2	Electrical power plants	6%
	Elevators...(same rate as building)	
7	Engines (spare for ships)	15%
8	Equipment - see specific types; if not listed	20%
	Excalators.....(same rate as building)	
	Farmers and fishermen 50% of rates	
6	Fences	10%
16	Fittings, aircraft	40%
7	Fittings, ships	15%
	Franchises	*
16	Furniture (for aircraft only)	40%
7	Furniture (for ships only)	15%
8	Furniture (not otherwise provided for)	20%
2	Gas manufacturing distributing equipment	6%
2	Gas pipelines	6%

Class No.		Rate
2	Gas plants	6%
10	Gas well equipment (for use above ground)	30%
2	Generating equipment (electrical)	6%
12	Glass tableward	100%
6	Greenhouses	10%
10	Harness equipment	30%
	Heating equipment...(same rate as building)	
	Herbs	nil
12	Instruments, dental or medical (under $50)	100%
1	Jetties	4%
12	Jigs	100%
12	Kitchem utemsils (costing less than $50)	100%
12	Lasts	100%
	Leasehold interests	*
12	Lending library books	100%
	Licenses	*
	Lighting fixtures ..(same rate as building)	
12	Linen	100%
10	Logging mechanical equipment	30%
7	Marine railways	15%
12	Medical instruments (costing less than $50)	100%
12	Mine shafts (sunk after mine in production)	100%
10	Mining buildings (except refineries and office buildings not at mine)	30%
10	Mining machinery & equipment	30%
1	Moles	4%
18	Motion picture films	60%
12	Moulds	100%
11	Neon signs	35%
2	Oil pipelines	6%
6	Oil storage tanks	10%
10	Oil well equipment (for use above ground)	30%
	Oil wells	*
10	Omnibuses	30%
1	Parking areas	4%
12	Patterns	100%
2	Pipelines	6%
	Plumbing....(same rate as building)	
10	Portable construction camp buildings	30%
2	Power plants (electric)	6%
2	Production equipment of distributor of heat	6%
5	Pulp and paper mills	10%
5	Pulp mill, sulphite, sulphate or ground wood pulp mill	10%

Class No.		Rate
9	Radio and radar equipment (including two-way radios in automobiles)	
	Radium	nil
8	Radium needles	20%
7	Railway, marine	15%
4	Railway system or part thereof	6%
6	Railway tank cars	10%
1	Railway track and grading (not part of a railway system)	4%
8	Refrigeration equipment	20%
	Right of way	nil
1	Roadways	4%
7	Rowboats	15%
10	Roller rink floors	30%
7	Scows	15%
7	Ships, including ships under construction	15%
12	Shafts, mine (sunk after mine in production)	100%
	Shrubs	nil
1	Sidewalks	4%
10	Skating rinks, roller, floors	30%
10	Sleighs	30%
16	Spare parts, aircraft	40%
	Sprinkler systems (same rate as building)	
10	Stable equipment	30%
6	Storage tanks, oil or water	10%
12	Tableware, glass	100%
8	Tangible capital assets not specifically listed	20%
6	Tank cars, railway	10%
7	Tanks, oil and water storage	10%
17	Telegraph and telephone equipment	8%
1	Tile drainage	4%
10	Timber cutting and removing equipment	30%
	Timber limits	nil
12	Tools (under $50)	100%
10	Tractors	30%
10	Trailers	30%
4	Tramways	6%
	Trees	nil
3	Trestles	5%
4	Trolley bus property	6%
10	Trucks, automotive	30%
12	Uniforms	100%
10	Wagons	30%

Class No.		Rate
2	Water pipelines	6%
6	Water storage tanks	10%
2	Waterworks	6%
10	Well equipment, oil or gas (for use above ground)	30%
3	Wharves	5%
6	wooden	10%
3	Windmills	5%
	Wiring, electric (same rate as building)	

*Special provisions apply for these assets.

Source: CCH Canadian Limited

4
Source: Annual Reports of the various companies concerned.

5
Some of these limitations are: availability of funds, the capital market, general business conditions, the level of demand for the company's products etc.

6
The diminishing-balance capital cost allowance that can be claimed for tax purposes will only become zero at infinity, unless a final adjustment is made. This fact is ignored here.

7
cf. note 6

8
This is because the company can claim the higher capital cost allowances on its increasing fixed assets at a rate faster than the rate at which its assets become fully depreciated.

9
cf. Bank of Canada, Annual Report of the Governor to the Minister of Finance, 1959, pp. 6 ff.

10
cf. John Davis, The Chemical Industry, Royal Commission on Canada's Economic Prospects. Ottawa, 1957.

11
The Dominion Bureau of Statistics ceased publishing a capital series on the Census basis in 1943. The statistics on capital stock given by the Department of National Revenue in Taxation Statistics and by the Gordon Commission in "Output, Labour and Capital in the Canadian Economy" could not be used here since they are prepared on a basis different

from the one used by DBS. (The DBS classification is based on an establishment basis, while for taxation statistics, firms are grouped in the industry within which most of their activities fall. The Gordon Commission, on the other hand, used the DBS classification for chemicals and allied products but added synthetic fibres.)

Employment figures were required in addition to a capital stock series for the various industries concerned. as up-to-date employment figures are available only on a DBS basis, it was decided to construct a capital stock series using DBS information on capital outlays from 1926 onwards and using estimated service lives based on the Gordon Commission study. The series was constructed by accumulating the annual capital outlays for construction and for machinery and equipment and by dropping from the series the value of outlays at the end of their service life.

However, since no data were available prior to 1926, the Gordon Commission service life of about 50 years for construction could not be followed. Hence, a service life of 24 years had to be accepted. An understatement of total asset values thus results. As this understatement is common to all industries it will not prohibit relative comparisons, although absolute values may be inexact.

The Products of Petroleum and Coal Industry and the Non-Metallic Mineral Industry had to be combined in the computations as separate figures for each industry are only available from 1946 on.

Employment figures for 1959 were obtained by applying the DBS employment indices for 1959 to the preliminary industry figures for 1958 published by the Bureau.

12 Source: Canadian Industries Limited, Annual Reports to the Shareholders, 1954-59.

13 Source: Du Pont of Canada Limited, Annual Report to the Shareholders, 1954-59.

14 New Hope for Depreciation Reform, Chemical Week, March 12, 1960, p.29.

15 It is clear that the higher the rate of capital expansion the less of this expansion can be financed through internally generated funds. In order to compare the importance of different depreciation allowances in relation to expansion and growth in both countries it would therefore be necessary to have identical rates of capital formation.

16
A McGraw-Hill Survey shows that 58% of chemical companies polled would spend more on plants and equipment if greater allowances were legal. See New Hope for Depreciation Reform, p. 29.

17
The Implicit Price Indices (GNE) given in the National Accounts are of limited application here since they reflect not only pure price changes but also changing expenditure patterns within and between major groups.

IMPLICIT PRICE INDEXES - GNE

GROSS FIXED CAPITAL FORMATION
(1949=100)

	GOVT.	BUSINESS			
		Total	New Residential Constr.	New Non-Residential Constr.	New Mach. and Equipment
1945		72.6	67.4	71.9	74.4
1946		75.2	71.9	76.5	75.3
1947		83.5	81.0	85,3	83.8
1948		95.0	95.5	96.0	94.0
1949	100.0	100.0	100.0	100.0	100.0
1950	104.6	105.7	106.0	105.5	105.7
1951	117.1	119.9	123.1	118.2	119.6
1952	122.9	124.1	126.6	126.8	120.8
1953	127.2	127.3	128.8	131.6	123.2
1954	127.5	128.4	129.7	131.4	125.0
1955	129.9	131.5	132.5	135.4	127.4
1956	136.2	138.5	137.5	142.6	135.3
1957	143.1	144.2	141.3	147.3	142.5
1958	145.6	147.2	144.5	149.0	146.3
1959	148.8	151.3	150.4	153.6	149.7

Source: National Accounts

The Gordon Commission published some selected capital price indicators as well as a "price index of depreciation":

SELECTED CAPITAL PRICE INDICATORS

Year	Total producers' durable equipment: U.S.	Tractors: U.S.	Mining and oil field machinery U.S.	Instruments: U.S.	Machinery and equipment: Canada	Non-residential construction: Canada
1945	85.2	80.9	82.9	94.0	73.6	72.3
1946	82.4	76.1	79.3	89.3	74.5	76.7
1947	88.5	83.1	85.8	92.7	84.2	85.7
1948	95.0	92.8	93.0	98.5	94.4	96.5
1949	100.0	100.0	100.0	100.0	100.0	100.0
1950	108.6	108.4	111.3	108.8	105.7	105.7
1951	114.2	112.5	120.0	114.4	118.3	118.7
1952	108.2	107.0	111.8	105.8	117.8	127.1
1953	112.2	111.0	115.9	109.7	119.8	132.1
1954	113.0	111.7	116.7	110.5	120.9	131.7
1955	118.0	116.6	121.8	115.3	123.3	137.3

$$\text{Price Index of Depreciation} = \frac{\frac{1}{L} G^{c}_{n-1}}{\frac{1}{L} G^{K}_{n-1}} = \frac{\sum_{n=1}^{n=L} 1^{c}_{n}}{\sum_{n=1}^{n=L} 1^{K}_{n}}$$

where: n = any given year
G = gross capital stock
L = life of kind of asset
c = original cost of assets
K = their cost in constant dollars

Source: Wm. C. Hood and Anthony Scott, Output, Labour and Capital in the Canadian Economy, Royal Commission on Canada's Economic Prospects, (Ottawa, 1957) pp. 242,278.

18 This index has been constructed as follows:

1. Construction

Two cost series were used to construct this index: the index of average hourly earnings (construction) and the wholesale price index of non-residential building materials. The ratio used (35:65) was the average ratio of on-site labour costs, relative to the on-site materials cost of non-residential construction found by a DBS survey to have been prevailing during the period 1949-52. (DBS, Non-Residential Building Materials Price Index 1935-1952, Reference Paper No. 43, p. 11.)

2. Machinery and equipment

The series used here is the Wholesale Price Index of Rolling Mill Products.

3. Total Index

1. and 2. were weighted 37:63 which is the average ratio of construction outlays to expenditures for machinery and equipment during the period 1946-1960. (Table 4)

The labour content of the index so constructed does not take into account increases in labour productivity. The index is therefore likely to be on the high side.

19
The Annual Reports of the company provided the basic data necessary for this estimate. The year 1945 was selected as base year and the fixed assets of the Company at 31st December, amounting to $45,832,000, were inflated according to the capital cost index given in Table 8. The same process was repeated for every successive net annual addition to fixed assets. Several factors had an adverse effect on the accuracy of our calculations:

a. assets in the base year 1945 were expressed at cost; obviously the replacement value of these assets was much higher than the $45.8 million indicated on the balance sheet.

b. no information was available as to the age of the assets discarded each year.

Depreciation based on replacement cost was calculated by using the same rate of depreciation as the one used by the company during the year to determine its depreciation based on historical cost.

20
The basic assumption made here, is that inflation will continue to be a threat to the purchasing power of the dollar. Some statements have been made recently to the effect that inflationary pressures are no longer a feature to be reckoned with.

The writer doubts the validity of these claims, especially in view of the present boom in Western Europe and the platforms adopted by the Democrats and Republicans for the presidential election in the United States later this year.

21
In a recent address to the Canadian Manufacturers' Association Mr. Walter L. Gordon, Chairman of the recent Royal Commission on Canada's Economic Prospects, proposed no only the abolition of this feature but also a further liberalization of the capital cost allowance provisions. Cf. Tax Policy for Efficiency, editorial in the Montreal Star, June 9, 1960.

22
This feature is somewhat mitigated by the provisions of the Income Tax Act permitting the taxpayer to carry his losses forward 5 years and to carry them backwards one year.

23
Dan Throop Smith, A Program for Federal Tax Reform, American Economic Review, L (1960) p. 470.

24
See Richard Goode, Accelerated Depreciation Allowances as a Stimulus to Investment, Quarterly Journal of Economics, LXIX (1955) pp. 191-221.

25
It is evident that the interest that the taxpayer will be able to earn on the tax saving will not be lost.

26
Professor Domar did not stress this feature in his excellent article. Cf. Evsey D. Domar, The Case for Accelerated Depretion, Quarterly Journal of Economics, LXVII (1953) pp. 493-519.

27
Wm. C. Hood, Financing of Economic Activity in Canada, Royal Commission on Canada's Economic Prospects.(Ottawa, 1958) p.256.

28
Hood, p. 268.

29
In an address delivered to the 53rd Annual Meeting of the Canadian Gas Association at Murray Bay, Que., on June 23rd 1960, Mr. E. W. Kierans had this to say:

> To finance the growth of this [natural gas] industry from internal sources alone is to court many dangers:
>
> 1. The price of your products will have to be sufficiently high to permit the necessary flow of profits. Such high prices, and profits are bound to keep within the industry many less efficient firms to split the market and to rob the large firm of the advantages of its size and efficiency. Further, such profits are bound to attract new competitors.
>
> 2. Profits may be reduced by obtaining special depreciation or depletion concessions but these costs must still be charged against the same price structure. If prices were not maintained, the total sales revenue, out of which these flows arise, would be reduced.
>
> 3. When a firm attempts to expand from internal sources, it may maximize growth at the expense of profits. High prices must be charged to cover not only the normal direct and indirect costs of producing the current output but also the costs of expanding into new plants, new products, and new areas.

While this expansion is being carried on, additional and sometimes much less efficient firms are enabled to carry on and to establish themselves securely within the industry. The time comes when the expanding firm is faced with the alternatives of costly price wars to eliminate, or high prices to buy out, such units.

4. High prices bring more investment into a growth industry than can be justified by immediate market prospects and this can lead to deteriorating conditions which may require some time to overcome.

5. Just as high prices to finance growth may distrub the consumer, so may retained profits and nominal dividends discourage the investor. Such a result can depress market prices of a stock and discourage further investor interest, increasing the cost of such external funds as are needed.

6. Where all firms expand from internal funds, there is no effective market test of the application of those funds. It is very probable that capital will be wasted and excess capacity, without that market check, is virtually certain.

The arguments put forward by Mr. Kierans can be summarized as follows:

The nature of high depreciation is such as to cause serious structural distortions in very many markets. A high rate of depreciation may:

1. Reduce profits by the amount of the excess.

2. Understated profits may create pressure for increased prices or at least cause prices to remain sticky.

3. Reduced taxes on the understated profits cause the tax burden to be shifted to persons or other firms.

4. Dividends will be lower than if profits were fully stated.

5. Wage demands are more easily denied.

6. Cash flows are increased which reduces reliance on the capital markets.

7. Industries with heavy fixed assets are favored over service, finance and other industries with smaller investments in depreciable assets.

8. Older established firms have an advantage over new and growing firms.

30

Professor Hood puts it this way:

The decisive argument however in defence of firms financing their expansion with their own saving against the charge of

possible misallocation of resources is, however, that the ultimate test of investment decisions is whether the funds invested have been used profitably. THIS TEST MUST BE PASSED BY ALL FIRMS WHETHER THEY SECURE THEIR FUNDS FROM THEIR OWN OPERATIONS OR IN THE CAPITAL MARKET. [Sentence in italics in text.] It is indeed an expost test but it is the only final and conclusive one there is. But the test is continuously applied. Firms cannot long fail to meet it and survive. Unprofitable companies will not find it easy to raise funds in the capital market; unprofitable companies will not long be able to finance expansion from depreciation allowances.

There is one qualification which must be made to this argument. It is granted that the exercise of monopoly power may in a sense lead to the misallocation of resources. It must be conceded that self-finance of business may contribut to misallocation to the extent that individual monopolies are financed from their own saving. But this qualification needs itself to be qualified in two respects. In the first place, monopolies need not be and are not always financed from their own saving. Monopolies may also make successful appeals to the capital market. Secondly, monopolies may not in every relevant sense lead to the misallocation of resources. Indeed, the establishment of some guarantee of markets may be the means of sufficiently reducing the risk involved in bringing forth innovation to make the attempt worth while. This however is a familiar argument in explantion of monopoly and we need not pursue it here.

31 Hood, p.274

Another feature of the Canadian tax legislation that tends to offset monetary policy is the option given the taxpayer to pay his current taxes in monthly installments based either on the taxable income of the previous year or on an estimate of the profits of the current year. If the firm selects the first alternative it will not incur any interest liability if the first nin installments are each smaller than one-twelfth of the total tax payable.

An example will illustrate this point:

	1958 (fiscal year = calendar year)		1959
Income Tax Payable	$1,200,000		$2,400,000
Payments:			
1958 July 31st	$ 100,000	1959 July 31st	$ 100,000
August 31st	100,000	August 31st	100,000
September 30th	100,000	September 30th	100,000
October 31st	100,000	October 31st	100,000
November 30th	100,000	November 30th	100,000
December 31st	100,000	December 31st	100,000
1959 January 31st	100,000	1960 January 31st	100,000
February 28th	100,000	February 28th	100,000
March 31st	100,000	March 31st	100,000
April 30th	100,000	April 30th	500,000
May 31st	100,000	May 31st	500,000
June 30th	100,000	June 30th	500,000
Total	$1,200,000		$2,400,000

32
See Richard A. Musgrave, Reforming the Tax System - Discussion, American Economic Review, L (1960) p. 492

33
If 'r' is the prescribed rate of post-tax return on investment and 'x' is the rate of tax on profits, then the pre-tax rate of return on investment, 'y', that is needed to produce the prescribed post-tax rate of return is $\frac{r}{1-x}$.

See Carl S. Shoup, Some Problems in the Incidence of the Corporation Income Tax, American Economic Review, L (1960) p. 469.

34
Musgrave, pp. 492-493

35
John Davis, The Canadian Chemical Industry, Royal Commission on Canada's Economic Prospects, (Ottawa, 1957), p. 77.

36

INDEX OF TOTAL INDUSTRIAL PRODUCTION

1953 = 100

	Relative Importance 1953	1950	1956	1959
Belgium	4.6	93	123	119(a)
France	15.2	89	128	153
W. Germany[1]	23.1	72	139	162
Italy	9.3	78	128	156(a)
Luxembourg	0.2	89	124	126(a)(b)
Netherlands	3.8	88	123	137(a)
Total Common Market	56.1	80	132	152
Austria	2.1	86	138	154(a)
Denmark	1.5	98	115	135
Norway	1.5	88	127	130
Portugal	n.a	--	---	---
Sweden	4.4	95	115	122(a)
Switzerland	n.a	--	---	---
United Kingdom	31.5	94	114	121
Total Free Trade Area	41.0	94	116	124
Total OEEC[2]	100.0	86	125	140
Canada		83	120	128
United States		84	107	112

[1] excludes Saar, which accounted for .5% of total industrial production of OEEC members in 1953.

[2] excludes Switzerland and Portugal, but includes the following countries and related 1953 production percentages: Greece (.7); Ireland (.6); Spain (n.a); Turkey (1.0); and countries shown separately above.

(a) eleven-month average

(b) figures based on unadjusted data

Sources: OEEC: National Industrial Conference Board
Canada: Dominion Bureau of Statistics
United States: Federal Reserve Board

37
Sec. 12. [Deductions not allowed.]

Sec. 12(1)

(1) In computing income, no deduction shall be made in respect

Sec. 12(1)(a)

(a) General limitation: an outlay or expense except to the extent that it was made or incurred by the taxpayer for the purpose of gaining or producing income from property or a business of the taxpayer,

Sec. 12(1)(b)

(b) Capital outlay or loss: an outlay, loss or replacement of capital, a payment on account of capital or an allowance in respect of depreciation, absolescence or depletion except as expressly permitted by this Part,

.....

38
Grahan & Vick Ltd. vs. M. N. R. (1 Tax ABC 343, p. 348)

39
TABC 58, DTC 711.

40
13 TABC, p. 429. The company undertook a survey of the efficiency of its operations and of the possibility to distribute natural gas. Expert outside help was engaged; the final report submitted by these experts to the company recommended that the company purchase natural gas while preserving its existing facilities in case of emergency. The court held that the expense incurred was deductible.

41
The taxpayer, a public utility, engaged outside help to make a reappraisal of its assets in order to get get permission for an increase in its rates. The financial situation of the company meanwhile improved so that no increase in rates was made. The expense connected with the reappraisal was held deductible.

42
It seems to the writer that the ceiling on outlays for research is particularly restrictive.

43
See note 36.

44
Source: Canadian Tax Foundation, Taxes Abroad: United Kingdom, No.3, October, 1957.
Mr. Robin J. Rugg, C.A., confirmed the fact that these provisions of the United Kingdom tax legislation have not been changed since 1957.

45
The Board may direct a taxpayer to use its reserve; however, this power has never been used so far.

46
Source: Martin Norr, Taxation and Stability, Guidance from Sweden, Harvard Business Review, 38 (1960), pp. 50-58.

47
Another interesting feature of the German tax system is the inventory reserve provisions. Where the market value at the close of the year is more than 10% above the value at the commencement of the year, the taxpayer may establish a deductible inventory reserve in respect of that portion of the increased value which is due to price increases. If after four years the reserve is not absorbed by a corresponding price reduction, the unabsorbed portion becomes taxable unless the taxpayer has made the appropriate adjustments to income during the four year period.

Source: Canadian Tax Foundation, Taxes Abroad, Western Germany, No. 6, November 1958.

48
Information as to the French Income Tax legislation was difficult to botain. The author finally got some information from the Consulate General of France in Montreal. The new provisions were also published in the American Metal Market, May 13, 1960, p. 1.

49
The Internal Revenue Service has published a list of depreciation rates applicable to various assets. This list which is called Schedule F, is intended as a guide to the taxpayer. The rates published are not mandatory.

50
Dan Throop Smith, p. 470.

51
J. Grant Glassco, Certain Aspects of Taxation Relating to Investment in Canada by Non-Residents, Royal Commission on Canada's Economic Prospects, 1956, p.15.

52
Sources: C. C. H. Limited

53
A. K. Eaton, Where Angels Fear to Tread, Canadain Tax Journal, VII (1959) p. 433.

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