

CORPORATE SAVING IN CANADA

1946-1964

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Thesis presented to the Faculty of
Social Sciences of the University
of Ottawa as partial fulfillment
of the requirements for the degree
of Master of Arts in Economics.

Ottawa, Canada, 1966



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INTRODUCTION

The aim of this study is fourfold. The first objective is to present available data and supplementary estimates relating to corporate saving in Canada.

The second objective is to examine, in the light of available literature, the factors which may determine the level of corporate savings.

The third objective is to examine and comment on the availability and quality of statistical and other information on corporate saving, especially with reference to the situation in Canada.

The fourth objective is to analyse the data and supplementary estimates relating to corporate saving, as they apply to Canada. This analysis is mainly presented in terms of time series dealing with changes in relative magnitudes of determining factors and components of corporate savings, as well as the basic interrelationships involved.

This thesis does not claim to be exhaustive or complete. The area of corporate saving behaviour is a complex one. Corporate saving is thought to be influenced by a host of factors, which, insofar as this could be ascertained, have as yet not been fully explored in economic literature to date.

A good deal more could have been said about the

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findings, based upon empirical evidence, of United States economists such as Kuznets, Klein, Koopmans, Goldsmith, Lintner, Darling, Modigliani and many others, who carried out pioneering work in the field of corporate saving's data and determinants.

However, the basic approach of this thesis is to concentrate upon the Canadian experience and upon Canadian authors because this author believes the Canadian background to be quite different from that of the United States and Canadian authors consulted to be quite as reliable and authoritative as their colleagues in the United States. The basic difference in the United States and Canada is deemed to be the difference in ownership of corporate enterprise, different tax-laws and regulations, etc. In short, whereas on a theoretical basis there may be close agreement, empirical evidence is apt to be significantly different.

Canadian authors such as Deutsch, Hood, Gordon, Firestone, the staff members of various Royal Commissions and the staff members of various Canadian federal departments and other institutions have carried out pioneering work in the field of business saving and investment as well as in related areas, which is of comparable importance to general knowledge about the Canadian economy, despite a lack

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of resources at the command of their U. S. Colleagues.

Where such information is available and where enlightenment is sought with respect to the Canadian experience this author thought it only natural to draw upon these sources. Although at several points in this study the conclusion must be reached that certain areas of information are deficient it must here also be pointed out that this situation is by no means static.

Undoubtedly this area of economic experience will receive further attention from Canadian authors. A good example of substantial progress is the recently published report for 1962 under the Corporations and Labour Unions Return Act, compiled by the Canadian Dominion Bureau of Statistics, which provides information on Canadian corporations of a new character.

Taking into account the growth of the corporate form of enterprise, as discussed in this study, growing interest in corporate saving appears to be a must. As will be shown elsewhere in this study the corporate form of enterprise is a growing one. The year to year increases in the number of corporations in Canada and the concomitant growth of income, dividends, saving and investment added to those of existing corporations point to the dynamic growth of the corporate sector of the economy.

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At the same time it should be realized that a study on corporate saving is severely hampered on two counts.

First, traditional economic theory does not recognize the corporation as a distinct behavioural entity. Traditional analysis concentrates upon the firm in general rather than upon the corporation. The corporate form of enterprise is, among firms, only one form of organization among many. In view of the rapid development of this form of organization, which, as regards its capacity to earn profits, may well become the dominant one in the near future, a certain lag in adaptation of statistical reports on its behaviour is to be expected and indeed found to exist.

Secondly, and this may well be due to the uncertain position of the corporate form of organization in economic theory, there exist widely divergent views among economists as to the conclusions to be reached in analyzing corporate saving behaviour. This observation applies especially to analysis of the corporation and its activities on the macro-economic level. On the micro-economic level standardized information appears to be readily available, especially so, where rapid development in the segregation of ownership and management, matched by equally rapid development in the decision-making process due to new and powerful techniques

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mostly of a mathematical nature, necessitated fast and widespread action.

Under these circumstances a study of corporate saving is of necessity limited to the objectives set out above. Vast resources would be required to collect all data deemed relevant and desirable with respect to corporate saving behaviour and to attempt, on their basis, a penetrating analysis in order to place the corporate form of organization within a proper framework of definitive economic theory.

Despite the fact that such resources are not at this author's command, the hope is expressed that this study, be it in modest measure, may contribute to not only knowledge, but also the development of interest, in this absorbing area of economic behaviour.

CHAPTER I

CORPORATE SAVING; DEFINITION AND REFERENCES

1. Definition of National Saving.

The Canadian Dominion Bureau of Statistics, for national income accounting purposes, defines national saving as "total production less personal expenditure on consumer goods and services less government expenditure on goods and services".¹

Alternatively, National Saving may be defined as the sum of factor incomes accruing to Canadian residents less their expenditures on goods and services. National Saving, according to these definitions, constitutes then, broadly speaking, that portion of the current income flow, which is not consumed in the period of its generation by its recipients.

National Saving is thus conceived of as a residual. It derives from the simple equation "Income - Expenditure on consumption = Saving", (i.e. $Y - C = S$).

This aggregate concept of saving depends upon the prevailing concepts of both income and expenditure on consumption; that is to say, variance in the definition of

¹ Dominion Bureau of Statistics, Research and Development Division, National Accounts, Income and Expenditure, 1926 - 1956, Ottawa, Queen's Printer, 1962, p.108.

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one or both these concepts entails a corresponding variance in the savings-residual.

It should be noted that, at this time, neither a direct estimate of national saving, nor a direct estimate of corporate saving is feasible for national income accounting purposes or available from sources other than the Canadian National Accounts.

2. Aggregate Theoretical Interrelationships

Keynes defines national saving as "the excess of income over expenditure on consumption."² By consuming part of their income the residents of a nation return funds to the producers, whose goods and services they acquire. By refraining from consumption the remaining part of their income, i.e. "the excess of income over expenditure on consumption" or "savings" are created. This supply of savings is drawn upon by the producer or entrepreneur for productive purposes. In other words, savings and investment are identical. Investment is thus, analogous to savings, also conceived as a residual. It is derived from the equation "Income - Expenditure on consumption = Investment" or, alternatively, "Income \rightarrow Consumption = Investment", (i.e. $Y - C = I$).

² J.M. Keynes, The General Theory of Employment, Interest and Money, London, McMillan & Co. Ltd., 1961, p.61.

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From the two equations:

$$Y - C = S$$

and $Y - C = I$

the equation $S = I$ is derived, which set of equations underlies a significant approach to the analysis of the working of the modern economic system.

The Savings - Investment identity cannot, however, be adopted without qualification. Taking into account a time-element, it is evident that investment is preceded by saving.

Hence the question arises in which manner the savings - investment equality is achieved. Furthermore, bank-credit and reactivated idle balances are also sources of funds for investment, which funds do not necessarily have to be generated in the same period in which investment takes place. In addition consideration is usually given to the fact that savings are, in the modern economy, not generally generated by the same group of persons or institutions committing funds to investment, which would seemingly impair the achievement of equality between savings and investment over the same period of time.

Prof. D.H. Robertson defined Investment as the sum of saving, bank credit and dishoarding ($I = S + A + B$).³

³ D.H. Robertson, "Saving and Hoarding," Economic Journal, September 1933, p.411.

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He pointed out that investment so constituted derives from savings, bank credit and dishoarding generated prior to the event of investment.

Although Keynes agreed that the funds available for current investment could be stated in terms of "prior saving" plus "dishoarding and credit expansion" he prefers to base his analysis on the point of view that the amount of saving which is taking place at the same time as the investment must be exactly equal to that investment.

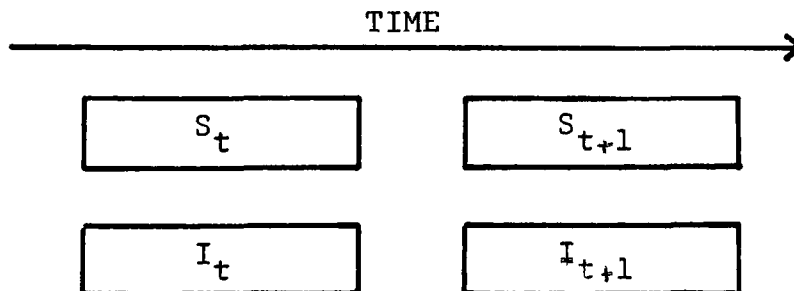
Mathematically expressed this implies that if Keynesian

$S_t = \text{Robertsonian } S_t + A_t + B_t$ then the corresponding

Keynesian $I_t = \text{Robertsonian } I_{t+1}$.

The following diagram illustrates the two different points of view.

Keynes:



Robertson:

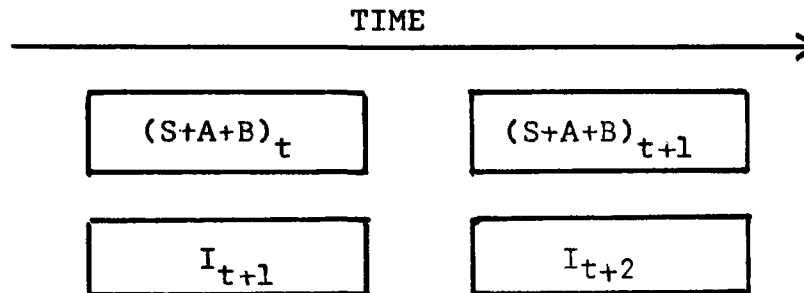


DIAGRAM 1.

From the preceding illustration and text it is evident that the Robertsonian point of view entails period analysis. The Keynesian approach involves time - rates - of change analysis.

The latter method is commonly adopted in national income accounting. This applies also to the Canadian National Accounts within the framework of which this study of corporate saving in Canada will proceed.

3. Saving and the National Accounts.

In the Canadian National Accounts four sectors are recognized, viz. the personal, the government, the business and the non-resident sector.

The accounts, organized on this basis, recognize and record transactions, defined as any dealing in which some-

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thing is exchanged for money or a claim on money between and within these sectors.

The saving of each national sector is carried into the "National Saving Account", which shows the source as well as the disposition of the saving of each sector.

Personal Net Saving is transferred from the personal income and expenditure account; Business Gross Saving derives from the business operating account; Government Surplus or Deficit from the government revenue and expenditure account; Inventory Valuation Adjustment from the business operating account.

National Saving, in conformity with the definition used for national accounts' purposes, consists of the saving of all Canadian residents. The essential elements of national saving are Personal Net Saving, Business Gross Saving and Government Net Surplus or Deficit.

Business Gross Saving or Business Gross Fixed Capital Formation includes new residential construction.

Business Gross Saving further includes the net saving of corporate business, whilst savings of unincorporated business is included in Personal Net Saving.

Further elements of national savings, according to the concepts employed by the Dominion Bureau of Statistics, are the "Inventory Valuation Adjustment" and a "Residual error of estimate", the latter being a balancing

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item divided equally between the 'source' and 'disposition' sides of the National Saving Account.

The disposition-side of this account records savings as investment, thus forming the basis for the definition used for national accounts' purposes.

The item "Inventory Valuation Adjustment" on the sources-side is the difference between the value of the physical change and the change in book-value of the inventory, insofar as this inventory includes goods produced in the period to which the inventory valuation applies.

4. Business Saving and Corporate Saving.

The Business Sector of the National Accounts is defined as follows:

"The Business Sector includes all transactors which operate for gain, including corporations, unincorporated business enterprises, independent professional practitioners and government business enterprises. The basic characteristic is that these transactors produce goods and services for sale at a price which is intended to cover the cost of production. This definition is somewhat qualified by the inclusion of home-owners' housing activity and the construction of new buildings by private non-commercial institutions as well as imputed rent upon government

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buildings".⁴

Business saving then is, on the basis of this definition the sum of savings generated by corporations, unincorporated business enterprises, independent professional practitioners and government business enterprises.

In the collection of information and the subsequent processing of the data obtained, the Dominion Bureau of Statistics encounters some difficulties with respect to business saving. The following indicates the accounting conventions adopted.

"National Saving, as set out in Canada's official National Accounts, represents the saving of all Canadian residents and consists essentially of three elements: Personal Net Saving, Business Gross Saving and the net surplus or deficit of all levels of government - federal, provincial and municipal.

Personal saving is shown in the accounts on a net basis only because in recording the disposition of National Saving all private investment, including residential construction, is by accounting definition allocated to the business sector of the economy.

Consequently, as no capital formation is identified with the personal sector, no capital consumption allowances are attributable to persons.

Hence, in accord with this accounting convention, the only saving assigned to persons is necessarily net and it should be noted that Personal Net Saving includes the net retained earnings of unincorporated businesses. On the other hand, Business Gross Saving consists of all private capital consumption allowances plus the

⁴ Dominion Bureau of Statistics, op.cit., p. 117.

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net saving of corporations, that is, the net current profits retained by corporations after payment of taxes and dividends".

With regard to determining the savings of the unincorporated business enterprises a statistical difficulty is encountered in separating "business saving" and income of the owner of the enterprise, who combines ownership with that of an entrepreneur and whose income, in most cases, includes profits to be retained as savings.

5. Corporation Data Sources

The Dominion Bureau of Statistics publishes data on corporation savings' components in both the National Accounts on an annual basis and on a quarterly basis, viz. in the publications "National Accounts, Income and Expenditure", annually and quarterly. and "Quarterly Corporation Profits".

For the compilation of the statistics on corporation profits in the annual and quarterly sets of the National Accounts the D.B.S. uses the figures compiled by the Department of National Revenue and published annually under the title "Taxation Statistics".

⁵ F. Wildgen. National Saving at Potential Output to 1970, Staff Study No. 10, prepared for the Economic Council of Canada. Ottawa, Queen's Printer, 1965, p. 2.

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The D.B.S. compiles data for the publication "Quarterly Corporation Profits" from its own sample survey of corporations.

The data contained in the latter publication are stated to be less reliable than the data based on "Taxation Statistics". Since however the latter data are only available some two years following the year they refer to, this disadvantage is partly offset by the earlier availability of the quarterly data. Aside from the fact that the sample survey for the publication "Quarterly Corporation Profits" covers fewer corporations than do the "Taxation Statistics", there is another basic difference which makes the quarterly profit data less suitable for a study on corporate saving. The basis for the sample consists of "all companies incorporated in Canada, except government-owned companies and incorporated co-operatives."

Canadian unincorporated branches of foreign corporations are also included in the totals while foreign subsidiaries of Canadian corporations are excluded".⁶

⁶ Dominion Bureau of Statistics, Quarterly Corporation Profits, 1950 - 1954, Ottawa, Queen's Printer, 1955, p. 7.

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The "Taxation Statistics" on the other hand present an analysis of corporation income tax returns of all companies filing a T 2 Corporation income tax return whether taxable under the Income Tax Act or not.⁷

The adjustments to corporation profits made by the D.B.S. to adapt the Department of National Revenue's figures to the National Accounts are briefly summarized as follows:

"Depletion charges, which are deductible for income tax purposes are added back to 'corporation profits before tax', since discoveries of new natural resources are not capitalized and are, therefore, not counted as part of capital formation. The exhaustion of natural resources is not regarded, therefore, as a charge against the National Income. Another adjustment is for provincial mining and logging taxes which are allowed as an expense for income tax purposes but which are added back to profits for the National Accounts. Similarly, banks calculate profits for taxation purposes after transfers to reserves but these transfers are added back to the National Income since they are not a charge against production and a deduction is then made for estimated bad debt losses.

Charitable contributions made by corporations, also deductible as an expense under income tax regulations are added back on the grounds that they are not a direct cost of production, but merely a distribution of earnings (a transfer payment). Corporate losses are also deducted in order to bring the figures to a profits less losses basis, and an adjustment is made to eliminate

⁷ Department of National Revenue, 1964 Taxation Statistics, Part 2, Ottawa, Queen's Printer, 1964, p. 16.

profits which have been refunded to the government through renegotiation of war contracts. It should be noted that under the Canadian income tax regulations, taxable profits, calculated before payment of dividends, do not include dividends received from Canadian corporations. No special allowance need therefore be made to eliminate Canadian inter-corporate dividends. The profits of co-operatives are included in the National Accounts in corporation profits".⁸

This study will draw essentially upon corporate savings' information contained in the D.B.S. publications based on the Department of National Revenue's statistics. Other sources will be drawn upon occasionally as indicated. As to the quality of available data, the comments by one authority should be borne in mind:

"..... we must once again remind the reader that while we feel we have done the best that can be done in marshalling existing information on the transactions of the corporate sector we are not satisfied with existing basic information. Several of the important estimates are residual estimates; information underlying other estimates is incomplete, and for some categories we could not produce estimates that warranted separate display".⁹

6. Definition of Corporate Saving.

Corporate Saving is included in Business Saving. A distinction is made between Gross and Net Corporate Saving.

⁸ Dominion Bureau of Statistics, op. cit., p. 114.

⁹ Wm. C. Hood, Financing of Economic Activity in Canada, Royal Commission on Canada's Economic Prospects, Ottawa, 1958, pp. 206 - 207.

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Gross Corporate Saving consists of Corporate Capital Consumption Allowances¹⁰ and net current profits retained by corporations after payment of taxes and dividends.

Net Corporate Saving consists of these net current profits retained by corporations.

There is then no item "Corporate Saving" included in any of the tables of the Canadian National Accounts. To arrive at Gross Corporate Saving for each year, several items from different tables must be combined. Net Corporate Saving is however directly included as the item "Undistributed Corporate Profits", constituted as set out before.

Gross Corporate Saving:

The components of Gross Corporate Saving, i.e. "Corporate Capital Consumption Allowances and Miscellaneous Valuation Adjustments" and "Undistributed Corporate Profits" are concepts which are subject to extensive qualification.

¹⁰ Those of government business enterprises are included.

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The item "Capital Consumption Allowances and Miscellaneous Valuation Adjustments"¹¹, includes two classes which at present are not separable: an allowance for consumption of fixed capital in the economy and various valuation adjustments. The latter arise from differences in the concepts of income and capital consumption as reflected in business accounting records and the corresponding concepts required for national accounting purposes.

Miscellaneous valuation adjustments include in general some items representing cost of production which cannot be classed as returns to the factors of production and items basically constituting income or profit adjustments.

The items referred to are respectively:

1. Depreciation.
2. Capital outlay charged to current expense.
3. Non-capital outlays charged to capital account.
4. Claim portion of business and residential insurance.
5. Scrap and salvage allowances.
6. Amortization, development write-offs, deferred maintenance and miscellaneous charges to reserves.
7. Bad debt allowances.

¹¹ See e.g. Table 51 of Dominion Bureau of Statistics, National Accounts, Income and Expenditure, 1926-1956, Ottawa, Queen's Printer, 1962, p. 92. In this Table the item is allocated between Corporations, Individuals and Unincorporated business, and Government business enterprises.

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Depreciation; this item is the mainstay of the item "Capital Consumption Allowances and miscellaneous valuation adjustments". Included are allowances for depreciation on business fixed capital, residential housing, capital equipment of some types of private non-commercial institutions (e.g. municipal hospitals), and government-owned buildings. It is necessary to adjust available book value figures insofar these refer to original cost depreciation figures. The adjustment brings available book value depreciation figures to the level of current replacement value of capital assets currently consumed. This depreciation valuation adjustment is not made explicit in the Canadian National Accounts due to statistical difficulties.

Capital outlay charged to current expense; this item adjusts business accounting practice in those cases where capital assets, e.g. furniture, office-equipment, tools and so on, have been charged as a current expense rather than capitalized. This is necessary in order to conform to the definition of fixed capital formation used for national accounting purposes, which is framed in terms of tangibility

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and durability of the goods under consideration.¹²

Non-capital outlays charged to capital account; under this item the converse procedure is adopted to correct for charges represented as capital outlays by business. Included are corrections arising out of mining development and exploration costs, brokerage fees capitalized by business and real estate commissions.

Claim portion of business and residential insurance; under this heading amounts arising from insurance claims are adjusted in the required manner to balance the National Accounts.

Scrap and Salvage allowances; under this item adjustments are made for the inclusion of receipts from scrap, salvage or trade-in value of old machinery and equipment which has been replaced by new machinery and equipment.

Amortization, development write-offs, deferred maintenance and miscellaneous charges to reserves; this item serves to

¹² Business gross fixed capital formation, as defined in the National Accounts, includes expenditure of business for new construction and new machinery and equipment. Only new construction and new machinery and equipment are included; purchases of land, used buildings and second-hand machinery and equipment are excluded since they do not represent current production of goods and services. Imported used machinery and equipment are 'new' as far as Canada is concerned and represent an addition to the total stock of capital equipment in Canada; such purchases are therefore included in expenditure on fixed capital. Replacements and major alterations are treated as capital formation, but ordinary repair and maintenance expenditures are not.

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include in capital consumption allowances amounts corresponding to certain amortization and other charges analogous to or in line of depreciation which have been allowed as deductions from revenue for taxation purposes.

Bad debt allowances; these charges are included as a valuation adjustment in capital consumption allowances and miscellaneous valuation adjustments.

Gross Corporate Saving includes besides Capital Consumption Allowances and Miscellaneous Valuation Adjustments the component Undistributed Corporation Profits or Net Corporate Saving.

Undistributed Corporation Profits:

Undistributed corporation profits are defined for National Accounts' purposes as those profits retained by the corporation after payment of taxes, dividends and charitable contributions out of current earnings.

The earnings and assets of the corporation and of business enterprises in general, are affected by changes in inventories over the current period due to price changes and changes in stock held. The latter, i.e. the physical change in inventories, is included in the National Accounts as the value of physical change in inventories reflecting a change in physical quantities held valued at the average prices of the period. A revaluation of inventories takes place at the end of the accounting period, giving rise to

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an adjustment of book-values of the carry-over portion. To obtain the value of physical change in inventories the book value of inventories is deflated to remove the effect of price changes and the derived physical change is subsequently valued at average prices of the current period.

A further adjustment is necessary to compensate for unrealized gains or losses arising from the effect of price changes on holding of inventories, i.e. the inventory valuation adjustment which affects business profits as recorded in the National Accounts. This inventory valuation adjustment is the difference between the value of the physical change and the change in book value.

The entry "Inventory Valuation Adjustment" includes both corporate and unincorporated business components, principally because data to separate these components are not yet available.

Undistributed corporate profits are arrived at by adding to corporation profits before taxes the dividends paid to non-residents, resulting in a figure of total profits, from which are deducted corporation income tax liabilities, dividends paid to non-residents, dividends paid to Canadian persons and charitable contributions made by corporations.¹³

¹³ Note that addition and subsequent deduction of dividends paid to non-residents in the accounts is for the purpose of providing complete information only.

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Since no account is taken of inventory valuation adjustment, due to the inseparableness of corporate and unincorporated businesses' shares in the item, undistributed corporate profits are, depending on the nature of the inventory valuation adjustment, either understated or overstated in real terms.

How important are inventory valuation adjustment figures relative to Business gross saving and Undistributed corporate profits in particular? The answer, as indicated by the figures in Table I, is, that these figures are by no means negligible.

It may be suggested here that a simple method be adopted to allocate inventory valuation adjustment between the corporate and unincorporated sector, based on the following assumptions:

1. The relation between inventory valuation adjustment and both corporate and unincorporated business capital consumption allowances is proportionate.
2. Price changes affect equally inventories of corporate and unincorporated business enterprises

3. Accounting conventions are such that no essential difference arises in the calculation of corporate and unincorporated business inventory valuation adjustment.
4. No other factors exist which disturb the simple relation between inventory valuation adjustment and corporate as well as unincorporated business capital consumption allowances.

A further adjustment to corporate capital consumption allowances and undistributed corporate profits is necessitated by the occurrence of the item 'Residual Error of Estimate' in the National Saving Account. To approximate the highest degree of accuracy possible in working with the figures available in the National Accounts the residual error of estimate should be allocated to the various entries in the National Savings Account in proportion to their magnitude. The portion allocated to Business Capital Consumption Allowances should in turn be allocated proportionally between Corporate and Unincorporated Business Capital Consumption Allowances. Since the Residual Error of Estimate is of comparatively limited influence upon the savings' data, its occurrence in the National Accounts will not be taken into further consideration in this study, either in quantitative or in

qualitative terms.¹⁴

7. The Structure of Gross and Net Corporate Saving.

In order to present a comprehensive view of the structure of gross and net corporate saving the components are listed below.

1. Depreciation. (positive)
2. Capital outlay charged to current expense.
(positive)
3. Non-capital outlays charged to capital account.
(negative)
4. Claim portion of business and residential
insurance. (positive)
5. Scrap and salvage allowances. (positive)

¹⁴ This procedure is in fact also based upon conclusions with respect to the statistical behaviour of the Residual Error of Estimate reached by D.J. Smyth (University of Birmingham) in his article "The Residual Error of Estimate in the Canadian National Accounts," Canadian Journal of Economics and Political Science, Vol. XXX, No. 4, November 1964. The conclusions entail that "considerable care should be exercised in using annual national income data in the light of the evidence on the behaviour of the residual error, for the annual residual error series do not come out very well from the statistical tests. The annual post-war series considered alone are more satisfactory. This is not surprising as we should expect the residual error to become less important and its behaviour more in accordance with the desired statistical properties as sources and methods are improved".

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6. Amortization, development write-offs, deferred maintenance and miscellaneous charges to reserves. (positive)

7. Bad debt allowances. (positive)

A. CORPORATE CAPITAL CONSUMPTION ALLOWANCES AND MISCELLANEOUS VALUATION ADJUSTMENTS.

(ITEMS 1 + 2 - 3 + 4 + 5 + 6 + 7).

8. Corporation profits before taxes and including dividends paid to non-residents. (positive)

9. Corporation income tax liabilities. (negative)

10. Dividends paid to non-residents. (negative)

11. Dividends paid to Canadian persons. (negative)

12. Charitable contributions from corporations. (negative)

B. UNDISTRIBUTED CORPORATION PROFITS OR NET CORPORATE SAVING.

(ITEMS 8 - 9 - 10 - 11 - 12).

C. GROSS CORPORATE SAVING.

(ITEMS 1 + 2 - 3 + 4 + 5 + 6 + 7 + 8 - 9 - 10 - 11 - 12).

13. Inventory valuation adjustment share based on Capital consumption allowance proportion. (positive or negative)

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D. GROSS CORPORATE SAVING ADJUSTED FOR INVENTORY
VALUATION.

(ITEMS 1 + 2 - 3 + 4 + 5 + 6 + 7 + 8 - 9 - 10 - 11 -
12 ± 13).

TABLE I
INVENTORY VALUATION ADJUSTMENT IN RELATION TO
BUSINESS GROSS SAVING AND UNDISTRIBUTED CORPORATE PROFITS
1946-1964
(millions of dollars)

Year	Business Gross Saving	Undistributed Corporate Profits	Inventory Valuation Adjustment	T.V.A. as a percentage of B.G.S.
1946	1508	488	-254	16.8
1947	1885	628	-571	30.3
1948	2131	790	-506	23.7
1949	2149	587	-112	5.2
1950	2831	752	-374	13.2
1951	2853	662	-643	22.5
1952	3083	618	106	3.4
1953	3378	729	- 11	.3
1954	3484	571	86	2.5
1955	4292	962	-189	4.4
1956	4793	1131	-238	5.0
1957	4863	854	- 78	1.6
1958	4774	876	- 35	.7
1959	5185	986	-122	2.4
1960	5269	837	- 70	1.3
1961	5327	757	- 89	1.7
1962	5823	903	-113	1.9
1963	6283	973	-195	3.1
1964	6969	1252	-121	1.7

Source: Canadian National Accounts, Tables 17 and 50.

TABLE II
 INVENTORY VALUATION ADJUSTMENT DISTRIBUTED BETWEEN
 UNINCORPORATED BUSINESS AND CORPORATION PROFITS ON
 THE BASIS OF PROPORTIONATE CAPITAL CONSUMPTION ALLOWANCES
 1946-1964
 (millions of dollars)

Year	Inventory Valuation Adjustment	Government and Unincorporated Business Capital Consumption Allowances	Corporate Capital Consumption Allowances	Undistributed Corporation Profits	Share of Inventory Valuation Adjustment	Undistributed Corporation Profits Including I.V.A.
1946	-254	577	421	488	-107	595
1947	-571	641	582	628	-272	900
1948	-506	739	702	790	-247	1037
1949	-112	876	797	587	- 53	640
1950	-374	1006	907	752	-177	929
1951	-643	1166	1037	662	-303	965
1952	106	1233	1189	618	52	566
1953	- 11	1319	1354	729	- 6	735
1954	86	1384	1521	571	45	526
1955	-189	1533	1733	962	-100	1062
1956	-238	1666	1976	1131	-129	1260
1957	- 78	1767	2242	854	- 44	898
1958	- 35	1808	2091	876	- 19	895
1959	-122	1901	2303	986	- 67	1053
1960	- 70	1997	2426	837	- 38	875
1961	- 89	2093	2447	757	- 48	805
1962	-113	2201	2713	903	- 62	965
1963	-195	2334	2838	973	-107	1080
1964	-121	2482	3125	1252	- 67	1319

Source: Canadian National Accounts, Tables 17, 50 and 51.

CHAPTER II

DETERMINANTS OF CORPORATE SAVING

1. The Level of Corporate Saving.

As Goldsmith remarks ----- "there are two basic sources for a statistical study of the determinants of saving and of the form of the relation between saving and the variables which determine it - time series and cross-section studies. In the first approach an attempt is made to determine the similarity of movement between saving and the determining variables such as income, asset holdings, and interest rates; and to measure the degree of influence of these factors on saving by means of correlation analysis or similar techniques on the basis of time series of national aggregates for the different variables. Cross-section studies, on the other hand, use information derived from a sample of households, generally a few thousand units, to determine the relationship between the same variables by the same statistical methods, but only for one short period of time, commonly one year ----- Analysis of time series permits us to follow structural changes in the relationship between saving and other variables and helps us to appraise the stability of these relationships; but in the present state of the available data it is limited to aggregates

for large groups of savers, such as all nonfarm households or agriculture as a whole".¹⁵

These observations of Goldsmith with respect to savings in general apply also to time series on corporate saving and related variables.

Corporate saving has indeed been extensively studied in terms of correlation analysis.

In correlation analysis corporate saving, as a dependent variable, is related to one or more independent variables. The latter are referred to as determinants.

These determinants are affected by factors which have a significant bearing upon corporate saving, such as fiscal policy, monetary policy, the general price level, etc.

In this chapter the most important determinants are first enumerated and classified into three main categories. Further, the factors which affect the determinants of corporate saving are indicated and examined.

Thus, insight is gained in the factors which determine corporate saving behaviour and a basis is laid for the selection of statistical information to be included in

¹⁵ R.W. Goldsmith, "Trends and Structural Changes in savings in the twentieth Century," Savings in the Modern Economy, Symposium on Savings, University of Minnesota Press, Minneapolis, 1953, pp. 141-142.

this thesis.

The selection of the time series for this study must of necessity be based upon a specific criterion—the relative importance of the statistical information with respect to corporate saving.

Such a criterion can not be derived from the Canadian National Accounts. Some of the estimates included in these accounts do not specifically refer to the corporate form of enterprise. Further, some of the statistical information considered to be relevant is not included in the National Accounts.

However, in economic literature corporate savings is considered to be functionally dependent upon, among others, a number of variables enumerated below.

These determinants are, in the form of time series, presented in Chapter III of this study in addition to statistical information on corporate saving itself. The criterion used for the selection of time series is thus primarily based upon the functional dependency of corporate saving upon the variables presented.

The Determinants of Corporate Saving:

There appears to be no widespread agreement as to the choice of variables which determine the level of

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corporate saving. The latter will, in this chapter, refer to net corporate saving, unless otherwise indicated.

This practice is in line with that followed in current economic literature. (See references indicated in footnote 16 of this study).

As the most important determinants of corporate saving the following variables are listed:

(1) current net corporate income after taxes, (2) previous period's corporate income, (3) expected corporate income, (4) lagged dividends, (5) average of current investment less capital consumption allowances and investment intentions for the next year less current capital consumption allowances, (6) current fixed business investment less capital consumption allowances, (7) the functional relation of corporate profits to the national income, (8) the relation of tax liabilities to profits before taxes, i.e. the tax structure, (9) the functional relationship between profits after taxes and dividend distributions, (10) the relation between the amount of profit per unit of equity capital and dividends. Considered as determinants are: (11) the rate of current investment requirements, (12) previously accumulated surplus; and in terms of the ratio of savings to income, i.e. (S/Y) carried over to corporate saving, (13) the

current deflated per capita national income in relation to the previous highest value of this variable.¹⁶

Smith notices that "... it has been argued that while there are a large number of factors influencing corporate saving the principal determinants can be classified into two broad sets, the first arising from factors involved in the investment decision and the second arising from factors which promote stability of dividends"¹⁷

At the same time it should be noted that another grouping of determinants could be based on income considerations.

This category of determinants is in line with the traditionally accepted functional relationship between savings and income.

¹⁶ (1), (2), (3), (4), (5), (6), See D.C. Smith, "Corporate Saving Behaviour," Canadian Journal of Economics and Political Science, Volume XXIX, Number 3, August, 1963, pp. 304-306.
(7), (8), (9), See J. Lintner, "The Determinants of Corporate Saving Behaviour", Savings in the Modern Economy, p. 254. (Note that Lintner defines corporate saving as corporate profits after taxes and inventory valuation adjustment less net dividends distributed).
(10), (11), (12), See S.P. Dobrovolsky, Comment upon previously mentioned article by J. Lintner, op. cit., p. 257.
(13), See F. Modigliani, "Fluctuations in the Savings - Income Ratio: a Problem in Economic Forecasting", Studies in Income and Wealth, Part V, Volume II, National Bureau of Economic Research, New York, 1949, p. 379.

¹⁷ Smith, op. cit., p. 304.

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Among the determinants previously enumerated this category would include: (1), (2), (3), (7) and (13).

Thus the determinants of corporate saving may be classified into three main categories, viz. (a) corporate income, (b) corporate investment and (c) corporate dividends.

To obtain the desired insight into corporate saving behaviour the factors affecting the level of corporate income, investment and dividends are further examined in this chapter.

Corporate saving is in current economic literature considered to be dependent upon not only income but also upon investment and dividends, as indicated previously.

Since these determinants serve as a basis for the selection of time series included in this study, a few observations on the nature of these determinants may be appropriate.

In selecting corporate income as a determinant of corporate saving, a traditional theoretical approach is adopted. In economic theory saving is considered to be dependent upon income, or, in other words, saving is a function of income.¹⁸

¹⁸ $S = f(Y)$, where $S =$ Saving and $Y =$ Income.

This functional relationship is however of a very simple nature; only two variables are involved and both variables relate to the same period of time.

However, economic theory does not preclude the possibility that saving is dependent upon other variables. Moreover, the degree of dependency upon other variables can be established through correlation analysis.

Examples of independent variables were enumerated in the above. These include other variables than income.

From these examples it is evident that the determinants may be expressed in different forms. These include e.g. current or lagged income, current, lagged ^{or} leading investment, current or lagged dividends, a ratio in which income on profits play a role, the rate of profit to a unit of equity, etc.

Numerous formulations are possible, provided they are expressed in the quantitative terms required for correlation analysis.

The basis for selection of a particular determinant is its effect upon the dependent variable. This in turn is dependent upon other variables.

It would lead far beyond the scope of this study to analyze all the important factors which influence each of the possible variations that could be selected as independent variable.

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These factors will therefore be related to corporate income, investment and dividends in the form in which these variables are reported in the time series of the National Accounts. Where comparable information is available from other sources, such data are used as a supplement to the information obtained from the National Accounts.

As to the criteria for the selection of a particular variation of determinants it is pointed out that there is need to evaluate carefully the interrelationship between corporate saving and the independent variable considered.

Account must be taken of both theoretical requirements and statistical problems, particularly availability, coverage and meaning of the data.

Factors affecting Corporate Income, Investment and Dividends:

Among the factors affecting the level of corporate saving through their effect upon corporate income, investment and dividends are deemed to be the most important: fiscal policy, monetary policy, the general price level, cost factors, dividend policy, status considerations and the formation of new corporations.

It is difficult to classify factors of such heterogeneous nature into a few clearly delineated groups. The prominent impact of one factor may be on the micro-

economic level, that of another factor may be on the macro-economic level. Some factors relate to the internal decision - making process of the corporation, other factors are outside the control by corporate management and therefore may be considered as external factors. Particular aspects of one and the same factor may be related to internal or external or even mixed considerations.

Nevertheless it seems advisable to concentrate upon both the internal and external aspects of each factor as well as upon its micro- or macro-economic nature. Such an approach is desirable because it takes account of the role of the corporation itself on the micro-economic level and the fact that determinants of corporate saving possess a, be it generally different, degree of aggregation. The need for such emphasis is expressed by Dobrovolsky as follows in his comment on Lintner's article on the determinants of corporate saving:

"I should think that the specific task, insofar as the determinants of corporate saving are concerned, is to investigate how much business firms tend to save at different profit levels, and what other factors, apart from profitability, affect their decisions to save. And I entirely agree with Mr Lintner's statement that in this kind of investigation it is essential to get down to the microcosmic level and study the behaviour of individual firms."¹⁹

¹⁹ Dobrovolsky, op. cit., p. 256.

Internal Factors:

Part of a corporation's saving over a given period of time is the result of a deliberate decision by management to retain all or a part of that period's net earnings. In contemplating how great a portion of these earnings shall be retained, management takes into account a number of considerations. Amongst these the more important are deemed to be dividend policy, cost of internal vs external financing and status considerations. The rationale of distribution is briefly summarized as follows:

"The object which a corporation has in view in deciding between distribution and non-distribution must, in theory at least, be to maximise the income ultimately distributed, taking present and future together -----".²⁰

External Factors:

A substantial part of corporate gross saving is generated subject to external factors. Amongst the more important are deemed to be fiscal policy, monetary policy and the general price level.

²⁰ J. Enoch Powell, Saving in a Free Society, Published for the Institute of Economic Affairs, Hutchinson & Co. Ltd., London, 1960, p. 16.

Factors on the Micro-economic Level:

Decisions of an internal nature are on the whole related to the micro-economic level. Several aspects of external factors also relate to this level, e.g. the relation between individual and corporate taxation rates as a factor considered in dividend policy.

Factors on the Macro-economic Level:

Primary factors on this level are considered to be the national income and the net increase in the number of corporations from period to period and concomitant effects.

With respect to the national income one author's view, with which this author fully agrees, is briefly paraphrased as follows. Emphasis on the relation between corporate income or profits on the one hand and the national income on the other hand is rather fruitless. Practically all economic phenomena are interrelated, emphasis on this approach would logically lead to a discussion of the determinants of national income and would end up with a general treatise on macro-economics.²¹ Moreover the concomitant discussion of the influence of corporate income upon national income, i.e. the degree of interdependence, would lead far beyond the scope of this study.

²¹ See Dobrovolsky, op. cit., p. 256.

2. Fiscal Policy

Three main aspects of fiscal policy have an important bearing upon the level of corporate saving. The Corporation Income Tax and Capital Consumption Allowances affect savings directly, whereas savings are indirectly affected by sales-tax, excise-tax, customs duties, etc.

Any change in fiscal policy entailing a decrease in tax-deductions or increase in corporate income-tax, the sales- or excise-tax, customs duties, etc. reflects upon the corporation's general savings' capacity.

Direct effect:

The corporation itself is taxed as a recipient of income. Two factors are involved. First, the current rate of taxation has a direct bearing upon the level of corporate saving. An increase in the rate of taxation will cause a proportionate decrease in corporate savings. This does however not imply that absolute levels of corporate savings necessarily decrease with increasing rates of taxation. Since the "twenties" this rate of taxation of corporate income in Canada has increased from approximately 10 percent to some 50 percent as a maximum applicable to top incomes. Total corporate saving has, over the same period, increased manifold.

Secondly, the level of gross corporate saving is directly influenced by fiscal policy as it relates to changes in capital consumption allowances. Corporate tax liability varies inversely with the amount chargeable as capital consumption allowances.²²

Indirect effect:

A change in taxes such as sales- and excise-tax or customs duties, etc. affects corporate saving indirectly. By influencing the level of sales, profits are affected and hence the level of saving attainable.

Over-all effect:

In general it can be said that the corporation, assuming the profit motive to be valid, will try to shift the whole gamut of new costs or claims arising from changes in fiscal policy to the consumer. The corporation must do so in order to maintain its earnings - or profits - to-capital ratio. Although the effect upon gross corporate savings is a direct one, a change in fiscal policy need, however, not always lead to a shifting of the effect of reduced capital consumption allowances to the consumer.

²² See Chapter I, sub 7, items 1-7 specifying this part of Corporate Saving as per National Accounts.

As alternatives the corporation may decide upon more advantageous investment or similar objects to offset the reduction in savings.

A similar observation applies to those new claims upon the corporation's earning-capacity arising from increases in sales- and excise-tax, import-duties, etc. Management may decide to drop a particular line of goods in favour of another one in order to maintain sales and hence earning capacity. In both cases, however, management's policy will depend upon evaluation of alternatives. No such alternative however exists in case the taxation rate of corporate income is increased.

In cases where the corporation is affected by changes in fiscal policy, one authority comments thus on the shifting of the tax-burden:

"Undoubtedly the tax falls immediately on the shareholder. Undoubtedly too however, some of it at least is passed on to consumers or workers, either readily or slowly. While it would be wrong to analyze the effect of taxes exclusively in terms of the assumption that they are unshifted, there is undoubtedly an interval following changes in tax rates where a part of the tax is unshifted"²³

This comment indicates that shifts do take place. To what extent and when cannot be determined exactly in general. The corporation will however act in such a way

²³ Wm. C. Hood, op. cit., p. 252.

as to safeguard its financial status in terms of sales, profits and savings.

It is noted that, where tax liabilities vary inversely with the amount chargeable as capital consumption allowances, tax considerations also play a role in investment decisions through their effect upon future depreciation allowances.

3. The General Price Level.

Price changes have an immediate effect on the level of corporate saving through the book value of inventory.

Insofar as the inventory contains goods produced before the price changes took effect, the re-valuation of these goods in the books of the corporation at the end of an accounting period increases or decreases the value recorded earlier. The difference in book-value is an unrealized gain or loss. As explained in Chapter I of this study this unrealized gain or loss is dealt with in the National Accounts through the item "Inventory Valuation Adjustment." A method to differentiate between a corporate and unincorporated share, which the National Accounts do not provide for, has also been suggested in Chapter I.

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Indirectly corporate savings are influenced by the general price level through effects upon the level of sales.

"Corporate saving in the national income account consists of depreciation charges plus retained earnings. In any particular year that depreciation charges are given, dividends depend primarily on an historical percentage pay-out on absolute dividends per share, leaving corporate retained earnings as the difference between the net sales and the operating costs plus dividends and taxes. So the current price level clearly affects current corporate saving, through its influence on the level of sales."²⁴

4. Cost Factors.

The decision to use external funds instead of or besides internally generated savings entails costs and hence reduces the savings of the corporation directly. Management's attitude with respect to company savings may range from one extreme to another. Company savings may, on the one hand, be regarded as interest-free loans (from the shareholders) to funds that can be profitably lent at a rate comparable to the company's own rate of return on the use of these funds. Of course, at times, the corporation will have to raise funds externally, especially if the projected expansion cannot be financed by internal funds. Two main aspects of raising funds relate to corporate saving.

²⁴ R.E. Caves and R.H. Holton, The Canadian Economy, Prospect and Retrospect, Harvard Economic Studies, Vol. CXII, Cambridge, Mass., Harvard University Press, 1959, p.16.

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First, funds cannot be raised without costs; i.e. cost of flotation.

Secondly, a number of effects may arise which counterbalance the costs of raising funds; i.e. mitigating effects.

The Cost of Raising Funds:

In a brief to the Royal Commission on Banking and Finance the Investment Dealers' Association reported on costs of raising funds in Canada. The statistical information submitted by the Association is presented below in Table III.

These financing charges reduce the income of the corporation and thus may affect corporate saving.

Mitigating Effects:

In so far as corporations are allowed to write-off costs incurred in raising funds the effect upon its income is mitigated.

Another mitigating effect occurs in the form of increased accrued tax-liabilities. In view of the high level of corporate income tax rates these accrued tax liabilities - reported as excess of tax liabilities over collections - should exhibit a tendency to increase. These increases in accrued tax liabilities may be considered as

interest-free funds. The interest so earned - be it through a lack of obligation to pay interest - would partly offset costs of raising funds and so exercise a mitigating effect.²⁵

Finally, if the funds borrowed yield returns in excess of financing charges (including interest), and that is likely to be the case in most instances since business borrows in the expectation of making a net return on its investment after allowance for financial charges, then corporate saving may increase.

5. Status Considerations.

The level of corporate saving is in part determined by considerations which take into account the company's position in the financial community.

While in Canada savings are enhanced by the shareholders' desire for increasing equity rather than maximum dividends, savings are limited by the corporation's need to distribute sufficient dividends to be able to attract funds it may wish to obtain externally in the future.

²⁵ This effect is discussed more extensively by J. Lintner in his article: "The Financing of Corporations" in The Corporation in Modern Society, Harvard University Press, Cambridge, Mass, 1961, p. 185. For Corporate Income Tax Rates see: "The 1964 Rate Structure, Corporations", under the heading "Dividend Policy" in this Chapter of this study. For the item "Excess of Tax Liabilities over Collections" see Table 50 of the National Accounts, op. cit., p. 92.

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TABLE III

UNDER WRITING COSTS OF ISSUING
SECURITIES IN CANADA

Size of Issue	Bonds and Debentures	Preferred Stock	Common Stock
(Arithmetic averages of gross mark-up as a percentage of cost).			
Under \$3 million	4.62	6.05	8.43
Over \$3 million	2.82	4.75	6.98

Source: Investment Dealers' Association of Canada, Brief Submitted to the Royal Commission on Banking and Finance, July 11, and 12, 1962.

(Mimeographed), Appendix E, p. A. 366.

Some corporations whose shares are traded on the stock-exchanges face the problems of a take-over-bid. These may arise from excessive company saving, particularly if the latter is not fully reflected in the current stock market valuation. Market values, as a rule, are influenced by dividend payments and expectations for dividend payments, and to a lesser extent by the intrinsic value as represented by the assets of the companies concerned.

The general standing of the corporation is further enhanced by charitable contributions. These contributions, though generally deductible for income tax purposes, affect the savings of the corporation directly, but only to the amount of the difference between reduced tax liability and the amount of the charitable contributions themselves.

In addition to the above there are a great number of considerations which corporate management will take into account with respect to the corporation's general status and specifically its status in the financial community. Examples are its public relations policy in general, participation in exhibitions, in short, all activities to create a favorable "image".

6. Monetary Policy.

The main aspect taken into consideration by corporate management with respect to monetary policy is

generally considered to be the relative importance of the current and future rate of interest on capital to be borrowed for investment purposes. The Royal Commission on Banking and Finance reports:

"Corporate investment in plant and equipment is often considered to be an item of expenditure which may be sensitive to changes in credit conditions since it fluctuates over a wide range and those making the decisions are expected to be more sensitive to costs and returns than consumers and governments. At any point of time, business firms have a number of projects involving the construction of plant or purchase of equipment for which there are various anticipated rates of return. Some projects which promise a high rate of return will have priority in the plans for investment, but there must be some projects which are regarded as marginal, and which will no longer be regarded as worthwhile investments if interest costs rise. In some cases, investment decisions are in fact altered, but there are several reasons why increases in interest rates of the kind we have experienced affect only a strictly limited amount of business investment".²⁶

The Royal Commission advances the following reasons for the limited effect of increases in interest rates upon business investment:²⁷

1. A high proportion of business investment is financed through retained earnings and depreciation allowances.
2. Much business capital expenditure is on a "must" basis in that the firm has either to

²⁶ Report of the Royal Commission on Banking and Finance, Queen's Printer, Ottawa, 1964, p. 430.

²⁷ Ibid., pp. 430 - 431.

improve the quality of the product and reduce production costs or lose its position in the industry. Some of this investment is described as having no measurable rate of return and therefore as being insensitive to any change in interest rates.

3. A third factor contributing to unresponsiveness is the existence of a substantial corporate income tax. Corporate executives frequently point out that the cost of an increase in interest rates is cut in half by the existence of the corporate income tax and its effects are therefore correspondingly reduced.

In general it may be observed that in aggregate form at all times corporations draw upon outside funds irrespective of the prevailing rate of interest. In view of the above findings of the Royal Commission on Banking and Finance the conclusion that the rate of interest does not play a predominant role in the determination of the level of borrowing of outside funds appears to be warranted.

In cases where corporations rely upon external funds at widely divergent rates of interest, the possibility of lower rates of interest at some future date may lead to some postponement in investment.

With respect to the availability of funds the Royal Commission remarks that -----"in periods of credit restraint, business firms with adequate access to credit in normal times cannot always obtain the funds they require at prevailing market rates. In short, limitations are imposed on the availability of credit, and the increased difficulty

of obtaining funds is not fully reflected in interest rates".²⁸

On this point the Royal Commission concluded that changes in the availability of credit have had about the same effects on investment as changes in interest rates. On occasions some projects were abandoned or postponed. But, in general, limits on the availability of credit during recent periods of credit restraint have not been sufficiently stringent to exercise more than a limited influence over investment in plant and equipment.

7. Dividend Policy.

From time to time, usually quarterly, semi-annually or annually, corporate management has to decide upon the payment of dividends, thereby reducing corporate income and hence saving over the current period by the amount of dividends decided upon.

Opinions as to which factors are taken into account by management in formulating dividend policy differ extensively. One author enumerates these considerations:

"Some of the general considerations which are borne in mind by corporation directors in deciding their dividend policy at a particular time are (1) the company's cash position;

²⁸ Ibid., p. 432.

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(2) its capital structure and the extent of share distribution; (3) plans for future development and expansion; (4) the possibility and/or desirability of securing new outside capital as opposed to financing internally; (5) the past record of earnings and prospects of future earnings; (6) general business conditions; (7) taxes; and (8) contingencies".²⁹

Some of these considerations are self-explanatory. Other considerations, however, have a relatively complex background which will require more elaborate examination.³⁰

²⁹ J. Richards Petrie, The Taxation of Corporate Income in Canada, University of Toronto Press, Toronto, 1952, p. 151.

³⁰ It should be noticed that due to the relation between dividends and income a number of the considerations enumerated also refer to factors other than dividend policy. References are as follows:
Point (2) has been discussed under the heading "Fiscal Policy" insofar as it relates to taxation, (capital consumption allowances). Point (3) has been discussed under the heading "Monetary Policy" insofar as it relates to investment.
Point (4) has been discussed under the heading "Status Considerations" insofar as it relates to the status of the corporation in the financial community and under the heading "Monetary Policy" insofar as it relates to the availability of funds and under the heading "Cost Factors" insofar as related to costs of flotation vs internal financing.
With respect to dividend policy points (1), (2), (3), (5), (6) and (8) are here regarded as self-explanatory. Points (4) and (7) will receive further attention with respect to the formulation of dividend policy.

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With respect to point (4), i.e. the possibility and/or desirability of securing new outside capital as opposed to financing internally, Petrie observes:

"In some cases an important consideration is the apparent belief that a long record of unbroken dividend payments, through good Years and poor, gives the company a relatively strong position in the capital market when new shares are offered to investors. It is argued that the stock should sell at a higher price, even though in the aggregate the rate of dividends declared might be lower than when a policy of intermittent and fluctuating dividend payments is followed"³¹

With regard to point (7), i.e. taxes, Petrie observes that a reason for the retention of profits is ----- "the desire to avoid the individual tax on them. This policy is more likely to be followed in small closely held corporations than in large public corporations where there is a wide diffusion of ownership. Its effects probably have relatively little significance for the national economy because of the total of all corporate earnings".³²

³¹ Petrie, op. cit., p. 151.

³² Ibid., pp. 152 - 153.

However, this view is not generally accepted. In view of the differential tax rate between individuals and corporations there may very well be more importance attached to this factor than argued just now. The substantial sales of shares, even at times of a high rate of interest on bonds and debentures would seem to indicate that, apart from pure speculation, a milder form of speculation is not uncommon and perhaps even dominant in Canada. In other words it may well be, that the dominant consideration for the rather low rate of return in the form of dividends on shares, is the difference in rates of taxation as referring to individuals and corporations, especially in higher income brackets, taken into account by corporate management. (For comparative purposes Table IV and related text as well as the Taxation Rate Structure for corporations given below should be consulted).

This view is confirmed by Wm.C. Hood as follows:

".....dividends paid to individuals are received largely by persons in the higher income brackets. But the marginal rate of taxation on such persons' income is higher, and typically has been higher than the marginal rate on corporation income.³³

³³ Even allowing for the 20 percent tax deduction on dividends from Canadian companies in a great many cases.

Moreover there is no capital gains tax as such in Canada, and there is at least a presumption, if not conclusive evidence, that shareholders have been content to see dividends rise at a lesser rate than earnings in the hope of winning their advantage through the sale of shares for a capital gain. It is of course necessary for share prices to rise in order for this realization of capital gain to be possible and it is often contended that share prices are more responsive to dividends than to earnings. However that may be, it seems that the relationship between the marginal rates of individual tax applying to shareholders and of the corporation tax combined with the legal definition of income for tax purposes have contributed to a more rapid rise of retained earnings than of dividends".³⁴

The formulation of dividend policy is evidently a problem in which many factors are taken into account. As to its final effect, however, one authority's findings confirm that "----- savings in a given period generally are largely a by-product of dividend action taken in terms of pretty well established practices and policies; dividends

³⁴ Hood, op. cit., p. 253.

are rather seldom a by-product of current decisions regarding the desired magnitude of savings as such".³⁵

In view of the above discussion it would seem that, despite the great number of factors which play a role in the formulation of dividend policy, there is a general tendency on the part of most corporations to maintain a rather conservative attitude, thus restricting substantial fluctuations in dividends.

8. The Formation of New Corporations.

Earlier the determinants of corporate saving have been roughly classified as relating to (a) income, (b) investment and (c) dividends. In examining fiscal policy, the general price level, cost factors, status considerations, monetary and dividend policy, emphasis has been on the relation between these factors and their relation to income, investment and dividends on the micro-economic level, i.e. in this case to the corporation as a behavioural entity.

But such factors as fiscal policy, monetary policy and the general price level, besides the formation of new

³⁵ J. Lintner, "Distribution of Incomes of Corporations among Dividends, Retained Earnings and Taxes", American Economic Review, Vol XLVI, No. 2, May 1956, p. 97.

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TABLE IV

GROSS RATE OF FEDERAL INCOME TAX,
INDIVIDUALS
1964
(Excluding Old Age Security Tax³⁶
before 18% Abatement)

Taxable Income		Tax		<u>on next</u>
\$	1,000 or less	\$	110 plus 14%	\$ 1,000
	1,000		250 " 17%	1,000
	2,000		420 " 19%	1,000
	3,000		610 " 22%	2,000
	4,000		1,050 " 26%	2,000
	6,000		1,570 " 30%	2,000
	8,000		2,170 " 35%	2,000
	10,000		2,870 " 40%	3,000
	12,000		4,070 " 45%	10,000
	15,000		8,570 " 50%	15,000
	25,000		16,070 " 55%	20,000
	40,000		27,070 " 60%	30,000
	60,000		45,070 " 65%	35,000
	90,000		67,820 " 70%	100,000
	125,000		137,820 " 75%	175,000
	225,000		269,070 " 80%	on remainder
	400,000			

A surtax of 4% is levied on foreign investment income in excess of \$2,400. or of the amount of the personal exemptions, whichever is the greater.

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Source: Department of National Revenue,
Individual Income Tax Return T1 General, 1964.

THE 1964 RATE STRUCTURE³⁷

CORPORATIONS

The basic schedule for federal taxation of corporate income is very simple:

the tax (including the 3% Old Age Security Tax) is 21% of the first \$35,000.- of taxable income, plus 50% of the remaining taxable income. The maximum tax-rate therefore approaches 50% as taxable income increases.

The following provinces, which levy corporation income tax at the rates indicated below, have entered into tax collection agreements with the federal government and the corporation income taxes payable to those provinces are to be computed and paid in conjunction with the federal corporation income tax:

Newfoundland	9%	Manitoba	10%
Prince Edward Island	9%	Saskatchewan	10%
Nova Scotia	9%	Alberta	9%
New Brunswick	9%	British Columbia	9%

The provinces Ontario and Quebec have not signed agreements for the collection of corporate income tax by the Federal Government. The rate that applies in Ontario is 11% and in Quebec 12%.

³⁷ Source: Department of National Revenue, Corporation Income Tax Information, Form T2S, 1964.

corporations and the national income, also exert an influence on the macro-economic level, i.e. upon aggregate corporate behaviour. The focus of interest in this study, with respect to aggregate corporate behaviour concentrates upon the quantitative information contained in the time series as reported in the Canadian National Accounts and other supplementary sources.

Now, two factors on the aggregate level have been indicated as being the most important: the level of national income and the formation of new corporations.

There is an essential difference between these macro-economic factors which requires separate consideration. National income is directly affected by fiscal, monetary policy and the general price level, the rate of formation of new corporations on the other hand is affected in a different manner.

As to the formation of new corporations and its consideration as a significant factor affecting the level of corporate saving formation, the following observations apply.

The magnitude of corporate saving as reported in the time series of the Canadian National Accounts and other sources is affected by the incidence of new corporations from period to period.

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As will be shown later, the number of corporations in Canada increased substantially in the post World War II period.

What is the effect of these increases upon the magnitudes reported in the National Accounts? How are the determinants of corporate saving, classified as income, investment and dividends, affected? These two questions need to be answered.

If an increase occurs in the number of corporations during the period which is covered by the reported magnitude, it stands to reason that this magnitude, be it income, dividends, saving or investment, includes a portion which can be ascribed to the new corporations.

The magnitude of time series related to corporate behaviour therefore does not only depend upon factors previously enumerated but also on the net increase in the number of corporations from one period to another. But determinants of corporate saving are derived from these time series. Hence these determinants are clearly affected by the net increase in the number of corporations.

Not only will the magnitudes reported be higher or lower, depending upon the nature of the time series, but there will be shifts from other sectors to the corporate sector. For example, if the net increase in corporations

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consists partly of conversions from the unincorporated form of business, savings reported in the personal sector, income and capital consumption allowances, etc. in the unincorporated business sector will be proportionately lower.³⁸

These side-effects are, however, not directly relevant to this study. It is merely noticed that saving reported as personal saving in one period may after conversion be reported as corporate saving in the next period. Pertaining to the factors which underly, and thus affect, the formation of new corporations, as well as the concomitant effect upon the determinants of corporate saving the following may be pertinent.

The distinction between incorporated and unincorporated business is a rather arbitrary one. Two business concerns may be of equal size, carry out the same type of activity, have the same amount of capital. In short, they may be practically identical. Yet their legal position, not their economic one, is the basis for separate treatment. The primary legal factors, which underly the choice between

³⁸ Not in an absolute sense, because growth of magnitudes reported is also influenced by growth in remaining enterprises and increase in the number of enterprises in the unincorporated sector.

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the corporate or unincorporated form of enterprise are liability and differential tax rate considerations.³⁹

Up to a particular taxable income tax-rates favour individual income and as such the unincorporated form of enterprise. Thereafter tax-rates favor incorporated business.

Another factor to be taken into account with respect to newly formed corporations, whether conversions from unincorporated business or not, is the benefit derived from tax incentives. Where these tax-incentives for new corporations apply, income is enhanced over the period these incentives are in effect. Where these incentives apply primarily to newly formed corporations the total effect of these new entries upon the level of corporate income could be quite substantial.

Conversions are in so far more influential that they are at the time of conversion going concerns. New corporations, not based on any previous enterprise of a different nature, will most likely have a lesser effect on corporate income, dividends, savings, etc., in aggregate, in the period during which they are formed, than "converted" enterprises.

³⁹ See tax schedules included under the heading "Dividend Policy".

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It is quite usual for new corporations not to pay out dividends for some time. Especially if financing of the operations is not endangered, young corporations may try to expand as much as possible by retaining all net earnings. Some reduced effect upon dividends may therefore be expected. Taxation will in the case of full retention be an important consideration.

Combined with taxation considerations is the matter of liability. Shareholders in a corporation are only liable to the extent of their share-values. In contrast, the unincorporated business owner is not only liable with his business capital but also with his personal assets. Shifts in taxation rates as between individual and corporate schedules and changes in liability aspects are considered to be the primary considerations in the incidence of new corporations. In addition, the influx of foreign capital, in the particular case of Canada, plays a major role, especially in relation to investment aspects considered as determinants of corporate saving.

9. The National Income

At least one instance, as will be recalled, has been reported, where national income was considered as playing a role in the determination of corporate profits and saving.

At the same time it has been indicated that this may not be a desirable approach.⁴⁰

The main point is: the functional relation of corporate profits to the national income is considered to be one determinant of corporate saving. There exists a degree of interdependence between the two variables, the examination of which would go beyond the scope of this thesis.⁴¹

Nevertheless, at this stage two aspects of this problem may be briefly referred to. First, changes in the level of national income are induced by a host of factors. To isolate and discuss the main factors which affect national income is a major undertaking. Such an undertaking cannot be carried out in this study, because, what is implied, is a full discussion of macro-economic relationships.

This observation does, however, not imply that national income cannot be considered as a determinant of corporate saving.

Secondly, having arrived in the examination of factors underlying the determination of corporate saving, at

⁴⁰ See J. Lintner, op. cit., p.254 and S.P. Dobrovolsky, op. cit., p.256.

⁴¹ See page 36 of this study.

the apex of aggregation, the question must be considered whether in economic theory, corporate saving is regarded as determinate.

In this chapter the question of determinacy has not been brought up; economic practice as reported in the literature has been examined. The next chapter will be devoted to the third goal enumerated, i.e. the presentation and analysis of time series related to corporate saving, its components and other variables discussed.

10. The Structure of Functional Relationships.

In order to present a comprehensive view of the various relationships discussed, a recapitulation concludes this chapter. This recapitulation presents only the most important factors deemed to play a role in relation to corporate income, investment and dividends as determinants.

The various headings under which these factors, affecting the determinants of corporate saving, income, investment and dividend, have been discussed in this chapter, have been underlined in the recapitulation.

Two aspects of this recapitulation should be given consideration.

First, though the determinants of corporate saving have been indicated to be income, investment and dividend, each of the factors affecting these determinants as

outlined here, may be regarded as a determinant itself.

Secondly, additional determinants are mentioned in economic literature, though not with as much emphasis as those enumerated here. These include, among others, such factors as wealth or net worth, tastes or the complex of psychological nonfinancial motivation underlying decisions to save rather than to consume. Further attention will be given to these factors in Chapter IV of this study.

Recapitulation of Functional Relationships.
Determinants:

Income; affected by	Investment; affected by	Dividend; affected by
<u>Fiscal Policy:</u>	<u>Monetary Policy:</u>	<u>Dividend Policy:</u>
1. Income tax	1. Current and future rate of interest	1. Cash position
2. Capital consumption Allowances	2. Availability of funds	2. <u>Fiscal Policy:</u> a. capital structure and tax-rates
3. Other taxes, e.g. sales tax	<u>Fiscal Policy:</u>	3. Expansion plans
<u>General Price Level:</u>	1. Future depreciation allowances	4. <u>Monetary Policy:</u> a. availability of funds
1. Inventory valuation adjustment	<u>Formation of new Corporations:</u>	<u>Cost Factors:</u> a. cost of flotation
2. General effects, e.g. sales	1. Time element	<u>Status Considerations:</u> a. financial standing
<u>Cost Factors:</u>	2. Foreign Investment	5. Past and future earnings
1. Cost of flotation vs internal financing	<u>(National Income).</u>	6. General business conditions
<u>Status Consideration:</u>		7. Taxes
1. Charitable contributions		8. Contingencies
<u>Dividend Policy.</u>		<u>Formation of New Corporations.</u>
<u>Formation of New Corporations.</u>		<u>(National Income).</u>
<u>(National Income).</u>		

CHAPTER III

ASSESSMENT OF STATISTICAL INFORMATION

1. Corporate Saving Behaviour.

The Canadian National Accounts provide, in the form of time series, most of the statistical information necessary to analyze corporate saving behaviour, in terms of magnitudes of various components involved. In this chapter these data and relevant material from other sources are reproduced, re-arranged and presented in such a manner as to bring out the interrelationships involved.

Corporate saving behaviour is analyzed further in Chapter IV. The analysis is carried out in terms of ratios and rates of change specified in that chapter.

No attempt is made to analyze corporate saving behaviour in terms of functional relationships or calculated regressions for several reasons.

First, apparently no definite body of doctrine seems to have evolved in economic theory relating to corporate saving behaviour in particular.⁴²

⁴² See D. Smith, *op. cit.*, pp. 297 - 304. His examination of the problem of indeterminacy of corporate saving in economic theory leads him to construct a model in which corporate saving is determinate. The model is however subject to severe qualifications, preventing its adoption in this study.

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Secondly, in keeping with this observation, opinions differ as to which independent variables are to be used in regression equations. This problem was outlined in Chapter II of this study.

Thirdly, those variables which are deemed suitable are generally not available in ready form possessing the degree of reliability desired.

Fourthly, in keeping with the previous observation, tests of regressions are of necessity crude and hence, at the present stage of progress in this area of analysis only tentative conclusions can be reached.

Traditionally economic analysis concentrates on the firm or the industry rather than on the corporation and other forms of business organization. In order to arrive at a definitive theory of corporate saving there must be at least widespread agreement on the determinants of corporate saving behaviour.

In Chapter II of this study a number of proposed determinants has been enumerated, sufficiently large and varied to illustrate that no general agreement exists among economists as to their applicability and usefulness. True, by and large, they can be generally classified as relating to either income, investment or dividends. But at the same time it should be borne in mind that within each of these

groups the determinants may be of a quite different form, lagged, current or in the form of a ratio, etc. Furthermore, in general, corporate savings is regarded as dependent upon not only one, but more than one independent variable, involving a choice as to which independent variables should be used in combination. Therefore, the conclusion that no general agreement, or even that a significant degree of disagreement among economists exists with respect to functional relationships and variables to be included or excluded, seems to be warranted.

The determinants enumerated offer a useful basis to select statistical series which can be used to examine corporate saving behaviour. Since these determinants may be classified as relating to either income, investment or dividends, statistical information on income, investment and dividends is assembled in this chapter. Further statistical information included in this chapter relates to national saving, the formation of new corporations, corporate capital consumption allowances, undistributed corporate profits and other variables related to corporate saving.

In the course of this study some areas, in which statistical information is lacking or deficient, have already been pinpointed. For example, attention has been drawn to the fact that most of the statistical information related to

corporate saving is of a residual nature. Attention has been focused upon the fact that "Inventory Valuation Adjustment" figures are not separated into corporate and unincorporated totals. Further no separate estimates of corporate investment are available. Statistical information is also lacking dealing with the structure and especially the effects in terms of money-flows of the net increase in the number of active corporations from year to year.

In some instances firm statistical information is lacking and the desired information must be approximated.

A complete recapitulation of the availability of statistical information with respect to corporate saving behaviour concludes this chapter.

2. Corporate Income.

It may be stated with reference to previous remarks that corporate income is generally considered to be the most important variable upon which corporate saving depends. This is in line with the following statement referring to aggregate saving.

"The long-run stability of the saving-income ratio for the nation, or for households, already indicates that if short-term fluctuations are disregarded current income is the most important single determinant of saving. This conclusion is confirmed by an analysis of annual data for saving and income, as well as by recent cross-section studies. It seems permissible to conclude

that the level of current income is the main factor in determining level and movements of saving, not only in the long run but also for shorter periods; and not only for broad aggregates such as the nation or all nonfarm households but also for groups of households and between individual households. It is furthermore reasonably certain that past income also has some influence on the level and movement of saving, in the sense that consumption at a given level of income is higher, and hence saving lower, if that level is reached while income is declining rather than when it is rising. The relative influence of current and past income, and the length of the past period when income has a significant influence on current saving, however, are still open questions. Differences in current income thus do not explain all, or nearly all, the differences in saving - in the case of time series differences between one period and another and in cross-section studies differences between economic units - even though as a rule they explain many or most of them".⁴³

Personal saving depends upon personal income. The determining factor in personal saving is the proportion of income consumed. Saving is seen as a residual. A person's saving can therefore be stated to be the difference between his outlays for consumption and his net income. Once the residual amount of saving for the current period is established there are no further claims upon that part of retained income.

In contrast with the retention of personal income, the corporation, after paying all operating costs and discharging its tax-obligations, faces indeed claims upon the residual savings.

⁴³ R.W. Goldsmith, op. cit., pp. 142-143.

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These claims are of a decidedly stable nature, for management is constantly under pressure to use its residual savings for (a) stable, satisfactory dividend payments to shareholders, (b) fulfillment of commitments in the form of charitable contributions, (c) the expansion of the activities and hence earning-capacity of the corporation, which in the case of the use of external funds may entail substantial current and future costs and (d) other commitments.

The question whether between corporate saving on the one hand and either national income or corporate income, on the other hand the same relation holds as between personal saving and income is still unsettled. A number of economists, amongst whom Modigliani, Lintner, Duesenberry, Hansen, Cohen, Dobrovolsky have shown concentrated interest in this area, but their efforts have as yet not resulted in a definite solution.

As Lintner remarks: "Choice between different "good" aggregate relationships must be made primarily on the basis of whether and to what degree the hypotheses they embody regarding the behaviour of individual firms and households are consistent with the available evidence directly indicating such behaviour at the micro-economic level of observation, and on the extent to which the stability in the

structure of the aggregates implicitly assumed in the theory conforms to the relevant data. Or, alternatively, how well the pattern of variation in the structure or composition of the aggregates implicitly or explicitly assumed in the theory conforms to that found in the relevant data".⁴⁴

Statistical information with respect to national income, gross national product, national saving and corporate income is readily available and presented in the Tables V to X.

3. Corporate Investment.

Data on corporate investment, both actual and intended, are not readily available in a form required for economic analysis. However, it is possible to approximate corporate investment figures.

One procedure used to arrive at a first estimate of corporate investment is as follows.⁴⁵

First, from total business fixed capital formation, as reported in the white papers on Private and Public Investment⁴⁶ is deducted government investment. Thus business

⁴⁴ J. Lintner, op. cit., pp. 236 - 237.

⁴⁵ Smith, op.cit., pp. 309 and 310.

⁴⁶ Published by the Dominion Bureau of Statistics.

TABLE V
 PERCENTAGE DISTRIBUTION OF NATIONAL INCOME
 BY DISTRIBUTIVE SHARES
 1946-1964

Year	Wages, Salaries & Supplementary Labour Income	Military Pay & Allowances	Corporation Profits Before Taxes	Accrued Net Income of Farm Operators From Farm Production	Net Income of Non-Farm Unincorporated Business	Inventory Valuation Adjustment
1946	57.4	3.6	13.3	11.1	11.2	-2.7
1947	61.8	.8	15.1	10.8	11.8	-5.5
1948	61.7	.7	14.3	11.5	10.6	-4.2
1949	62.0	.9	12.1	9.7	10.8	-.9
1950	60.8	1.0	15.0	9.3	10.2	-2.6
1951	60.9	1.2	14.8	11.7	9.2	-3.9
1952	60.1	1.4	12.7	10.5	8.4	.6
1953	62.8	1.6	11.9	8.2	8.7	-.1
1954	65.4	1.9	10.3	5.3	8.7	-.5
1955	63.8	1.9	12.4	6.1	8.6	-.9
1956	64.3	1.8	12.5	6.3	8.5	-1.0
1957	66.7	2.0	10.7	4.3	8.4	-.3
1958	66.0	2.0	10.4	4.8	8.5	-.1
1959	65.9	1.9	11.3	4.2	8.4	-.5
1960	66.5	1.9	10.5	4.3	8.1	-.3
1961	67.2	1.9	10.1	3.6	8.1	-.3
1962	66.0	1.9	10.4	4.9	7.7	-.3
1963	66.0	1.8	10.4	5.3	7.5	-.5
1964	66.6	1.7	11.1	4.2	7.4	-.3

Source: Canadian National Accounts: Various additions, under same title.

TABLE VI
GROSS NATIONAL PRODUCT, NET NATIONAL INCOME, GROSS CORPORATE SAVING
AND UNDISTRIBUTED CORPORATION PROFITS
1946-1964
(Millions of Dollars)

Year	Gross National Product (1)	Net National Income at Factor Cost (2)	Gross Corporate Saving (3)	Undistributed Corporation Profits (4)	(3) as a percentage of (1)	(4) as a percentage of (2)
1946	11850	9551	909	488	7.7	5.1
1947	13165	10361	1210	628	9.2	6.1
1948	15120	12003	1492	790	9.9	6.6
1949	16343	12905	1384	587	8.5	4.6
1950	18006	14161	1659	752	9.2	5.3
1951	21170	16588	1699	662	8.0	4.0
1952	23995	18654	1807	618	7.5	3.3
1953	25020	19294	2083	729	8.3	3.8
1954	24871	19032	2092	571	8.4	3.0
1955	27132	20737	2695	962	9.9	4.6
1956	30585	23166	3107	1131	10.1	4.9
1957	31909	24011	3096	854	9.7	3.6
1958	32894	25011	2967	876	9.0	3.5
1959	34915	26482	3289	986	9.4	3.7
1960	36287	27433	3263	837	9.0	3.1
1961	37471	28250	3204	757	8.6	2.7
1962	40561	30617	3616	903	8.9	3.0
1963	43180	32622	3811	973	8.8	3.0
1964	47003	35109	4377	1252	7.4	3.6

Source: Canadian National Accounts, Tables 1, 50 and 51

TABLE VII
 NATIONAL SAVING, GROSS CORPORATE SAVING AND UNDISTRIBUTED
 CORPORATION PROFITS (NET CORPORATE SAVING)
 1946-1964
 (Millions of Dollars)

Year	National Saving (1)	Gross Corporate Saving (2)	Undistributed Corporation Profits (3)	(2) as a percentage of (1)	(3) as a percentage of (1)
1946	2023	909	488	44.9	24.1
1947	2534	1210	628	47.8	24.8
1948	3238	1492	790	46.1	24.4
1949	3293	1384	587	42.0	17.8
1950	3636	1659	752	45.6	20.7
1951	4439	1699	662	38.3	14.9
1952	4935	1807	618	36.6	12.5
1953	4996	2083	729	41.7	14.6
1954	4235	2092	571	49.4	13.5
1955	4951	2695	962	54.4	19.4
1956	6366	3107	1131	48.8	17.8
1957	6115	3096	854	50.6	14.0
1958	5469	2967	876	54.3	16.0
1959	5834	3289	986	56.4	16.9
1960	5978	3263	837	54.6	14.0
1961	5769	3204	757	55.5	13.1
1962	6938	3616	903	52.1	13.0
1963	7740	3811	973	49.2	12.6
1964	8965	4377	1252	48.8	14.0

Source: Canadian National Accounts, Tables 17, 50 and 51

TABLE VIII

NATIONAL SAVING COMPONENTS
1946-1964
(millions of dollars)

Year	Personal Net Saving	Undistributed Corporation Profits	Corporate Capital Consumption Allowances	Unincorporated Capital Consumption Allowances	Government Capital Consumption Allowances	Other Components*
1946	892	488	421	477	100	-355
1947	494	620	582	544	97	189
1948	994	790	702	625	114	13
1949	926	587	797	742	134	107
1950	662	752	907	857	149	309
1951	1334	662	1037	993	173	240
1952	1291	618	1189	1045	188	604
1953	1312	729	1354	1111	208	282
1954	809	571	1521	1170	214	- 50
1955	850	962	1733	1281	252	-127
1956	1320	1131	1976	1366	300	273
1957	1202	854	2242	1431	336	50
1958	1635	876	2091	1457	351	-941
1959	1357	986	2303	1501	394	-713
1960	1535	837	2426	1572	425	-817
1961	1545	757	2447	1633	460	-1073
1962	2312	903	2713	1692	509	-1192
1963	2466	973	2838	1791	543	-870
1964	2181	1252	3125	1905	577	- 75

* This item includes: adjustment on grain transactions, government surplus or deficit, residual error of estimate.

Source: Canadian National Accounts, Tables 17 and 51.

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TABLE IX

CORPORATION PROFITS BEFORE TAXES AND
UNDISTRIBUTED CORPORATION PROFITS1946-1964
(millions of dollars)

Year	Corporation Profits Before Taxes (1)	Undistributed Corporation Profits (2)	(2) as a per- centage of (1)
1946	1474	488	33.1
1947	1814	628	34.6
1948	1964	790	40.2
1949	1879	587	31.2
1950	2522	752	29.8
1951	2825	662	23.4
1952	2698	618	22.9
1953	2611	729	27.9
1954	2290	571	24.9
1955	2965	962	32.4
1956	3345	1131	33.8
1957	3056	854	27.9
1958	3075	876	28.5
1959	3504	888	28.1
1960	3338	837	25.1
1961	3427	757	22.1
1962	3750	903	24.1
1963	3996	973	24.3
1964	4580	1252	27.3

Source: Canadian National Accounts, Table 50.

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TABLE X

CORPORATION PROFITS BEFORE TAXES AND
CORPORATION INCOME TAX LIABILITIES
1946-1964
(millions of dollars)

Year	Corporation Profits Before Taxes (1)	Corporation Income Tax Liabilities (2)	(2) as a per- centage of (1)
1946	1474	654	44.4
1947	1814	702	58.7
1948	1964	687	35.0
1949	1879	718	38.2
1950	2522	983	39.0
1951	2825	1416	50.1
1952	2698	1384	51.3
1953	2611	1220	46.7
1954	2290	1082	47.3
1955	2965	1272	42.9
1956	3345	1413	42.2
1957	3056	1337	43.8
1958	3075	1315	42.8
1959	3504	1581	45.1
1960	3338	1544	46.3
1961	3427	1612	47.0
1962	3750	1702	45.4
1963	3996	1821	45.6
1964	4580	1989	43.4

Source: Canadian National Accounts, Table 50.

gross fixed capital formation is obtained as per Canadian National Accounts.⁴⁷

Secondly, from business gross fixed capital formation as per National Accounts is deducted investment of sectors in which the corporate form of organization is relatively unimportant, i.e. the agricultural and fishing, the housing and institutional services sector. Thus corporate gross fixed capital formation is obtained.

Net corporate fixed capital formation is arrived at by deducting from gross corporate fixed capital formation so obtained corporate capital consumption allowances which are reported in the Canadian National Accounts. In this study corporate capital consumption allowances are shown in Table XI and corporate gross fixed capital formation in Table XII. The latter figures are obtained according to the procedure described in the above.

The corporate investment figures obtained according to this procedure do not take into account corporate investment in inventories, only fixed capital formation is approximated.

Investment in corporate inventories is not reported in the Canadian National Accounts directly, but by industry

⁴⁷ See Table 54 of the Canadian National Accounts for reconciliation statement.

and in the form of the value of physical change in inventories. In this study the value of corporate physical change in inventories is shown in Table X111.

In order to obtain corporate value of physical change in inventories two different methods may be used.

The first method used is similar to that used to calculate corporate inventory valuation adjustment in Chapter I of this study; the value of physical change in inventory is separated into a corporate and unincorporated business share on the basis of their respective capital consumption allowances.

The second method used is similar to that used to separate corporate gross fixed capital formation from total gross business fixed capital formation; industries in which the corporate form of enterprise is relatively unimportant are excluded. The industries excluded are agriculture, forestry, fishing and trapping, construction, retail trade and institutional services as well as grain in commercial channels.

For National Accounts' purposes the value of physical change in inventories and inventory valuation adjustment are calculated according to the following procedure⁴⁸:

⁴⁸ D.B.S., op. cit., p. 168.

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- (1) Estimate the book value of inventory from reported data.
- (2) Establish a deflator price index relevant to the period of acquisition of stocks, (taking into account turnover period and predominant business accounting practices).
- (3) Calculate the constant dollar book value $((1) \div (2))$.
- (4) Calculate the year to year change in constant dollar book value (from (3)).
- (5) Establish a revaluer price index (based on average prices during the current period).
- (6) Calculate the value of physical change in current dollars $((4) \times (5))$.
- (7) Enter the year to year changes in reported book values from (1).
- (8) Calculate the inventory valuation adjustment $(6) - (7))$.

The procedure outlined above indicates that the value of physical change in inventories for National Accounts' purposes is established at average prices. This should be taken into account in combining gross corporate fixed capital formation and corporate value of physical change in inventories to obtain total corporate investment.

Data on intended investment will not be reproduced here. If such data are taken into consideration to formulate an independent variable, as for example of the form "average corporate current investment less capital consumption allowances and investment intentions for the next year less current capital consumption allowances", i.e. current and expected demand for net corporate long-term funds ⁴⁹, the first procedure set out above should be brought to bear upon the composition of the variable.

For the sake of completeness it is noticed that data on investment intentions are available, in a form similar to actual investment data, from the white papers on Private and Public Investment in Canada, outlook for various years.⁵⁰

⁴⁹ See page 29 of this study.

⁵⁰ Prepared jointly by the Department of Trade and Commerce and the Dominion Bureau of Statistics.

In the area of demand for investment funds a minor role is played by a relatively unimportant source of interest free funds, the excess of corporate income tax liabilities over tax collections. The statistical information on this variable is given in Table XIV.

4. Corporate Dividends and Charitable Contributions

Undistributed corporate profits (or net corporate saving) are arrived at by deducting from corporate profits after taxes the dividends paid out by corporations. In the Canadian National Accounts a distinction is made between corporate dividends paid to non-residents and to Canadian persons.

The distinction is not carried over into the following tables, because, in order to arrive at net corporate saving, it is sufficient to deduct both categories of dividends from corporate profits after taxes at the same time.

Net corporate saving may also be defined as corporate profits after taxes plus inventory valuation adjustment less net dividends distributed.⁵¹

⁵¹ See J. Lintner, op. cit., P.232.

TABLE XI
CAPITAL CONSUMPTION ALLOWANCES
1946 - 1964
(Millions of Dollars)

Year	Total Capital Consumption Allowances (1)	Corporate Capital Consumption Allowances (2)	Unincorporated Business Capital Consumption Allowances (3)	Government Business Capital Consumption Allowances (4)	(2) as a percent- age of (1)	(3) as a percent- age of (1)	(3) as a percent- age of (1)
1946	998	421	477	100	42.2	47.8	10.0
1947	1223	582	544	97	47.6	44.5	7.9
1948	1441	702	625	114	48.7	43.4	7.9
1949	1673	797	742	134	47.6	44.4	8.0
1950	1913	907	857	149	47.4	44.8	7.8
1951	2203	1037	993	173	47.1	45.1	7.9
1952	2422	1189	1045	188	49.1	43.1	7.8
1953	2673	1354	1111	208	50.7	41.6	7.8
1954	2905	1521	1170	214	52.4	40.3	7.4
1955	3266	1733	1281	252	53.1	39.2	7.7
1956	3642	1976	1366	300	54.3	37.5	8.2
1957	4009	2242	1431	336	55.9	35.7	8.4
1958	3899	2091	1457	351	53.6	37.4	9.0
1959	4204	2303	1507	394	54.8	35.8	9.4
1960	4423	2426	1572	425	54.8	35.5	9.6
1961	4540	2447	1633	460	53.9	36.0	10.1
1962	4914	2713	1692	509	55.2	34.4	10.4
1963	5172	2838	1791	543	54.9	34.6	10.5
1964	5607	3125	1905	577	55.7	34.0	10.3

Source: Canadian National Accounts, Table 51.

TABLE XII
CORPORATE GROSS FIXED CAPITAL FORMATION
1946-1964
(Millions of Dollars)

Year	Business Gross Fixed Capital Formation (1)	Private Housing (2)	Agriculture and Fishing (3)	Institutions (4)	Corporate Gross Fixed Capital Formation (1) - (2 + 3 + 4)
1946	1388	368	185	37	798
1947	2085	494	278	47	1266
1948	2619	568	352	81	1618
1949	3032	751	443	101	1737
1950	3348	867	482	106	1893
1951	3959	890	525	110	2434
1952	4451	919	562	132	2838
1953	4998	1149	557	151	3141
1954	4779	1220	400	167	2992
1955	5210	1373	426	195	3216
1956	6774	1519	488	179	4588
1957	7335	1391	434	209	5301
1958	6975	1741	465	268	4501
1959	6894	1720	539	272	4363
1960	6692	1428	550	295	4419
1961	6635	1447	576	343	4269
1962	6960	1566	663	353	4378
1963	7591	1695	762	366	4768
1964	8968	2014	820	403	5731

NOTE: Business Gross Fixed Capital Formation as per National Accounts, i. e. less Government Fixed Capital Formation; 1964 data preliminary.

Source: Bank of Canada, Statistical Summary, Supplement 1961 and 1964.

TABLE XIII
 VALUE OF CORPORATE PHYSICAL CHANGE
 IN INVENTORIES
 1946-1964
 (millions of dollars)

Year	Total Capital Consumption Allowances	Corporate Capital Consumption Allowances	Total Physical Change in Inventories	Corporate Physical Change in Inventories	
	(1)	(2)	(3)	Method I*	Method II*
1946	998	421	333	140	88
1947	1223	582	403	192	177
1948	1441	702	113	55	18
1949	1673	797	49	23	38
1950	1913	907	550	261	130
1951	2203	1037	914	430	536
1952	2422	1189	512	251	97
1953	2673	1354	583	295	168
1954	2905	1521	1130	- 68	-108
1955	3266	1733	311	165	- 28
1956	3642	1976	1084	588	521
1957	4009	2242	231	129	202
1958	3899	2091	322	-173	-141
1959	4203	2303	357	196	148
1960	4423	2426	410	225	112
1961	4540	2447	30	16	- 69
1962	4914	2713	557	308	230
1963	5172	2838	491	269	40
1964	5607	3125	380	212	230

Source: Canadian National Accounts, Tables 26 and 51.

Note: Method I: Basis Proportion (2):(1),
 Method II: Selection of Industries.

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TABLE XIV
 EXCESS OF CORPORATION INCOME TAX LIABILITIES
 OVER TAX COLLECTIONS
 1946-1964
 (Millions of Dollars)

Year	Corporation Income Tax Liabilities	Corporation Tax Collections	Excess of Tax Liabilities over Collections
1946	654	604	50
1947	702	668	34
1948	687	651	36
1949	718	698	20
1950	983	841	142
1951	1416	1268	148
1952	1384	1372	12
1953	1220	1369	- 149
1954	1082	1176	94
1955	1272	1099	173
1956	1413	1362	51
1957	1337	1539	- 202
1958	1315	1325	- 10
1959	1581	1425	156
1960	1544	1666	- 122
1961	1612	1551	61
1962	1702	1653	49
1963	1821	1775	46
1964	1989	2091	- 102

Source: Canadian National Accounts, Table 50.

Corporate profits after taxes are included directly in the Canadian National Accounts. Inventory valuation Adjustment for the corporate sector must be approximated, as indicated previously.

The concept of dividends employed in the National Accounts is net of inter-corporate dividends (dividends received by Canadian corporations from Canadian corporations) but not of foreign dividends received.

Under Canadian Income Tax Regulations inter-corporate dividends are not included in corporate taxable profits, because these dividends are tax-exempt.

Inter-corporate dividends are, since they are not taxable, not included in corporation profits before and after taxes as reported in the National Accounts. The dividends reported in the National Accounts, in so far as they are not paid to non-residents, are dividends paid to Canadian persons, not to Canadian corporations.

Hence, no special allowance need be made for these inter-corporate dividends to arrive at net dividends.

But allowance must be made for dividends received by Canadian corporations from non-resident corporations. This can only be done by approximation on the basis of the data included in the National Accounts or by adjustment to

a calendar year basis of the data included in the Taxation Statistics of the Department of National Revenue.

In the National Accounts foreign dividends are included in the item "Interest and Dividend from Non Residents received by Corporations."⁵²

In the Department of National Revenue's publication "Taxation Statistics" foreign dividends received are included separately, but on a taxation year basis. The data on foreign dividends included in Table XX of this study are the data from "Taxation Statistics" adjusted to a calendar-year basis. These data supplement the data from the National Accounts on corporate profits before taxes, dividends paid out and charitable contributions from corporations given in Tables XV and XVI.

5. Growth of the Corporate Form of Enterprise

Specific reference to the growth of the corporate form of enterprise in relation to corporate saving has not been found in the literature consulted. Nevertheless it is suggested here that this factor merits more attention than

⁵² See Dominion Bureau of Statistics, National Accounts, Table 15, Item 42a.

TABLE XV

CORPORATION PROFITS BEFORE TAXES, DIVIDENDS AND CHARITABLE
CONTRIBUTIONS FROM CORPORATIONS
1946-1964
(millions of dollars)

Year	Corporation Profits Before Taxes (1)	Corporation Dividends Paid (2)	Charitable Contributions From Corporations (3)	(2) as a Percentage of (1)	(3) as a Percentage of (1)
1946	1474	320	12	21.7	.8
1947	1814	467	17	25.7	.9
1948	1964	465	22	23.7	1.1
1949	1879	551	23	29.3	1.2
1950	2522	762	25	30.2	1.0
1951	2825	720	27	25.5	1.0
1952	2698	669	27	24.8	1.0
1953	2611	634	28	24.3	1.1
1954	2290	611	26	26.7	1.1
1955	2965	702	29	23.7	1.0
1956	3345	767	34	22.9	1.0
1957	3056	829	36	27.1	1.2
1958	3075	846	38	27.5	1.2
1959	3504	894	43	25.5	1.2
1960	3338	917	40	27.5	1.2
1961	3427	1018	40	29.7	1.2
1962	3750	1101	44	29.4	1.2
1963	3996	1158	44	29.0	1.1
1964	4580	1295	44	28.3	1.0

Source: Canadian National Accounts, Table 50.

TABLE XVI
CORPORATION PROFITS AFTER TAXES, DIVIDENDS AND CHARITABLE
CONTRIBUTIONS FROM CORPORATIONS
1946-1964
(millions of dollars)

Year	Corporation Profits After Taxes (1)	Corporation Dividends Paid (2)	Charitable Contributions From Corporations (3)	(2) as a Percentage of (1)	(3) as a Percentage of (1)
1946	820	320	12	39.0	1.5
1947	1112	467	17	42.0	1.5
1948	1277	465	22	36.4	1.7
1949	1161	551	23	47.5	2.0
1950	1539	762	25	49.5	1.6
1951	1409	720	27	51.1	1.9
1952	1314	669	27	50.9	2.1
1953	1391	634	28	45.6	2.0
1954	1208	611	26	50.6	2.2
1955	1693	702	29	41.5	1.7
1956	1932	767	34	39.7	1.8
1957	1719	829	36	48.2	2.1
1958	1760	846	38	48.1	2.2
1959	1923	894	43	46.5	2.2
1960	1794	917	40	51.1	2.2
1961	1815	1018	40	56.1	2.2
1962	2048	1101	44	53.8	2.1
1963	2175	1158	44	53.2	2.0
1964	2591	1295	44	50.0	1.7

Source: Canadian National Accounts, Table 50.

it appears to have received in the past.

Economic analysis of a particular industry on a theoretical basis is usually conducted assuming no "new entries" during the period analysed. This assumption is made so as to simplify the analysis.

In practice, however, new entries do take place and they should be taken into account.

This thesis puts forward the suggestion that the level of corporate saving may be significantly affected by the rate of formation of new corporations.

Account should be taken of the fact that while new corporations are formed, old corporations may cease to exist.

In other words, the variable involved is the net increase in the number of active corporations or alternatively the net decrease in the number of corporations from year to year.

If the change in the number of active taxable corporations is positive, i.e. there is a net increase, then this increase may be accompanied by an increase in the level of aggregate corporate savings.

If, on the other hand, the change is negative and the number of active taxable corporations declines, then a decline in aggregate corporate savings may occur, though this

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may not necessarily be the case because of these differences between new corporations formed and old corporations ceasing to operate.

These effects of changes in the number of active corporations are not limited to corporate saving only.

The net change in the number of corporations would also bear upon the level of corporate income, investment, dividends, etc., as established from year to year.

Moreover, account should be taken of the effect of the net change in the number of corporations upon other sectors of the economy.

Especially shifts from the unincorporated business sector to the corporate sector (i.e. conversions), which may comprise part of the net change in the number of corporations, may be significant.

Further, it is the usual practice to deflate personal savings in order to obtain information on the rate of real growth. Personal saving is usually deflated by an appropriate index to obtain a constant dollar value and by population to obtain changes in real per capita values.

There does not seem to be any reason why properly deflated "per capita" corporate savings should be less significant than deflated savings in the personal sector. To

know how much the corporation saves "on the average" is quite as useful as similar information on personal saving.

For a number of years the Department of National Revenue's "Taxation Statistics" on corporations contained a separate table in which the change in the number of active corporations in Canada was presented. This table was discontinued in 1953. According to the Department of National Revenue the reason for discontinuing this table was the unavailability of reliable information on corporations which ceased to exist. Such corporations do no longer file income tax returns and as the total number of corporations in Canada increased the year to year number of corporations which ceased to exist became so large that compilation of information on these corporations could no longer be carried out in a meaningful way.

Table XVIII shows the annual net increase in the number of taxable corporations in Canada. This table indicates that the number of corporations increased from 33,305 in 1946 to 144,284 in 1963.

Both the total number of corporations from year to year and the net increase in the number of corporations may be used as independent variable in the determination of corporate saving. The determining factors of corporate saving are usually expressed in terms of money-flows.

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The magnitude of these particular flows is indicated from period to period and from sector to sector in time series.

However, in correlation analysis the dependent and independent variable(s) need not necessarily be of the same character. The only criterion is, whether the variables involved can be expressed in quantitative terms. There is, at least from a purely mathematical point of view, no objection against the use of either the number of corporations or the net increase in the number of corporations as independent variable. As independent variable these factors may be lagged, current or expressed in a similar way suitable for correlation analysis. The actual selection of these factors as independent variables depends upon careful evaluation of the significance of the relationship between dependent and independent variable.

A factor in the evaluation of the significance of this relationship between corporate saving and the change in the number of active corporations is, whether corporations should be included which report a loss.

Presumably, corporations reporting a loss would not have any undistributed profits for the reporting period. In that case such a corporation would not affect corporate saving.

A detailed discussion of this problem, which would involve an analysis of accounting techniques, tax-regulations, the formation of retained earnings, etc., would carry this study beyond its objectives.

Table XVII of this study shows the total number of taxable corporations in Canada, divided into those reporting a loss and those reporting a profit.

In Table XVIII the net increase in the number of taxable corporations is shown, both in absolute terms and in terms of percentages from year to year.

6. Corporate Saving's Components.

The data on what may be referred to as the basic concept of corporate saving are presented in Table XIX. This concept of corporate saving, i.e. gross corporate saving, composed of (a) corporate capital consumption allowances and (b) undistributed corporation profits, is the concept clearly reported in the Canadian National Accounts.

Undistributed corporation profits (or net corporate saving) are sometimes defined as "corporate profits after taxes and inventory valuation adjustment less net dividends distributed."⁵³

⁵³ See J. Lintner, op. cit., p. 232.

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TABLE XVII
YEARLY RECORD OF ALL TAXABLE CORPORATIONS
1946-1963

Year	Companies Reporting a Profit	Companies Reporting a Loss	Total Number of Companies
1946	23563	9742	33305
1947	27272	12804	40076
1948	27997	16323	44320
1949	28570	17991	46561
1950	31239	18336	49575
1951	33720	19276	52996
1952	35228	20368	55596
1953	37545	22869	60414
1954	39152	26417	65569
1955	44774	26886	71660
1956	52517	27280	79797
1957	55023	32321	87344
1958	59251	36453	95704
1959	67412	38803	106216
1960	68579	49274	117853
1961	72290	54740	127030
1962	78241	57304	135545
1963	87310	56974	144284

Source: Department of National Revenue, Taxation Statistics, Part Two, Historical Table 1
1963 data supplied by Department of National Revenue directly.

TABLE XVIII
NET INCREASE IN THE NUMBER OF TAXABLE
CORPORATIONS FROM YEAR TO YEAR
1946-1963

Year	Total Number of Taxable Corporations (1)	Net Increase from Year to Year (2)	(2) as a percentage of (1)
1946	33305		
1947	40076	6771	16.9
1948	44320	4244	9.6
1949	46561	2241	4.8
1950	49575	3014	6.1
1951	52996	3421	6.5
1952	55596	2600	4.7
1953	60414	4814	8.0
1954	65569	5155	7.9
1955	71660	6091	8.5
1956	79797	8137	10.2
1957	87344	7547	8.6
1958	95704	8360	8.7
1959	106216	10512	9.9
1960	117853	11637	9.9
1961	127030	9177	7.2
1962	135545	8515	6.3
1963	144284	8739	6.1

Source: Ibid.

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This concept of corporate saving is approximated in Table XX.

7. Recapitulation of Statistical Information.

In order to facilitate an over-all assessment of the availability of statistical information a recapitulation follows.

Directly available: (a) Corporation profits before taxes, (b) Corporate income tax liabilities, (c) Corporate income tax collections, (d) Corporation profits after taxes, (e) Undistributed corporation profits, (f) Corporate capital consumption allowances, (g) Excess of corporate tax liabilities over collections, (h) Dividends paid and (i) Charitable contributions from corporations.

To be approximated: (a) Inventory valuation adjustment, (b) Corporate fixed capital formation (current and intended), (c) Change in corporate inventories, (d) Foreign dividends received.

Not available: Information on money flows due to the change in the number of corporations.

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TABLE XIX

GROSS CORPORATE SAVING
1946-1964
(millions of dollars)

Year	Corporate Capital Consumption Allowances	Undistributed Corporation Profits (Net Corporate Saving)	Gross Corporate Saving
1946	421	486	909
1947	582	628	1210
1948	702	790	1492
1949	797	587	1384
1950	907	752	1659
1951	1037	662	1699
1952	1189	618	1807
1953	1354	729	2083
1954	1521	571	2092
1955	1733	962	2695
1956	1976	1131	3107
1957	2242	854	3096
1958	2091	876	2967
1959	2303	986	3289
1960	2426	837	3263
1961	2447	757	3204
1962	2713	903	3616
1963	2838	973	3811
1964	2125	1252	4377

Source: Canadian National Accounts, Tables 50 and 51.

TABLE XX
NET CORPORATE SAVING
1946-1964
(millions of dollars)

Year	Corporation Profits After Taxes	Dividends Paid	Foreign Dividends Received	Corporate Inventory Valuation Adjustment	Net Corporate Saving
	(1)	(2)	(3)	(4)	(1)less 2-3 plus 4
1946	820	320	32	-107	639
1947	1,112	467	32	-272	949
1948	1,277	465	35	-247	1,094
1949	1,161	551	108	- 53	771
1950	1,539	762	185	-177	1,139
1951	1,409	720	48	-303	1,040
1952	1,314	669	52	52	645
1953	1,391	634	100	- 6	863
1954	1,208	611	199	45	751
1955	1,693	702	218	-100	1,309
1956	1,932	767	224	-129	1,518
1957	1,719	829	330	- 44	1,264
1958	1,760	846	277	- 19	1,210
1959	1,923	894	273	- 67	1,369
1960	1,794	917	364	- 38	1,279
1961	1,815	1,018	289	- 48	1,134
1962	2,048	1,101	308	- 62	1,317
1963	2,175	1,158	N/A	-107	N/A
1964	2,591	1,295	N/A	- 67	N/A

Source: Canadian National Accounts, Table 50;
Taxation Statistics, Department of National Revenue
and Table II this study.

CHAPTER IV

STATISTICAL ANALYSIS OF CORPORATE SAVING

1. Methods of Analysis

The objectives of the analysis carried out in this chapter are:

- (a) to establish significant relationships between corporate saving and other variables in quantitative terms,
- (b) to establish significant relationships between the corporate sector of the economy and other sectors in quantitative terms, and,
- (c) to indicate significant relationships between variables and sectors of the economy in qualitative terms.

To carry out the analytical objectives under (a) and (b) several techniques are available. A distinction may be made between analysis in absolute terms and in relative terms.

Among the techniques available for statistical analysis in absolute terms are: cyclical analysis; calculation of rates of change; calculation of ratios of change; comparison of absolute figures.

Among the techniques available for analysis in relative terms are: the construction of econometric models; correlation analysis; the calculation of ratios of change of several variables expressed in terms of the ratio of

change of one of these variables; calculation of percentage relations.

In this thesis use is made for analysis in absolute terms, of the technique of calculation of rates and ratios of change. For analysis in relative terms use is made of the technique of calculation of ratios of change of several variables expressed in terms of the ratio of change of one of these variables and calculation of percentage relations.

Since comparison of absolute figures tends to be descriptive this type of analysis is avoided in this thesis. Cyclical analysis is not carried out extensively, but where applicable adopted.

Analysis in terms of econometric models or correlation analysis is not used for reasons set out in the previous chapter.

The appropriate rate of change in analysing time series is the average rate of change. This rate of change is the geometric mean of the year to year rates of change. It is a feature of the average rate of change in time series, that it can be computed from the first and last magnitude of the series, i.e. from the end-values.⁵⁴

⁵⁴ See Appendix I, where, in the form of a technical note, standard procedure for the calculation of the average rate of change as well as the procedure adopted for this thesis, are explained.

The average rate of change is used in conjunction with the ratio of change obtained from the end-values of the time series to assess the significance of the changes in the time series data. The ratio of change is in this thesis expressed as a proportion rather than in decimal form.

Both the simple ratio of change and the average rate of change provide significant information with respect to the data of the time series. The simple ratio of change indicates the proportion between the magnitude of the base year and the final year of the time series. The average rate of change indicates the compound percentage with which the figure of the base year increases from year to year in order to reach the magnitude reported in the final year of the time series.

Neither of these measures, however, reveals any information on the actual figures in the interval between base year and final year of the time series.

In order to compare the data of the time series on different variables an additional measure is necessary to eliminate the effects of a random or irregular distribution from the figures reported in the interval and to study the effects of the year to year changes of the whole time series.

In order to facilitate the interpretation of this cumulative ratio of change, the cumulative ratios of change

obtained are adjusted to the simple ratio of change which serves as criterion for the analysis in relative terms.⁵⁵

Thus, four measures are used:

- (a) the average rate of change, which indicates the compound rate of change between end-values of the time series;
- (b) the simple ratio of change, which relates to the end-values in the form of a proportion;
- (c) the cumulative ratio of change, which relates the total of the whole time series to the base-year of the series;
- (d) the adjusted cumulative ratio of change expressed in terms of a simple ratio of change.

In some instances the addition of the magnitudes reported in a time series does not necessarily lead to meaningful information. Such is the case if the total number of corporations active in Canada for each year from 1946 to 1964 are added.

The resulting total is not very meaningful because the cumulative total so arrived at does not correspond with the real number of corporations existing in the final year of the time series.

But, if annual data for national income, corporate

⁵⁵ See Appendix I for method of calculation and adjustment.

saving or similar variables are totalled, a meaningful total is obtained. The total national income over a number of years corresponds to the total buying power over these years. The totalled corporate savings correspond to corporate savings available over the whole period, even if the totals are no longer available in the same form at the end of the period.

The method of analysis used in this thesis is mainly based upon this characteristic of the time series analysed.

2. Corporate Saving, Net National Income and Gross National Product.

Net National Income and Corporate Income:

As Table V shows corporation profits before taxes declined from 13.3% of national income in 1946 through a high of 15.1% in 1947 to 11.1% in 1964 through a low of 10.1% in 1961.

This decline is accompanied by a steady increase in wages, salaries and supplementary labour income as a percentage of national income, viz. from 57.4% in 1946 to 66.6% in 1964.

At the same time net income of non-farm unincorporated business declined from 11.2% of national income in 1946

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to 7.4% in 1964, whilst accrued net income of farm operators from farm production dropped sharply from 11.1% in 1946 to 4.2% in 1964. On the other hand the remaining components, i.e. military pay and allowances, rent, interest and miscellaneous investment income and inventory valuation adjustment, combined, rose from roughly 13% to 16% over the same period.

A comparison of the wage-bill, the income of the corporate sector (corporation profits before taxes) and income in the unincorporated sector (income from farm production and non-farm unincorporated enterprise income) which does not take into account variation in the aforementioned remaining components indicates a sharp decline of income in the unincorporated sector, a relatively mild decline in the corporate sector and a substantial increase in the wage-bill.

Year	Wage-bill	Corporate Sector	Unincorporated Sector
1946	57.4%	13.3%	22.3%
1964	66.6%	11.1%	11.6%

Although a detailed assessment of the significance of the shifts among wage-bill, corporate and unincorporated sector would lead too far afield, a few of the more salient features are indicated.

The significant decline of income in the farm-sector (11.1% to 4.2%) as a share of national income is undoubtedly primarily due to the effects of urbanization. These effects account at the same time for part of the increase in the wage-bill percentage. Population and hence labour-force increases also account for part of the wage-bill increase.

Another part of the increase in the wage-bill share is accounted for by shifts from the non-farm unincorporated sector, insofar as self-employment in this sector converts to wage-earning employment.

The decline of income in the unincorporated sector as a share of national income from 22.3% to 11.6% cannot, however, be fully ascribed to the effects of urbanization and conversion to wage-earning employment alone. Especially not, since the decline of corporate income as a share of national income was far less pronounced than the decline of income of the unincorporated sector.

One other possible explanation is that the relatively milder decline in the corporate sector as against the unincorporated sector may in part be due to greater profitability of corporate enterprises and changes of enterprises from the unincorporated to the corporate sector.

Urbanization and conversion to wage-earning employment as well as changes from the unincorporated to the corporate form of enterprise account largely for the decline of the unincorporated sector's share of national income.

Over the period 1946-1964 the corporate share of national income declined in relative importance by 2.2%. This is remarkable in view of two developments. First, as is shown later, corporate investment increased at a much greater rate than national income, (11.5% as against 7.5%). Since increases in investment bring about increases in income through increased effective demand, one would have expected that the share of the corporate sector of national income would have increased.

Secondly, as was pointed out previously, changes from the unincorporated to the corporate form of enterprise would also account for an increase in corporate income, rather than a decrease, in relative terms.

The fact that corporate income declined in relative importance may in part be due to a decline in the profits-to-capital ratio in the corporate sector. An indication that such a decline is not unlikely to have occurred over the period analysed is given in Table XXVII. In this table average corporate profits before taxes are shown to decline from \$44,300 to \$27,700, while average corporate capital consumption allowances are shown to increase from \$12,600 to \$19,700, from 1946 to 1963.

These observations form the background against which corporate saving is analysed in this chapter.

Net National Income and Corporate Saving:

The average rates of change of net national income, corporation profits before taxes and undistributed corporate profits are respectively 7.5, 6.5 and 5.5%.

The simple ratios of increase are respectively 1:3.7, 1:3.1 and 1:2.6.

The adjusted cumulative ratios of increase are respectively $X_1:3.7$, $X_1:3.3$ and $X_1:2.7$.

The comparison between simple and adjusted cumulative ratios indicates that the average rates of change based on the end-values of the time series from 1946 to 1964 are representative indicators of the changes that took place

over this period.

The decrease in undistributed corporation profits is in line with the observation that the decrease in relative importance of corporate income may be due in part to a declining profit margin in the corporate sector over the period analysed.

The rates and ratios of change of national income, corporate income and net corporate saving are shown in Table XXI.

Gross National Product and Corporate Saving:

The relationship between gross corporate saving and gross national product on the one hand and between undistributed corporate profits and net national income on the other hand is shown in Table VI.

Gross corporate saving, as a percentage of gross national product, moved from 7.67% in 1946 through a peak of approximately 10% concentrated in the years 1955-1959 to 7.40% in 1964.

Over the same period gross national product increased to four times its original size in 1946.

Gross corporate saving consists of both capital consumption allowances and undistributed profits.

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Corporate capital consumption allowances increased to 7.4 times their original size in 1946, while undistributed corporation profits increased to 2.9 times their original size in 1946 over the period 1946-1964.

Gross corporate saving showed an increase to 4.8 times its original size from 1946 to 1964.

The ratios of increase of gross national product, gross corporate saving and corporate capital consumption allowances are respectively: 1:4.0, 1:4.8 and 1:7.4.

The average rates of increase, derived from these simple ratios of increase, are respectively: 8%, 9% and 11.75%.

The sum total of gross national product over the period 1946-1964 amounted to \$531,477.-million, i.e. an amount equal to 44.9 times its size in 1946. The comparative figures for gross corporate saving and corporate capital consumption allowances are respectively \$47,760.-million and \$32,404.-million and respective increases are 52.5 and 77.0 times original size in 1946.

The cumulative ratios of increase of gross national product, gross corporate saving and corporate capital consumption allowances are: 1:44.9, 1:52.5 and 1:77.0 respectively.

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The adjusted cumulative ratios of increase, derived from these cumulative ratios of increase, are: $X_1:4.0$, $X_1:4.7$ and $X_1:6.9$ respectively.

These adjusted cumulative ratios of increase indicate, bearing in mind that the ratio for gross national product is held constant, that the cumulated total gross corporate saving figures over the whole period 1946-1964 increased at a slightly lower ratio than the ratio calculated from the end values of the time series, viz. $X_1:4.7$ as compared with $1:4.8$.

The same observation holds true for corporate capital consumption allowances, though the difference is more pronounced, viz. $X_1:6.9$ as compared with $1:7.4$.

The difference between the simple and the adjusted cumulative ratio of increase of gross corporate saving is too small to give rise to a difference between the average rate of increase (9%) and an adjusted average rate of change expressed as a percentage.

The difference between the simple ratio and the adjusted cumulative ratio of increase of corporate capital consumption allowances is, however, sufficiently large to be expressed in terms of the percentages, as qualified in Appendix I.

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The average rate of increase of corporate capital consumption allowances is 11 3/4%; the adjusted average rate of change is 11 1/4%.

Compared with gross national product, gross corporate saving increased at a faster rate, both in terms of the average rate of change and in cumulative terms.

The same observation holds true for corporate capital consumption allowances. It is noted, however, that in cumulative terms the rate of growth is less than the average rate of change and the simple ratio of increase indicate.

The different ratios and rates of change with respect to gross national product, gross corporate saving and corporate capital consumption allowances are shown in Table XXII.

National Saving:

National saving shows the same approximate fourfold increase already noticed as characteristic of gross national income and gross corporate saving over the period 1946-1964.

Gross corporate saving increased during this period from 44.9% to 48.8% of national saving.

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Undistributed corporation profits declined from 24.1% to 14.0% of national saving over the same period, as Table VII shows.

In Table VIII the total national saving figure is broken down into:

- (a) personal net saving (including net saving of the unincorporated sector);
- (b) corporate undistributed profits or net corporate saving;
- (c) unincorporated business capital consumption allowances;
- (d) corporate capital consumption allowances;
- (3) government capital consumption allowances;
- (f) other components not relevant to this assessment (i.e. various adjustments and government surplus or deficit).

These components of national saving are analysed in quantitative terms in Table XXIII.

Personal (and unincorporated business) net saving increased at an approximate simple ratio 1:2.4, while net corporate saving (undistributed corporate profits) increased at an approximate simple ratio of 1:2.6. There are some differences as indicated in Table XXIII in the simple ratios of increase of corporate, unincorporated and government business capital consumption allowances; respectively 1:7.4, 1:4.0 and 1:5.8.

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These differences suggest that personal net saving and undistributed corporate profits lagged significantly behind the rates of increase of general economic activity as reflected in gross national product and net national income, while unincorporated business capital consumption allowances increased at about the same rate, and both government and corporate capital consumption allowances lead.

As the adjusted cumulative ratios reported in Table XXIII indicate the simple ratios of change are somewhat modified if changes over each and every year of the time series are taken into account. They do however confirm the conclusions formulated previously with respect to the significance of the changes among these components of national saving.

The preceding conclusions were based upon the relation between each of the components of national saving and national saving itself.

Further conclusions may be formulated by relating the various component variables to each other. In analyzing the pattern of interrelationship among these component variables the main focus of interest is on causal factors which play a role in the shifts in importance of these variables.

It is evident that the relatively large increase in corporate capital consumption allowances is in some way related to the relatively sharp decline in personal net saving.

What causes the decline in personal net saving relative to national saving? In order to answer this question it must first of all be remembered that personal net saving is in part comprised of unincorporated business net saving.

It is known that over the last twenty years there has been a decline in the marginal propensity to save in the personal sector.⁵⁶

We know from the preceding analysis that the wage-bill has increased as a percentage of national income (viz. from abt. 57% to 67% from 1946-1964) and that income in the unincorporated sector has decreased (viz. from 22% to 12% over the same period).

Now, bearing in mind the traditional functional relationship between saving and income we may draw the conclusion that the decline in the personal saving sector relative to national saving is mainly due to the decline in

⁵⁶ Personal income increased from \$9,719 million in 1946 to \$35,019 million in 1964; i.e. an approximate simple ratio of increase of 1: 3.6. See Table 7, Canadian National Accounts, 1964 and previous issues.

income in the unincorporated business sector. This in turn must be ascribed to factors set out before which explain the relative shift in importance of corporate capital consumption allowances vis-a-vis capital consumption allowances in the unincorporated business sector.

It should be observed here that the saving of the unincorporated business sector is reported in one figure with the saving of wage-earners as personal net saving in the Canadian National Accounts. Due to statistical difficulties the separate figures which would support the above conclusion are not available.

Not all causal factors involved in the relative shifts in importance among components of national saving can be traced at this level of aggregation. A definite shift in importance of one component vis-a-vis another component can be established both with respect to the relation of base year to final year of the time series and with respect to cumulative effects over the period in question. But, at the same time it should be realized that the causes of these shifts, over a longer period, may be extremely complex and varied.

In 1964 Canada's national savings were \$8,965 million as shown in Table VII.

Gross corporate saving in 1964 amounted to \$4,377 million, i.e. nearly 50% of total national saving. This

means that out of every dollar saved in Canada 50 cents were saved by the corporate sector in 1964.

As Table VII further indicated the share of corporate saving fluctuates fairly substantially at about this 50% level of national saving over the whole period 1946-1964.

3. Corporate Saving, Tax Liabilities and Dividends.

Table IX shows the relation between undistributed corporate profits and corporation profits before taxes.

Corporation profits before taxes are reduced by (a) tax liabilities, (the excess of tax liabilities over tax collections is here ignored), (b) dividends and charitable contributions to a remainder, i.e. (c) undistributed corporate profits.

Dividends and charitable contributions are reported in Table XV and Table XVI. These charitable contributions, in view of their relatively small size, are not taken into consideration in the analysis presented below.

Earlier it was remarked that some time series show a steady increase in values reported from year to year. This was the case with e.g. gross national product. But other series, and these include tax liabilities, dividends

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TABLE XXI

RATIOS OF INCREASE OF SELECTED COMPONENTS
OF NATIONAL INCOME
1946-1964

Type of Ratio*	Net National Income	Corporation Profits Before Taxes	Undistributed Corporation Profits
(1)	1: 3.7	1: 3.1	1: 2.6
(2)	1:42.5	1:37.4	1:31.5
(3)	X_1 : 3.7	X_1 : 3.3	X_1 : 2.7
(4)	1 _{7½%}	1 _{6½%}	1 _{5½%}

Source: Tables VI and IX.

TABLE XXII

RATIOS OF INCREASE OF SELECTED COMPONENTS
OF GROSS NATIONAL PRODUCT
1946-1964

Type of Ratio*	Gross National Product	Gross Corporate Saving	Corporate Capital Consumption Allowances
(1)	1: 4.0	1: 4.8	1: 7.4
(2)	1:44.9	1:52.5	1:77.0
(3)	X_1 : 4.0	X_1 : 4.7	X_1 : 6.9
(4)	1 _{8%}	1 _{9%}	1 _{11 3/4%}

Source: Tables VI and XI.

- * (1) Simple; (2) Cumulative; (3) Adjusted Cumulative;
(4) Average rate of change.

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TABLE XXIII
 RATIOS OF INCREASE OF SELECTED COMPONENTS OF
 NATIONAL SAVING
 1946-1964

Type of Ratio	Personal Net Saving	Undistributed Corporation Profits	Corporate Capital Consumption Allowances	Unincorporated Business Capital Consumption Allowances	Government Business Capital Consumption Allowances
Simple	1: 2.4	1: 2.6	1: 7.4	1: 4.0	1: 5.8
Average Rate of Change	5%	5½%	11 3/4%	8%	10¼%
Cumulative	1:28.2	1:31.5	1:77.0	1:48.6	1:55.2
Adjusted Cumulative	X_1 : 2.6	X_1 : 2.9	X_1 : 7.0	X_1 : 4.4	X_1 : 5.5

Source: Tables VII and VIII.

Note: Cumulative ratios of change adjusted with respect to national saving; simple ratio 1:4.4, cumulative ratio 1:48.2, adjusted cumulative ratio X_1 :4.4, divisor 11.

and undistributed corporate profits do not exhibit such a steady pattern of development over the period 1946 - 1964.

As Table XXIV shows undistributed corporate profits declined substantially, particularly if compared with the rate of change in corporate income.

Since income tax liabilities over the period 1946 - 1964 increased at approximately the same rate as income, the decline in undistributed corporate profits, relative to income, must be attributed to a relative increase in dividends paid by corporations.

Why did dividends increase relative to corporate income and why did undistributed corporate profits decline relative to corporate income?

The explanation for the simultaneous decline in undistributed corporation profits and increase in dividends relative to corporate income appears to be the relative decrease of importance of undistributed corporation profits as compared with corporate capital consumption allowances as a source of internal funds.

In view of the increasing importance of corporate capital consumption allowances as a source of internal funds it is to be expected that such considerations as bear upon the formulation of dividend policy in favor of increasing payment exert an increasingly strong influence, whilst considerations for the retention of corporate income

decrease in importance.

One other element has contributed to the variation in rates of change, as set out above, and that is the impending imposition of higher withholding taxes in late 1960 and early 1961, which affected undistributed corporation profits (see Chart I).

4. Corporate Saving and Investment

Corporate gross fixed capital formation as shown in Table XII indicates a steady advance from 1946 to 1957, with one exception in 1954, when a decline is recorded.

In the period 1958 - 1964 investment initially declined and shows an irregular pattern up till 1964. The final figure reached in 1964 is the highest for the whole period.

In contrast with these trends in corporate investment, corporate capital consumption allowances, shown in Table XI, indicate year to year increases, only interrupted once in 1958.

Over the period 1946-1964 investment in inventories (valued at average prices for the reporting periods) were mainly positive as indicated in Table XIII. The same observation applies to the excess of tax liabilities over tax collections from corporations presented in Table XIV.

TABLE XXIV
 RATIOS OF INCREASE OF SELECTED COMPONENTS OF
 CORPORATION PROFITS BEFORE TAXES
 1946-1964

Type of Ratio	Corporation Profits Before Taxes	Income Tax Liabilities	Dividends Paid	Undistributed Corporation Profits
Simple	1: 3.1	1: 3.0	1: 4.0	1: 2.6
Cumulative	1: 37.4	1: 37.3	1: 46.0	1: 31.5
Adjusted Cumulative	X_1 : 3.1	X_1 : 3.1	X_1 : 3.8	X_1 : 2.6
Average Rate of Change	6½%	6¼%	8%	5½%

Source: Tables IX, X and XV.

As will be recalled corporate investment data were approximated, since these data are not directly included in the National Accounts. A certain degree of error in the approximation is unavoidable. But, since the method used, is applied consistently to each year of the time series, the degree of error present in the series on corporate investment is also consistent.

Nevertheless, the changes in the rate of corporate fixed capital formation data, as shown in Table XXVI must be interpreted with caution.

Bearing in mind, this need for caution in interpretation, as well as the fact the statistical series are composed of fairly regularly increasing magnitudes a brief analysis in terms of simple and composite ratios may suffice to illustrate the evolving pattern of interrelationship between investment and capital consumption allowances over the period 1946-1964.

A comparison of the data contained in Tables XXV and XXVI leads to the conclusion that both fixed capital formation and capital consumption allowances show a similar pattern over this period.

The rapid rates of increase of corporate capital consumption allowances relative to total capital consumption allowances indicate a definite shift in emphasis towards the corporate sector. This shift is accompanied by a

relative decline of capital consumption allowances for the unincorporated and government sector combined.

The average rates of change of total, corporate and other capital consumption allowances are 10%, 11 3/4% and 8½% respectively.

The high rates of increase of corporate fixed capital formation as compared with total fixed capital formation for the other sectors of the economy indicate a similar shift in emphasis towards the corporate sector.

The average rates of change of total, corporate and other fixed capital formation are 11%, 11½% and 10% respectively.

In view of the relation between investment and capital consumption allowances this similarity is to be expected.

Business gross fixed capital formation as per National Accounts, shown in Table XII amounted to \$8,968 in 1964.

Corporate gross fixed capital formation amounted to \$5,731 million in 1964.

This means that, in 1964, approximately 63% of business gross fixed capital formation was carried out in the corporate sector.

As Table XII further indicates this percentage is fairly representative for the whole period 1946 - 1964.

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TABLE XXV

RATIOS OF INCREASE OF CAPITAL CONSUMPTION
ALLOWANCES
1946-1964

Type of Ratio*	Total Capital Consumption Allowances	Corporate Capital Consumption Allowances	Other Capital Consumption Allowances
(1)	1: 5.6	1: 7.4	1: 4.3
(2)	1:61.2	1:77.0	1:49.8
(3)	X_1 : 5.6	X_1 : 7.1	X_1 : 4.6
(4)	10%	11 3/4%	8½%

Source: Table XI.

TABLE XXVI

RATIOS OF INCREASE OF FIXED CAPITAL FORMATION
1946-1964

Type of Ratio*	Total Business Gross Fixed Capital Formation	Corporate Gross Fixed Capital Formation	Other Gross Fixed Capital Formation
(1)	1: 6.5	1: 7.2	1: 5.6
(2)	1:72.5	1:80.5	1:61.8
(3)	X_2 : 6.5	X_2 : 7.2	X_2 : 5.5
(4)	11%	11½%	10%

Source: Table XII.

* (1) Simple; (2) Cumulative; (3) Adjusted Cumulative;
(4) Average rate of change.

5. Corporate Saving and the Formation of New Corporations.

As Tables XVII and XVIII indicate the number of taxable corporations in Canada increased from 33,305 in 1946 to 144,284 in 1963. This implies an average rate of increase of 9% per annum and a simple ratio of increase of 1 : 4.3.

Some concomitant effects of the annual increase in the number of corporations operative in Canada have been indicated in the preceding chapters.

A glance at Table XXVII shows two other aspects which are of importance in analyzing the role of the corporation and its savings for the economy.

First, average corporate profits before taxes show a declining pattern. Secondly, average corporate capital consumption allowances show a general pattern of increase over the period 1946 - 1964. In both series some irregularities are indicated from year to year.

In conjunction with the preceding analysis this leads to the conclusion that the increase in importance of the corporate sector in the economy is primarily due to its scale of investment and capital consumption allowances rather than to its scale of income relative to other sectors of the economy.

TABLE XXVII
 AVERAGE CORPORATE PROFITS BEFORE TAXES AND CAPITAL
 CONSUMPTION ALLOWANCES
 1946-1963

Year	Corporation Profits Before Taxes	Corporate Capital Consumption Allowances	Total Number of Companies	Average Corporate Profits Before Taxes	Average Corporate Capital Consumption Allowances
	(1)	(2)	(3)	(4)	(5)
1946	1,474	421	33,305	44,300	12,600
1947	1,814	582	40,076	45,300	14,500
1948	1,964	702	44,320	44,300	15,800
1949	1,879	797	46,561	40,400	17,100
1950	2,522	907	49,575	50,900	18,300
1951	2,825	1,037	52,996	53,300	19,600
1952	2,698	1,189	55,596	48,500	21,400
1953	2,611	1,354	60,414	43,200	22,400
1954	2,290	1,521	65,569	34,900	23,200
1955	2,965	1,733	71,660	41,400	24,200
1956	3,345	1,976	79,797	41,900	24,800
1957	3,056	2,242	87,344	35,000	25,700
1958	3,075	2,091	95,704	32,100	21,800
1959	3,504	2,303	106,216	33,000	21,700
1960	3,338	2,426	117,853	28,300	20,600
1961	3,427	2,447	127,030	27,000	19,300
1962	3,750	2,713	135,545	27,700	20,000
1963	3,996	2,838	144,284	27,700	19,700

Source: Tables IX, XI and XVII.

Note: (1) and (2) in millions of dollars, (4) and (5) in dollars rounded to nearest hundred.

6. Fluctuations in Corporate Saving.

In the preceding analysis the emphasis has been on rates and ratios of increase. These measures were obtained by relating base year of the time series to the final year and by relating base year to cumulative values. This type of analysis does not take into account the changes from year to year in the time series.

Chart I shows the data on corporate capital consumption allowances, undistributed corporate profits and gross corporate profits on a seasonally adjusted basis at annual rates for the period 1950 to 1964. Data for the years 1946 to 1949 are not available in this form.

The data are plotted on a semi-logarithmic scale.

As indicated before the growth of corporate capital consumption allowances is quite substantial as compared with the rather limited growth of undistributed corporate profits. Fluctuations in undistributed corporate profits are more substantial than those in corporate capital consumption allowances.

In Chart I the recession phases of Canadian business cycles have been indicated by shaded areas.

The chart illustrates that undistributed corporation profits appear to be more sensitive to general business conditions than corporate capital consumption allowances.

This reflects the primarily legal character of the latter as well as an indication that corporate investment is less influenced by current business conditions than expected prospects. The undistributed corporate profits in conjunction with dividend payments over the period analysed, reflect the sensitivity of corporate income to current business conditions as well as incidental conditions such as apply to late 1960 and early 1961.

At that time, fairly substantial payments were made, due to the impending imposition of higher withholding taxes, viz. from 5 to 15% on dividends to foreign recipients.

Summarising the post-war record of the Canadian economy, the Economic Council of Canada suggests that:

"Looking back over the post-war period as a whole, it would appear that the Canadian economy has passed through two distinctly different phases of economic performance, and may now have entered a third phase. The first of these phases, which stretched through the earlier post-war years into the early 1950's, was a period characterized by almost consistently high employment and well sustained increases in productivity and growth in total output. At the same time this period was marked by special and recurrent price and cost pressures and strains in the balance of payments. Subsequently, during the 1950's, there was a transition to a totally different situation in which the economy, for a variety of causes and in a variety of different ways, lost momentum and suffered a significant deterioration in its competitive position. This was a period marked by relatively high unemployment, slow gains in productivity and total output, a relatively high degree of price and cost stability, and a loss of strength in the balance of payments which was a reflection of many different factors, including inappropriately high levels of the exchange rate and interest rates.

More recently, since 1961, the economy appears to have entered a third phase in which a degree of reduction in unemployment has been achieved, productivity gains have been improved, balance of payments strains have been eased, and reasonable price and cost stability has been largely maintained."⁵⁷

The Economic Council of Canada, outlining the background for the analysis of national saving, further indicates that:

"The primary determinants of national saving are described in conceptual terms as the "income, interest rates, wealth or net worth and tastes" of the body of economic units comprising the economy. The last-named factor represents the complex of psychological or non-financial motivation underlying decisions to save rather than to consume. We are lacking conclusive data and evidence as to the interrelationships among these determinants of saving, however, and an adequate theoretical framework is not available to provide a firm basis for projecting quantitative estimates of national saving under varying growth conditions."⁵⁸

Within the framework of this observation the Council continues, to state that:

"Closer examination of the data for Canada shows that in spite of considerable fluctuation from one year to the next, the rate of gross private saving tends to follow a repetitive movement, generally declining in the downward phase of each business cycle

⁵⁷ Economic Council of Canada, Economic Goals for Canada to 1970, First Annual Review, Ottawa, Queen's Printer, December 1964, p. 29.

⁵⁸ Ibid., pp. 127-128.

and tending to move upward in the recovery phase. This occurs, moreover in spite of wide changes in each of the constituent elements of gross private saving.⁵⁹ Although no consistent pattern on trend can be observed among these constituents over the post-war period, there appears to be a general tendency for variations as between rates of savings in the corporate and noncorporate sectors to offset each other and thus contribute to greater stability in the aggregate".⁶⁰

The observation of the Council with respect to the general tendency for variations as between rates of savings in the corporate and noncorporate sectors to offset each other and thus contribute to greater stability in the aggregate is illustrated in Chart II of this study.

When averaged out over the course of succeeding business cycles, the average rates of change clearly indicate the stability in the ratio of gross private saving to gross national product. These rates of change as well of those of the component variables are given in Table XXVIII of this study.

7. Recapitulation of Analytical Data.

In order to recapitulate in simple and orderly fashion the data and their relative importance as discussed

⁵⁹ Personal and business savings together with adjustments for inventory valuation, comprise the flow of gross private saving. They may also be reclassified for analytical purposes in terms of corporate and noncorporate components.

⁶⁰ Economic Council of Canada, *op. cit.*, pp. 127-128.

and analyzed in this chapter, Diagram II presents a total view of all variables involved. In each bar of the diagram the simple ratio of increase pertaining to the variable to which the bar refers is inserted so as to facilitate comparison. The height of the bars indicates the value of the simple ratio of increase.

It is immediately evident that both corporate capital consumption allowances and corporate gross fixed capital formation show the greatest increase over the period 1946 - 1964 and that undistributed corporate profits show a substantial decrease relative to gross national product, net national income and national saving as well as other variables.

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TABLE XXVIII

RATES OF GROSS PRIVATE SAVING, GROSS NONCORPORATE
SAVING AND GROSS CORPORATE SAVING OVER BUSINESS
CYCLE PERIODS

Business Cycle Period	Gross Private Saving as a Percentage of	Gross Noncorporate Saving as a Percentage of G.N.P.	Gross Corporate Saving as a Percentage of G.N.P.
1946 - 48	19.69	10.78	8.91
1949 - 53	18.96	10.65	8.31
1954 - 57	18.88	9.33	9.55
1958 - 60	18.98	9.84	9.14
1961 - 64*	19.27	10.84	8.43

* Preliminary.

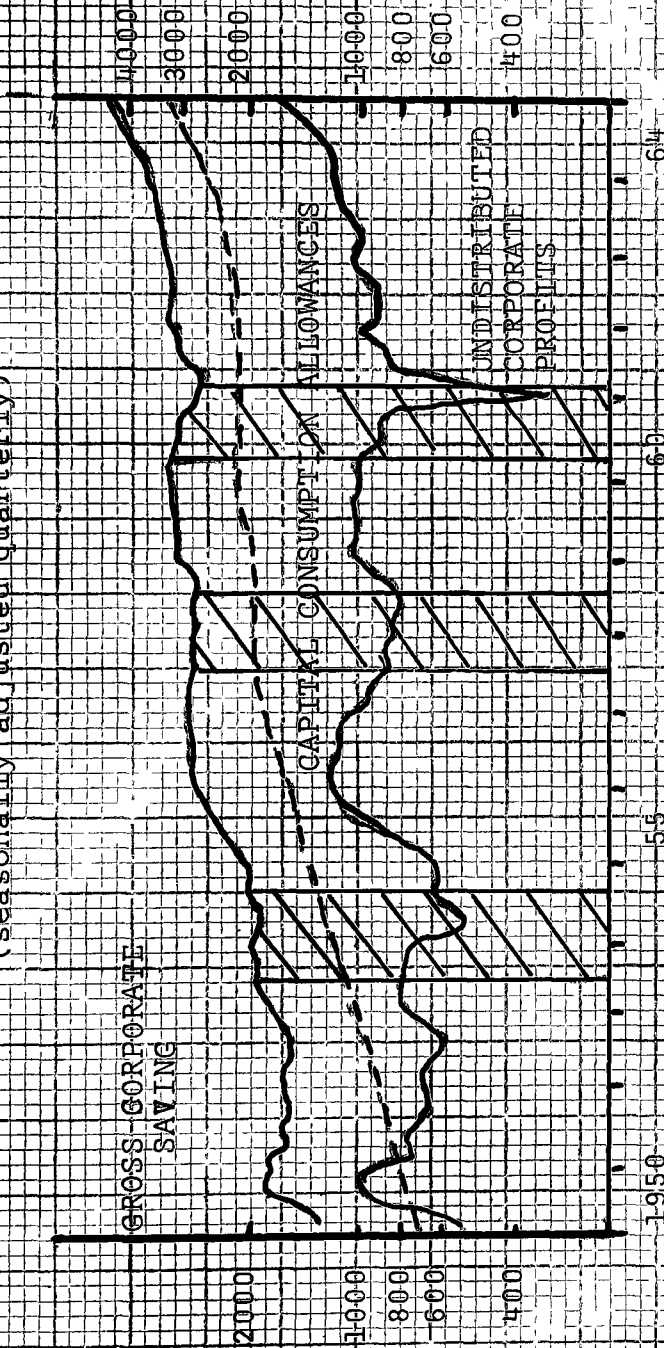
Source: Tables VI and VIII.

CHART 1

CORPORATE CAPITAL CONSUMPTION ALLOWANCES,
UNDISTRIBUTED CORPORATE PROFITS AND GROSS
CORPORATE SAVING

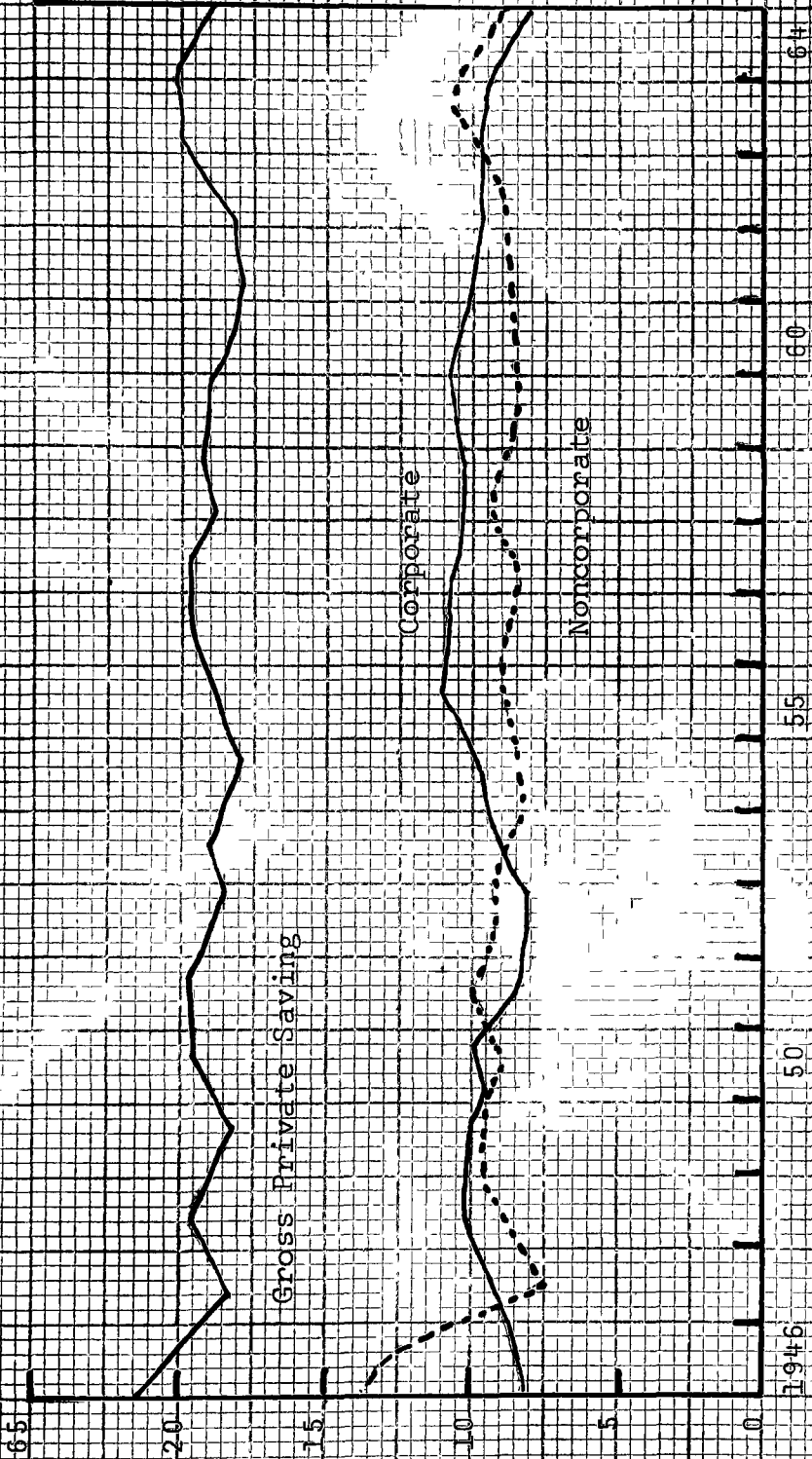
1950 - 1964

(seasonally adjusted quarterly)



SOURCE: Canadian National Accounts,
by Quarters, various issues.
Recession phases of Canadian business cycles
are shaded.

CHART III
GROSS PRIVATE SAVING
1946 1954



SOURCE: Tables VI and VIII

DIAGRAM II
 SIMPLE RATIOS OF INCREASE OF CORPORATE SAVING AND RELATED VARIABLES 1946 - 1964

EST. TOTAL NUMBER COMPANIES	4.7
NONCORP. FIXED CAP. FORM.	5.6
CORP. FIX. CAP. FORM.	7.2
BUS. FIX. CAP. FORM.	6.5
CORP. DIVIDENDS PAID	4.0
CORP. INCOME TAX LIABILITIES	3.0
CORP. PROFITS BEFORE TAXES	3.1
GOV. CAP. CONS. ALLOW.	5.8
UNINCORP. CAP. CONS. ALLOW.	4.0
TOTAL CAP. CONS. ALLOW.	5.6
PERSONAL NET SAVING	2.4
NATIONAL SAVING	4.4
PERSONAL INCOME	3.6
NET NATIONAL INCOME	3.7
GROSS NATIONAL PRODUCT	4.0
UNDISTRIBUTED CORPORATE PROFITS	2.6
CORP. CAP. CONS. ALLOW.	7.4
GROSS CORPORATE SAVING	4.8

SUMMARY AND CONCLUSIONS

In Chapter I a definition of corporate saving is given within the framework of the Canadian National Accounts. Specifically those items are taken into consideration which in the National Accounts are reported as constituents of national saving, i.e. corporate capital consumption allowances, undistributed corporate profits and inventory valuation adjustment. The terms of reference outlining relations between corporate sector and other sectors of the economy as well as the implied type of analysis, i.e. time-rates of change analysis are stated.

In Chapter II a distinction is made between three main groups of determinants of corporate saving, i.e. income, investment and dividends. The main factors affecting these determinants are presented, thus providing a frame of reference within which an assessment of available statistical information can take place.

In Chapter III the available statistical information is presented and assessed. The assessment leads to the conclusion that basic information can be obtained directly from the National Accounts. Statistical information with respect to some related variables must however be approximated whilst one or two items are as yet not available. On the whole however sufficient statistics are available to present an analysis of the various variables and inter-relationships involved.

The time series presented in Chapter III are analyzed in Chapter IV. The analysis is given in both absolute and relative terms and leads to a number of conclusions, of which the most important one for this thesis is the following:

Over the period 1946 - 1964 corporate saving increased in absolute and relative importance, because of rapid development of corporate capital consumption allowances during that period.

In many respects the corporate form of enterprise is the predominant one in Canadian business.

This is true with respect to capital consumption allowances, fixed capital formation and, within the framework of national saving, with respect to gross corporate savings.

Corporate income and income in the unincorporated sector were respectively 13.3% and 22.3% of national income in 1946.

In 1964 these shares were respectively 11.1% and 11.6%.

Although there has been a decline in the corporate share of national income during the period from 1946 to 1964 this decline was far less than the decline in the unincorporated sector's share of national income.

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In relative terms the corporate sector's share has therefore increased with respect to the unincorporated sector's share. If this development continues at the same rate as evident over the years 1946 to 1964 the corporate form of enterprise may also become the predominant form of enterprise in this respect.

Conclusions were formulated in two main areas of the thesis. First, with respect to available statistical information. Secondly, with respect to corporate saving in both absolute terms and relative to selected variables such as gross national product, net national income, national saving, corporate income and total capital consumption allowances as well as total fixed capital formation.

Certain deficiencies were noted with respect to available data, particularly the lack of estimates covering the corporate sector directly. Estimates were prepared to give a first approximation of corporate data.

Adjustments had to be made particularly in allocating corporate inventory valuation adjustment, corporate physical change in inventories, corporate fixed capital formation and foreign dividends received. No data were available with respect to the details of the composition of the net increase in the number of corporations from year to year.

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No separate data were available with respect to savings of the unincorporated sector and those of wage-earners.

This listing of statistical deficiencies points to the necessity of improving many of the statistical series available, so as to facilitate the analysis of the corporate sector and its position relative to other sectors of the economy.

Some of the salient features of corporate income and gross corporate saving were explored with respect to net national income and gross national product.

Corporate income was shown to have increased in absolute terms, but to have decreased relative to national income.

Gross corporate saving increased in absolute terms over the period 1946 - 1964. Relative to gross national product it was shown that gross corporate saving increased slightly. Corporate capital consumption allowances increased substantially relative to gross national product, while undistributed corporation profits showed a relative decline in importance.

In this thesis some of the causal factors which may in part account for the above relative shifts in importance were indicated.

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The declining importance of income of the unincorporated sector relative to the corporate sector may partly be due to the decline of agriculture's share of national income, caused primarily by the effects of urbanization. Further factors include the post-war long-term trend towards larger farms, and increased mechanization of farm work.

The decline of the unincorporated sector's share of national income may further in part be attributed to changes from the unincorporated to the corporate form of enterprise.

With respect to the relative decline of importance of the corporate share of national income two factors would be, in part, responsible for an expected increase. These factors are the changes from the unincorporated to the corporate form of enterprise and the rapid increase of corporate capital consumption allowances and the underlying increase in capital investment.

Nevertheless a decline was shown to exist and the causal factor to which this decline may be partly due was indicated to be the declining profits-to-capital ratio to which the corporate sector appears to be subject.

Evidence for this declining profits-to-capital ratio is indirectly indicated by decreasing average corporate profits before taxes and increasing average

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capital consumption allowances over the period 1946 - 1964.

Within the framework of national saving, gross corporate saving increased in absolute terms. In relative terms the rate of increase is approximately the same as that of national saving. Although there are fairly substantial fluctuations from year to year, it may be stated, as a fairly close approximation of the developments over the period 1946 - 1964, that one half of national savings originated in the corporate sector.

Within the framework of corporate profits before taxes, undistributed corporate profits increased in absolute terms but declined in relative terms. Corporate income tax liabilities followed the same pattern of increase as income; the average rates of increase are nearly identical.

Corporate dividends, however, increased relative to corporate income.

In view of the significant increase, both in absolute and relative terms, of corporate capital consumption allowances, undistributed corporate profits have become a relatively less important source of internal funds than they used to be. This may in part explain the willingness of corporations to increase dividends relative to income.

One other explanation for the increased dividends is the occurrence of substantial payments by non-resident controlled companies associated with the impending

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imposition of higher withholding taxes in late 1960 and early 1961.

Corporate capital consumption allowances and corporate fixed capital formation increased at a rapid rate over the period 1946 - 1964. In relative terms both corporate capital consumption allowances and fixed capital formation increased at a rate greater than that of any other variable analyzed.

Corporate fixed capital formation amounts to approximately 63% of business capital formation during 1964. This percentage is fairly representative for the whole period 1946 - 1964.

Average corporate capital consumption allowances increased significantly over the years 1946 to 1964. Average income, and, bearing in mind the development of tax liabilities and dividends, undistributed corporate profits declined significantly over the same period.

These observations indicate that the increased importance of corporate saving in absolute terms as well as relative terms is mainly due to the rapid increase in corporate capital consumption allowances rather than to increased retained earnings.

Seasonally adjusted corporate capital consumption allowances data show a near-linear pattern of increase over the period 1946 to 1964. The fluctuations in gross

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corporate saving on a seasonally adjusted basis may therefore be mainly ascribed to fluctuations in undistributed corporation profits. The graphical analysis of undistributed corporation profits showed these profits to be sensitive to general business conditions as reflected in business cycle data. There is a tendency to follow a repetitive movement, generally declining in the downward phase of each business cycle and tending to move upward in the recovery phase of each cycle. This pattern of change of undistributed corporation profits is in close agreement with the pattern of change of gross private saving in general.

The main factors in the near-linear pattern of growth of corporate capital consumption allowances are the following. First, capital consumption allowances are based on taxation regulations which over the period analyzed have not changed substantially. Secondly, capital consumption allowances apply to past fixed capital formation over as many as five to ten years. This considerable lagging of capital consumption allowances in conjunction with a steady growth of corporate investment over the period 1946 to 1964 promotes a steady growth pattern of capital consumption allowances over the whole period.

The main factors responsible for the irregular pattern of growth of undistributed corporation profits

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(or net corporate saving) are less easily specified. Their sensitivity to general business conditions indicates that these factors include mainly variations in the general price level and corporate income, variations in the rate of interest and the availability of money as well as variations in dividend policy.

Recurrent price and cost pressures account mainly for fluctuations in undistributed corporation profits during the first half of the period 1946 to 1964. Fluctuations in the interest rate and availability of money as well as dividend policy mainly account for variations in undistributed corporation profits during the latter half of this period.

Appendix I.

Technical note relating to the calculation of the average rate of change in time series data and adjustment of cumulative ratios.

The equation for the calculation of the geometric mean of rates of change from the end values of a time series is

$$\frac{X_n}{X_1} = (1 + r)^n \quad (1)$$

where X_1 is the value of the first item, X_n is the value of the last item, $(1 + r)$ is the geometric mean and r is the percentage rate of change.

Equation (1) may be transformed into:

$$(1 + r) \sqrt[n]{\frac{X_n}{X_1}} \quad (2)$$

which equation may be further transformed into:

$$\log (1 + r) = \frac{\log \frac{X_n}{X_1}}{n} \quad (3)$$

The antilog of the expression on the right side of the equation is the rate of change desired.

Since, what in fact is obtained by the use of these equations, is a compound rate of increase of the form $(1 + r)$ the factor r may be obtained from a compound interest table of the form $S \sqrt[n]{(1 + i)^n}$. Given the ratio of change as calculated from the end-values of a time series and the value of n , the calculated ratio of change is located under n and thus the compound rate of change or average rate of change is obtained. Since an interest table was used reporting compound rates with an interval of $1/4$ of 1%, average rates of change are reported in this study to the nearest $1/4$ of 1%, an approximation well within a tolerable range of error.

The adjusted cumulative ratio of change is obtained by reducing the cumulative ratio of the composite variable, e.g. national saving for Table XXIII, in such a manner that the right hand side of the cumulative ratio is equal to the right hand side of the simple ratio. For example, the simple ratio of increase of national saving is 1 : 4.4.

The unadjusted ratio is 1 : 48.2. The adjusted cumulative ratio is $1/11 : 48.2/11 = 1/11 : 4.4$. Next the cumulative ratios of the component variables are adjusted by dividing these ratios through by the same divisor, e.g. the personal net saving cumulative ratio is 1 : 28.2, the adjusted ratio is $1/11 : 2.6$. Since the left hand factor does not play a role in the assessment of the relative significance of the shifts among component variables over each and every year of the time series, the left hand side is simply expressed as $X_1, X_2 \dots X_n$.

It should first be observed that the ratios, though expressed differently, are essentially the same, i.e. in the case of national saving the essential ratio 1 : 48.2 is preserved and can be recreated by multiplying both sides of the adjusted cumulative factor by the divisor used. The same observation applies to the cumulative ratios of the component variables.

Secondly it should be observed that, inasmuch as there is a specific relation between ratios of the composite variable on the one hand and of the component variables on the other hand, be it simple or cumulative, this relationship must be preserved. If all ratios were expressed in their original form, e.g. for simple ratios the value of the base year related to the value of the final year, the sum of the base year values of the component variables related to the sum of the final year values of the component variables would be the ratio for the composite variable. By using the divisor obtained from adjusting the cumulative ratio of the composite variable to adjust the cumulative ratios of the component variables the specific relation existing between them prior to adjustment is evidently preserved. As a result of the adjustment the right hand sides of simple and adjusted cumulative ratio are now expressed in the same terms. The procedure used has the effect that an immediate assessment based upon the comparison between right hand sides of simple and adjusted cumulative ratios of change is now possible, subject to negligible rounding errors, thus avoiding the rather awkward interpretation of usually large unadjusted cumulative ratios.

It is self-evident that a high simple ratio of a particular variable as compared with a low cumulative ratio for the same variable, or vice versa, suggests that the pattern of change during the interval between base year and final year may be irregular.

If both simple and cumulative ratio are nearly identical a regular pattern of change may be expected. However, this is not necessarily true in all cases, hence the raw data must always be studied to establish the actual pattern of change during the interval.

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