STAFF STUDY No. 10

National Saving at Potential Output to 1970

by Frank Wildgen

prepared for the Economic Council of Canada


PROVINCE OF ONTARIO
CENTRAL LIBRARY
TREASURY DEPARTMENT

NATIONAL SAVING AT POTENTIAL OUTPUT TO 1970

by

Frank Wildgen

Staff Study No. 10

Economic Council of Canada

December 1964

This is one of a series of technical studies which have been prepared as background papers for the First Annual Review of the Economic Council of Canada. Although these studies are published under the auspices of the Economic Council, the views expressed in each case are those of the authors themselves. At the end of this Study is a list of additional studies which are being published separately and are available from the Queen's Printer, Ottawa.

Available by mail from the Queen's Printer, Ottawa,
and at the following Canadian Government bookshops:

OTTAWA
Daly Building, Corner Mackenzie and Rideau

TORONTO
Mackenzie Building, 36 Adelaide St. East

MONTREAL
Æterna-Vie Building, 1182 St. Catherine St. West

or through your bookseller

A deposit copy of this publication is also available
for reference in public libraries across Canada

Price 50 cents Catalogue No. EC22-1/10

Price subject to change without notice

ROGER DUHAMEL, F.R.S.C.
Queen's Printer and Controller of Stationery
Ottawa, Canada
1965

TABLE OF CONTENTS

Tables

Charts

NATIONAL SAVING AT POTENTIAL OUTPUT TO 1970

The central purpose of this study is to consider the level of National Saving in the Canadian economy on the assumption of expansion to potential output by 1970.[1/] Pursuing this main theme, the study briefly explores the role, determinants and composition of saving and examines some historical relationships in the saving habits of Canada, the United States and other countries. Also examined are the nature, composition and relative adequacy of Canadian saving. Taken into account in the projection of 1970 saving at potential output are the likely effects of the proposed government-administered universal pension plans on Canadian saving and capital markets.

I - SOME CONCEPTS AND DEFINITIONS

Although basic agreement exists on what saving is..that is, foregone consumption...some interesting questions arise as to what should be included or excluded in a measure of National Saving. The issue here seems to focus on the definition of what should properly be construed as investment; for saving and investment, while not the same thing, are nevertheless equal. And before coming to grips with the definition of National Saving and its components, we might first note that saving is a flow, not a stock, and refers to the supply of saving. Investment, also, is a flow and refers to the demand for saving. Much conceptual confusion can be avoided if this distinction is fixed firmly in one's mind.

Saving may be broadly defined as that portion of the current income flow which is not consumed in the period of its generation. During any period and at any point of time, a country's saving equals its investment which in turn may be consistently defined to denote only those expenditures in the period which will yield future consumption benefits. In this broad sense, investment would include not only expenditures on structures, machinery, equipment and inventories, but also current expenditures on such services as health, research and education, all of which entail sacrifice of current consumption and yield benefits to be consumed in future periods. While gross investment in any period would embrace all such expenditures during the period, net investment would represent only the amount in excess of the investment expenditure which is required to replace the capital consumed in that period. On the other hand, gross saving

---

1/ See B. J. Drabble, Potential Output, 1946 to 1970, Staff Study No. 2, Economic Council of Canada, Ottawa: Queen's Printer, 1964.

during the same period would consist of all capital consumption allowances (or depreciation charged) plus all net saving. Net saving for the economy (or for any economic unit) represents the net changes between its assets and liabilities and is thus equal to the change in its net worth.

Although gross saving is always equal to gross investment and net saving equal to net investment, it is not always statistically feasible to measure the net components of saving and investment. This statistical barrier arises when the value of the capital consumed during a period is unknown. For example, governments do not generally keep account of the value of their capital assets, such as sewers, roads, schools, etc. As there is no statistical record of the value of such capital, the value of current government capital consumption cannot be calculated. Consequently, although Gross Government Saving can be equated with gross government real investment, less the government deficit or plus the government surplus, the amount of net government saving for any period cannot be determined.

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

To the extent that capital consumption allowances for any period represent only the recapture of previous saving to permit replacement of the capital stock consumed in the period, they are not really new additions to saving but are primarily an accounting charge in the calculation of profit. Net saving, on the other hand, is new saving which is available for net additions to the capital stock. It might nevertheless

be noted that capital consumption allowances, if reinvested in fixed assets incorporating superior technology, can accelerate the rate of economic growth.

If we define saving as that portion of the current income flow which is not consumed but is instead invested in order to yield future consumption benefits, we perceive that National Saving, as recorded in the official National Accounts, tends to understate the amount of Canadian saving. One reason for such understatement results from the fact that no saving is associated with the diversion of current income to current expenditures that will yield future consumption benefits. For example, current expenditures to improve human capital through education and health services and to improve technology through research are not recorded as investment expenditures. Consequently no saving is identified with these expenditures. Another cause of understatement arises from the fact that personal expenditure on consumer durables, (exclusive of residential construction), is classified in the accounts as consumption expenditure. Hence, no saving is seen to arise from the net equity increase in, and the depreciation of, the personal stock of consumer durables. Finally, capital expenditures by all levels of government are treated as consumption rather than investment expenditures. Consequently, neither society's net equity increase in the capital assets owned by governments nor the capital consumption allowances resulting from their depreciation are recognized as elements of the nation's saving.

The first defect of failing to recognize the foregone consumption associated with current expenditures on the development of human capital and technology involves rather complex issues of defining investment or capital formation in terms of services. But the other two defects can be easily remedied and incorporated into prevailing concepts of saving and investment. They are excluded from the saving account of the National Accounts, however, essentially because the product resulting from such expenditures cannot be directly or accurately measured. In this study, too, consumer durables expenditure, and its saving offset, continue to be excluded from the statistics of National Saving but, in general, the contribution to National Saving which is identifiable with the capital expenditures of governments is taken into account. When the capital expenditures of governments, exclusive of defence expenditures on machinery and equipment, are added to the government surplus or deficit to yield what is referred to in this study as Gross Government Saving, the resultant figures on National Saving are

labelled Gross National Saving.[1] In making comparisons with the United States, however, we revert to the widely recognized concepts of National Saving that are incorporated in the official National Accounts of both Canada and the United States.

---

[1] A detailed explanation of how and why the saving account of the National Accounts was revised for this study's discussion of the components of Canadian Saving is provided in the appended "Statistical Note".

II - THE ROLE AND DETERMINANTS OF SAVING

The role of saving in the Canadian economy is interwoven with the complex process of economic growth. A country's rate of economic growth is dependent on a great variety of factors, not the least of which is its rate of investment, especially when investment is defined as above to include current expenditures on research, health, and education. Studies conducted in the United States have indicated that the latter kind of expenditures may be even more important in achieving growth than expenditures on additions to the volume of the physical capital stock. Indeed, Edward F. Denison has calculated that from 1929 to 1957 less than one-tenth of United States growth in income per person employed could be attributed to increased physical capital input, while over three quarters of the growth arose from increased education and the advance of knowledge.[1/] To the extent that a country's rate of economic growth is dependent on its rate of investment in the broad sense, it is evident that its rate of saving, also in the broad sense, may set a limit to its rate of growth. At this point, however, the role of saving in the achievement of long-term growth is usefully distinguished from its role in the economy's stabilization over the short run.

Empirical evidence shows that while saving in the private sector of the economy tends to be a fairly stable function of Gross National Product (GNP), the level of private investment tends to vary abruptly and substantially from one period to another.[2/] When the level of private investment falls, the level of other spending must rise in order to maintain the level of aggregate demand. Should other spending fail to rise sufficiently to offset fully the reduction in private investment expenditure, a country's saving and investment are brought into balance by way of reduced income which is normally evidenced by rising unemployment and idle industrial capacity. In an economy experiencing unused industrial capacity and heavy unemployment, fuller utilization of its resources can be achieved with expansion of aggregate demand through the functioning of appropriate fiscal, monetary and exchange rate policies. Such policies would normally be expected in these circumstances to effect the equality of national saving and investment at a relatively high level of national income and employment by

---

1/ Edward F. Denison, The Sources of Economic Growth in the United States, Committee for Economic Development, New York, 1962.

2/ See Derek A. White, Business Investment to 1970, Staff Study No. 5 Economic Council of Canada, Ottawa: Queen's Printer, 1964.

working to sustain the level of total spending. In this connection, the most direct and dramatic evidence is concerned with the automatic stabilizing effects of government transactions. As income falls and unemployment rises, government expenditure on goods and services tends to remain unaffected while government transfers in terms of unemployment insurance benefits and social assistance payments tend to increase. Simultaneously government revenues from income and sales taxes as well as from import duties tend to decline much more rapidly than national income does. One result is that a rather minor change in the level of privately generated income can convert a substantial government surplus into a substantial deficit. Thus, while total spending tends to be maintained, total saving declines sharply.[1/] Cogent in this connection is the following quotation from a comprehensive international study conducted by the United Nations: "Experience has demonstrated that the proportion of gross product devoted to investment is strategic in the promotion of economic growth. Were the resources of industrial countries not fully employed, their rates of growth could be improved simply by fuller utilization of existing capacity."[2/] This clearly suggests that a higher level of total spending accommodated by direct reduction of a country's saving propensity when the economy is slack need not slow its economic growth. Indeed, such reduction in an economy characterized by high unemployment tends to increase aggregate demand and so improve the economy's short-run growth rate.

While fuller utilization of resources can be stimulated by reduction of government saving (or by increasing government dissaving) when aggregate demand is deficient, short-term as well as long-term growth at either high or low levels of employment can be promoted if employed resources can be utilized more efficiently by shifting them into more profitable channels. This kind of desirable shifting might be facilitated through, for example, the introduction of measures to erode restrictions on the mobility of labour and capital. Measures taken to aid the movement of labour from less productive areas and industries into more profitable kinds of employment would clearly work in this direction. Similarly, removal of imperfections in financial markets, such as the Bank Act's 6 per cent interest ceiling and mortgage prohibition, would improve the access of profitable small businesses and others to adequate funds on suitable terms and conditions. Such a re-allocation of resources designed to improve the

---

1/ An apt illustration of how federal government saving is affected by changes in national income is provided by D. J. Daly, Federal Tax Revenues at Potential Output, 1960 and 1970, Staff Study No. 9, Economic Council of Canada, Ottawa: Queen's Printer, 1964.

2/ World Economic Survey 1960, United Nations, N.Y., 1961, p. 54.

combination of productive factors would tend indirectly to increase the absolute levels of both total saving and investment and would clearly alter their composition. However, a changed ratio of total saving or investment to total consumption expenditure is not a necessary concomitant of this kind of resource re-allocation.

But given a high and stable level of demand with nicely balanced saving and investment tendencies as well as an efficient combination of the factors of production, a substantially increased rate of long-term domestic growth in terms of per capita income or, more precisely, per capita consumption can only be achieved by a higher level of per capita investment (again defined to include current expenditures on health, education and research) financed by a larger sacrifice of current consumption ... that is, by an increased rate of saving at home ... and/or by increasing imports of capital from other countries. Hence, in assessing what long-term rate of growth should be set as a goal at high levels of efficient resource utilization, one is confronted with problems of assessing what level of foregone consumption is socially desirable and equitable or, put another way, of assessing the present value of future consumption; and of determining to what extent a country can and is willing to draw on the savings of non-residents. Finally, it can scarcely be overemphasized that the definition of an appropriate rate of saving in either the short or long run must take into account its compatibility with the simultaneous attainment of a variety of economic goals, such as a high level of employment, reasonable stability of prices, an equitable distribution of income and a viable balance of international payments.[1/]

Turning from the role of saving to the determinants of its level and composition, we find another field of study marked by a great scarcity of empirical work. Traditionally, economic theory has suggested that the supply of saving is determined by four factors:

(a) income
(b) interest rates
(c) wealth or net worth
(d) tastes.

The results of more recent work concerning the economic influence of interest rates suggest, however, that rates of change in the money supply, the noninterest terms and conditions of credit, society's expectations of the growth and stability of the

---

1/ Some might suggest, however, that an automatic by-product of the achievement of these objectives would be a rate of saving and growth that was consistent with society's preference. Unfortunately, market imperfections in the real world tend to rob the suggestion of much of its merit.

economy as well as, perhaps, the extent and liquidity of financial claims other than money may be at least as important as interest rates in determining the level and composition of saving. In this context, a broader term such as "financial conditions" or "credit conditions" is sometimes used in place of the more restrictive term "interest rates".

The diversity of saving rates encountered in various countries around the world is impressive. If these differences in National Saving rates cannot be explained in terms of income levels, financial conditions or wealth, the difference would appear to result from different national tastes. Tastes in this sense are largely concerned with institutional and other cultural patterns which in turn appear to be greatly influenced by psychological, sociological and geographic factors. Much of the difference, for example, between the very high rates of saving of the Japanese, on the one hand, and the rather low saving rates of Americans, on the other, can only be explained in terms of differing national tastes.

The level of wealth or net worth, at least among persons, appears to be inversely correlated with the rate of saving, particularly when saving is defined in such a way as to include saving resulting from investment in consumer durables: the higher the wealth, the lower the rate of saving. This inverse correlation may be a consequence of the lessened needs to save at high levels of wealth. Such underlying needs are perceived to derive from the desire to schedule one's consumption over a whole life cycle, to provide some defence against the unforeseen and to make adequate provision for one's heirs. When such needs have been taken care of, the incentive and hence the propensity to save out of a given level of personal income may be much reduced. Thus we find some indications that people in their middle years tend to save a higher proportion of their incomes than society's elders at the same income level.[1/] However, because it is both sparse and difficult to interpret, existing evidence of an inverse relationship between saving and wealth is still somewhat unsatisfactory.

Given the tastes and levels of wealth of a particular country, however, policy measures designed to influence the rate of national capital acccumulation are generally aimed at affecting the remaining two determinants of saving: income and financial conditions. But empirical evidence indicates that it is almost impossible to

---

1/ See, for example, James N. Morgan in Contributions of Survey Methods to Economics, Ed: L. R. Klein, Columbia University Press, N.Y. 1954, pp. 89-188.

overemphasize the predominant importance of the level of income in determining the level of saving. Interest rates, while altering the composition of saving, may have a perverse effect on the level of saving through their depressive influence on aggregate demand. After examining the relationship between long-term government interest rates and the saving-to-income ratios of more than a dozen countries, including Canada, Irwin Friend found that correlations between saving and interest rates were negligible.[1] The following paragraphs sum up his conclusions on the overriding influence of income on the supply of saving:

"In view of the basic importance of income in the determination of the level of saving, measures taken to influence private saving by operating on tastes, assets or interest rates without regard to income effects may be self-defeating. Thus in a period marked by a considerable amount of unemployed resources, measures taken to encourage saving by government or private exhortation or by monetary policies designed to raise interest rates might be expected, in the absence of offsetting measures, to lower income and hence aggregate saving by lowering spending not only on consumption but on investment. The level of interest rates, it may be noted, seems likely to have a greater impact on planned investment than on planned saving. However, while interest rates (and other terms of credit) may not affect saving propensities very greatly, they do have a marked impact on the composition of saving, with savers not too surprisingly preferring assets with higher yields and lower costs or easier credit terms.

"Assuming a period marked by full employment and inflationary pressures, a rise in the propensity to save induced by measures which do not correspondingly depress the propensity to invest might be expected to be associated with more aggregate investment and saving rather than with lower real income. Such measures might include new savings media (sometimes with a considerable element of forced savings such as pension funds) or the more general availability of existing savings media (e.g., mutual funds) or various forms of exhortation to save (or decreased advertising designed to encourage spending), but without more aggressive measures by the government it is difficult to have a major short-run effect on saving propensities. It might be noted that even in the type of full employment situation predicated, monetary (and debt management) policies which stimulated saving moderately and discouraged investment drastically might bring about lower rather than higher saving. In any case, increased savings propensities however achieved and tighter monetary policies regardless of their direct influence on saving will of course help to contain inflationary pressures."[2]

---

[1] Irwin Friend, "Determinants of the Volume and Composition of Saving with Special Reference to the Influence of Monetary Policy" in Impacts of Monetary Policy, Commission on Money and Credit, Prentice-Hall, 1963, p. 681.

[2] Ibid., pp. 686-687.

III - AN INTERNATIONAL COMPARISON

Much discussion in recent years has focused on the failure of Canadian saving to match domestic investment. While investment is always equal to saving in a closed economy, a country with an open economy can invest amounts in excess of that country's savings by importing savings from abroad. As imports of savings in the form of foreign capital serve to finance the Canadian deficit on current account with non-residents, it has been suggested that Canadians are "living beyond their means", frittering away their incomes on consumption in preference to investment expenditure. If this were not the case, so goes part of the argument, the level of investment in Canada would cease to be so dependent on the saving of foreigners.

While no attempt will be made here to assess all the issues involved in the above contention, it seems probable that some light may be cast on them by placing Canadian rates of saving and capital formation in an international setting. First, it might be noted that Canada is one of the relatively few industrialized countries that has, since the Second World War, consistently invested more than 20 per cent of its Gross National Product (GNP) in domestic capital formation. Among leading industrial countries that devote a lower percentage to domestic capital formation are Belgium (17.7 per cent in the period 1953-62), United States (17.3 per cent) and the United Kingdom (16.2 per cent).[1/] Indeed, it is sometimes suggested that no country could support Canada's high rate of domestic capital formation during the 1953-62 period with its own sources of saving, that is, without relying to some extent on imports of foreign saving. By confining attention to industrially advanced countries whose rates of capital formation exceeded 20 per cent of GNP during that period, the following table may help in testing the validity of this view.

1/ Source: Yearbook of National Accounts Statistics, United Nations, New York, various issues. Nondefence fixed capital expenditures by governments are included in these figures although the United States figure includes government construction expenditure on buildings only.

Table 1

Capital Formation and Saving Rates

as Percentage of Current Gross National Product 1953-62

and

Economic Growth Rates in Terms of Real Gross Domestic Product 1953-61,

Nine Countries with High Investment Rates

Country	1953 through 1962					1953 through 1961	
	Gross Domestic Capital Formation		International Payments on Current Account(1)	Gross National Saving		Average Annual Growth Rates in Real Gross Domestic Product	
	Per Cent	Rank	Per Cent	Per Cent	Rank	Total Per Cent	Per Capita Per Cent
Japan	33.7	1	-0.3	33.4	1	9.9(2)	8.8(2)
Norway	30.3	2	-2.8	27.5	2	3.6	2.7
Netherlands	25.3	3	+1.9	27.2	3	4.8	3.4
Germany (FGR)	25.1	4	+1.8	26.9	4	7.0	5.7
Canada	24.3	5	-3.0	21.3	9	3.6	1.0
New Zealand	23.7	6	-1.9	21.8	7	4.1(3)	1.9(3)
Italy	22.3	7	+0.9	23.2	5	6.0	5.4
Sweden	22.2	8	-0.3	21.9	6	4.0	3.4
South Africa	22.0	9	+0.5	21.5	8	n.a.	n.a.

(1) The balances shown here include current international transfer payments.

(2) Average annual growth rate for Japan applies to real GNP for the eight years 1954 through 1961 only.

(3) Average annual growth rate for New Zealand applies to real Gross Domestic Product for the six years 1955 through 1960 only.

Source: Yearbook of National Accounts Statistics, United Nations, New York, various issues.

Because of the difficulties involved in assembling comparable statistics for different countries, no claim is made for a high degree of statistical accuracy in Table 1. Moreover, only those industrialized countries are shown for which the required statistics are available. Despite these weaknesses, it seems unlikely that more inclusive and precise figures would materially alter the broad outlines revealed by the Table.

Of central interest is the Table's evidence suggesting that industrially advanced countries tend on net balance neither to export a very large part of their savings to other countries nor to rely very much on the savings provided by non-residents. Norway and Canada, the Table's heaviest net importers of capital during the ten years 1953 through 1962, relied on net imports of foreign savings for little more than 9 per cent and 12 per cent, respectively, of their gross domestic capital formation and these capital inflows amounted to only 2.8 per cent and 3.0 per cent, respectively, of their total products.[1/] A large part of the investment programmes of both these northern countries has been oriented towards the development of natural resources requiring relatively massive inputs of fixed capital. While a country's rate of saving and rate of investment are mutually interrelated (to the extent that its saving and investment are undertaken by the same economic units and to the extent that Capital Consumption Allowances are a function of the capital durability and intensity of its industry), there seems to be no a priori reason why countries with high capital-to-output ratios should be expected to finance all their capital needs with their own savings.[2/] In a world characterized by some freedom of international capital movement, one would expect that countries generating savings in excess of their domestic capital requirements would tend to export savings to those countries with heavier capital needs, provided that the investment of the excess savings abroad was expected to yield a higher return than at home. These observations may go some way in suggesting forces underlying the migration of capital into Canada, Norway and other countries having high capital-to-output ratios. But high saving and investment rates, as evidenced in particular by Japan, Germany (FGR) and Italy, would seem to be in part both cause and effect of rapid rates of economic growth. Thus, a country's growth rate as well as its relative capital intensity and durability seem to be highly relevant in determining the rate of its Gross National Saving. However, in assessing the significance of differences in levels of National Saving, the relative weights assignable to these factors and to each of the other determinants of saving previously mentioned, continue to be a matter of undocumented personal judgment.

1/ A country's international payments balance on current account with non-residents is here construed to be matched by a corresponding net capital flow. Thus, a current account deficit (-) signifies a net inflow of capital, a current account surplus (+) a net outflow of capital.

2/ For a fuller and more precise discussion of the determinants of investment with special reference to Canada and Norway, see Derek A. White, op. cit.

Although Table 1 suggests that gross investment rates of even 25 per cent or more of GNP can be financed without recourse to foreign capital at some times and in some places, this may not hold true for Canada at its present stage of development. One possible reason for this is that much direct investment in Canada is initiated and undertaken by non-residents without specific demand being made by Canadian residents for such foreign savings. Important to note, moreover, is that the net capital inflow which finances the deficit on current account with non-residents fails to reveal the total extent to which domestic investment in Canada is dependent upon continuing imports of capital. For Canadian residents also invest some of their savings abroad and, to the extent that they do, imports of capital in excess of the current account deficit are required to finance the level of domestic investment. Hence, even if Canadian National Saving did rise to equal the level of domestic investment, it would not necessarily follow that domestic investment would therefore become less dependent on the savings of non-residents, (although a tendency in this direction could reasonably be expected). For equality in total capital flows between Canada and the rest of the world could be statistically effected if all of the additional saving of Canadian residents were invested outside the country. However, such additional investment abroad by Canadian residents would work over time in the direction of providing more receipts of foreign investment income and would thus tend to enlarge Canada's capacity to meet its foreign obligations without borrowing abroad for this purpose. But increased exports on current account would have this effect immediately, and increased exports in future might eventually be generated as a result of a higher current level of domestic investment financed by capital imports. These cursory observations may serve to illustrate but a few of the many complexities involved in appraising, at any given time, what is an appropriate level of National Saving and to what extent it is necessary and desirable for the level of domestic investment to be influenced by the outcome of competition in international capital markets.

Recently, however, some observers have suggested that if total expenditures by Canadian governments at all levels -- federal, provincial and municipal -- had been kept in line with current government revenues over the past few years, less capital from abroad would have been imported.[1/] This suggestion is debatable. First, although Canadian governments as a group have recorded a series of deficits since 1957, such

---

1/ See, for example, the brief presented by C. L. Barber to the Royal Commission on Taxation.

deficits were more than matched by the nondefence fixed capital formation undertaken by governments. Thus, Canadian governments continued throughout the period to be responsible for a part of the country's gross saving. Moreover, much government current expenditure, on health and education, for example, adds to society's productivity. Clearly, however, if Canadian governments had financed all their expenditures, both capital and current, with current revenues, they would have made a still greater direct contribution to the nation's saving. But one of the reasons that governments in Canada did not balance their budgets was obviously related to the existence of slack in the economy as evidenced by high unemployment and flagging income growth, particularly in the years 1958 through 1961.[1/] Stalled growth in output during this period was responsible for much of the disappointing Canadian growth over the whole 1953-61 period as shown in Table 1. Despite the quite respectable proportion of GNP devoted to capital formation in Canada, Canadian growth in total domestic product during the whole period was least of all countries shown in the Table, and growth in terms of output per capita was exceptionally meagre. If, by reducing their deficits in the years after 1957, governments had further depressed aggregate demand and income, smaller, rather than greater, National Saving might have materialized in these circumstances. In any case, it is a moot point whether the capital inflow, expressed as a percentage of achieved GNP, would in that event have been more or less than it was.

Although definitive answers are unobtainable, it is nevertheless important to enquire and to attempt some partial explanation of why, in the period 1953-62, Canada absorbed more foreign capital in relation to its domestic capital formation and GNP than any other country shown in Table 1. Canada's relative position in this regard, while not fully explained, seems to be associated with three underlying, interrelated factors. First, Canada has a relatively high capital-to-output ratio. The composition of Canada's output, heavily dependent as it is on the production of resource-based industries and associated with a small consumer market spread over a vast geography, has required a high level of fixed investment in relation to Canada's total product. Secondly, Canada has normally allowed capital to move freely over its borders and has actively encouraged the entry of foreign capital in order to accelerate its economic growth. Much of this foreign capital has been attracted into those resource-based industries wherein Canada has important natural advantages and for which other countries provided expanding export markets. In addition, the Canadian customs tariff, through its protection of domestic production, has also

---

[1/] See D. J. Daly, op. cit.

furnished incentive for foreign as well as Canadian investment in many industries producing mainly for the domestic and Commonwealth markets. Thirdly, and perhaps most crucially, the location of the United States at the Canadian doorstep seems to have materially affected the amount of foreign capital flowing into Canada. The United States provides Canada with next-door access not only to the world's largest market for industrial fuels and materials but also to the world's largest pool of savings seeking foreign investment. As one consequence, much investment in Canadian resource development has been undertaken directly by United States businesses so that they might exercise control over an assured and near-at-hand supply source of industrial materials. Moreover, the familiarity of United States financial institutions with the Canadian scene has greatly facilitated substantial Canadian borrowings in United States capital markets. Again, it should be emphasized that the foregoing factors are merely suggestive and are not intended to serve as a complete and satisfactory explanation of why domestic investment in Canada has persistently exceeded the level of National Saving. Inadequate understanding of the factors governing the level of domestic investment is blended with ignorance concerning the quantitative influence of the various factors determining the level of National Saving.

IV - CANADIAN AND UNITED STATES EXPERIENCE

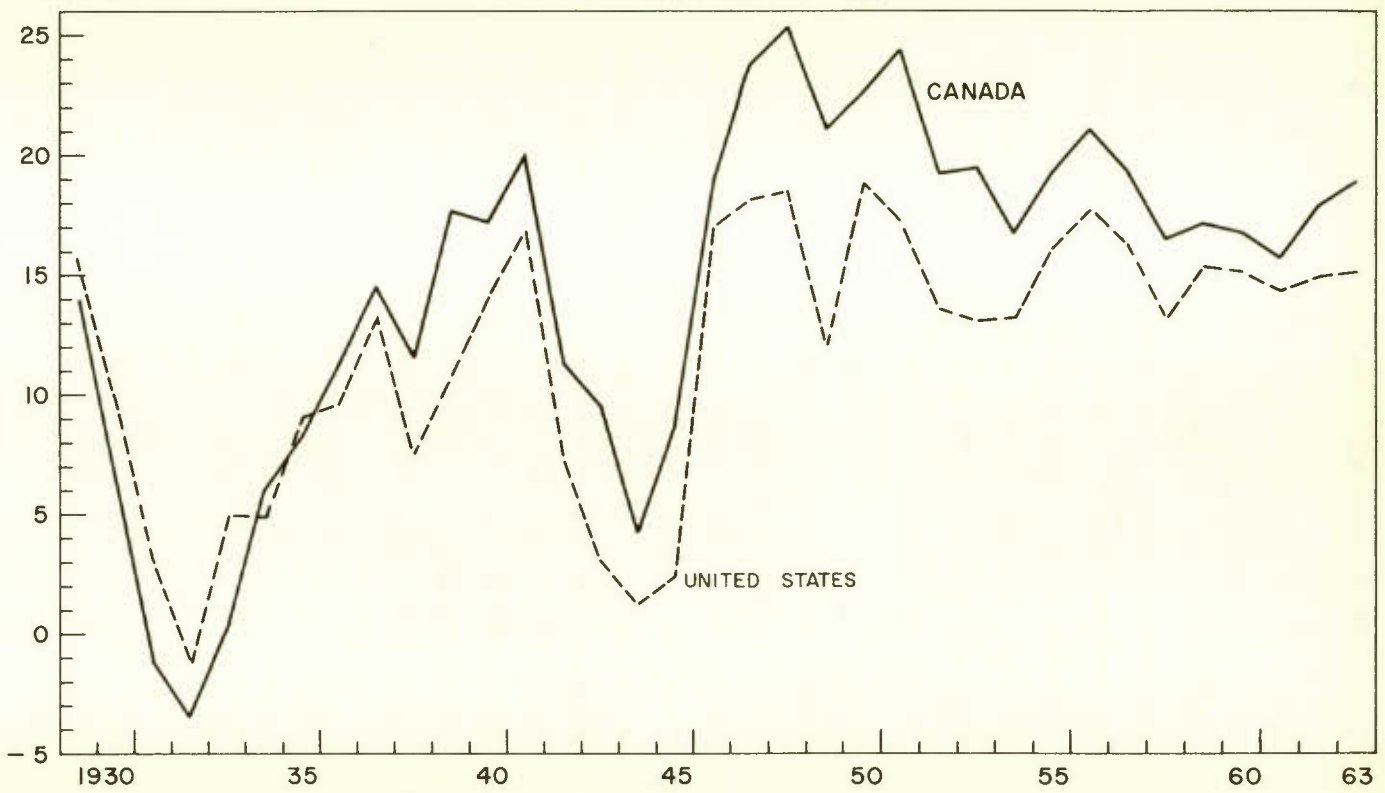
Although comparative analysis of Canadian data with that of various other countries places Canadian experience in broad international perspective, the social, political and economic links between Canada and the United States, (not to mention the proclivity of Canadians to emulate the economic performance of their southern neighbours) provide justification for a more thorough comparison of the two countries' experience. This section, therefore, looks at the levels and composition of Canadian saving relative to those of the United States. As our comparisons of saving ratios will generally be expressed in terms of percentages of Gross National Product (GNP), we might note first that the GNP of the U.S. currently runs around fourteen times the size of Canada's, and the margin favouring the United States has not narrowed substantially over the period with which our analysis is concerned.

In looking at Chart 1, it is important to remember that "National" Saving includes the gross saving (or dissaving) of both the private sector (i.e., all businesses and persons) and the surplus or deficit of the government sector.[1/] When National Saving dipped sharply in both countries during the Great Depression, both the public and private sectors were characterized by low levels of saving or actual dissaving. In contrast, during the Second World War, private saving rose to unprecedented heights as employment and private income increased greatly while the government sector in both countries accumulated enormous deficits in order to finance the war. Confining our attention to the post-war years we observe that the rate of National Saving in Canada has on average exceeded that in the United States by almost one third. However, from 1946 through 1953, saving in Canada exceeded that in the United States by almost 40 per cent, but since then by less than 30 per cent (although during the current business upswing since early in 1961 Canadian saving appears to have pulled further ahead again). A substantial part of the relatively higher rate of Canadian saving in the early 1950's is explained by the heavier strain that the Korean War imposed on the United States Treasury. The narrowing of the spread between the two National Saving rates from 1956 through 1960 is perhaps mainly attributable to the relatively larger government deficits in Canada accompanying the slower growth of the Canadian economy during that time.

1/ It is also well to recall that the term "national" as used in this context, applies to what saving is done by a country's residents. Thus, Canadian National Saving includes the saving of all corporations resident in Canada, including those subsidiary corporations that are owned by non-resident parent companies. Similarly, the saving of corporations resident in the United States, that are owned by non-residents of that country, is included as part of United States National Saving.

CHART I

NATIONAL SAVING, CANADA AND UNITED STATES, AS PERCENTAGE OF GNP



Note: National Saving, as charted here, excludes the Inventory Valuation Adjustment and the Residual Error of Estimate. For a description of these excluded items see the appended "Statistical Note".

Source: Based on data from United States Department of Commerce and Dominion Bureau of Statistics.

Similarly, the increase in Canadian saving relative to that in the United States since thencan in some measure be explained by the relatively faster growth of the Canadian economy. Nevertheless, the quite parallel movement in direction of the two countries' National Saving rates over the whole period covered by the Chart is impressive.

Throughout the balance of this discussion comparing Canadian-United States saving rates, we will look only at developments in the post-war period as they relate to the private sectors of the two economies. Chart 2 depicts the post-war pattern of Gross Private Saving (which is the National Saving less the surplus or deficit of governments) and its two principal components: Capital Consumption Allowances (including the capital consumption of housing and of nonprofit institutions as well as of businesses' fixed capital), and Net Private Saving which combines Net Personal Saving, (increases in the 'net worth' of persons) with Net Corporate Saving, (undistributed corporate profits).

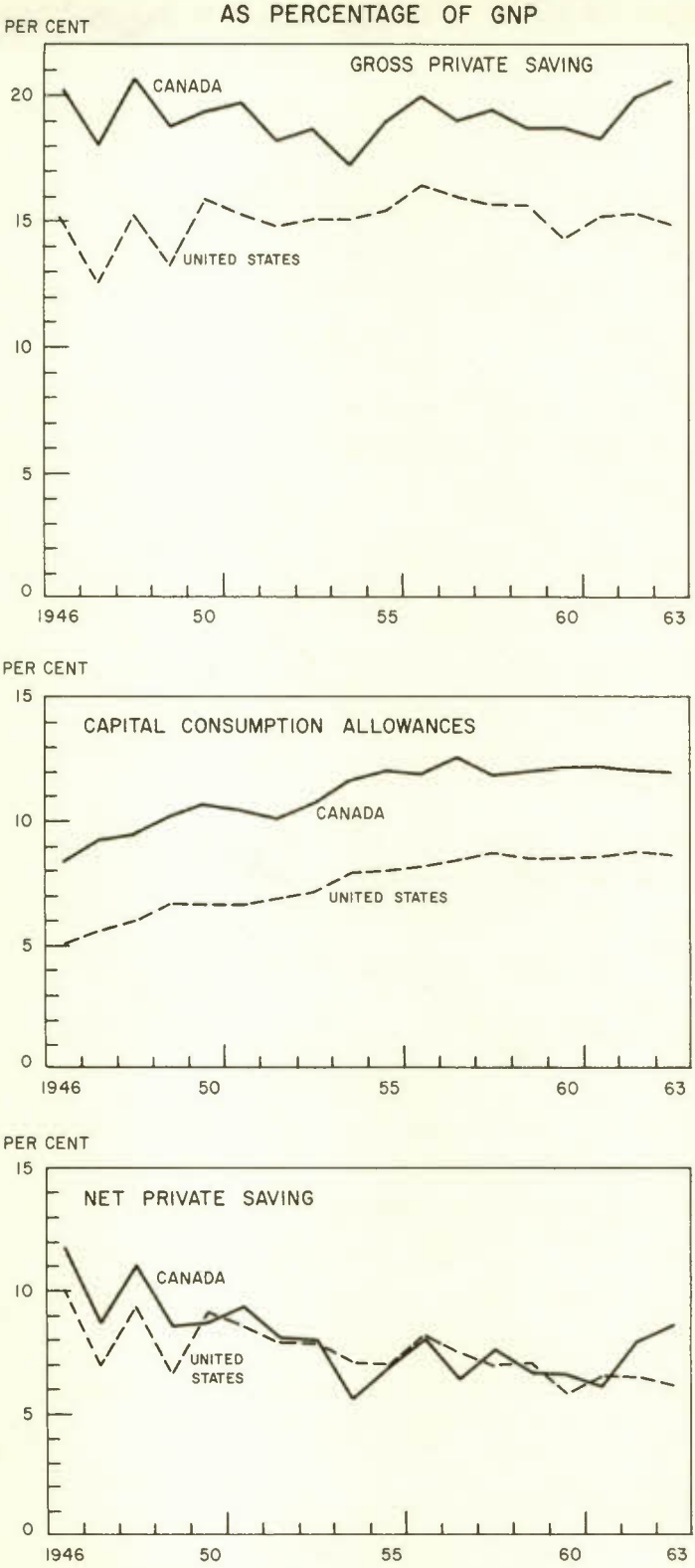
The most impressive feature of Chart 2 is the striking long-run stability revealed in both the Canadian and United States rates of Gross Private Saving. This stability is in sharp contrast to the marked instability of National Saving in both countries as noted in Chart 1. The latter instability results therefore from the savings role played by governments whose irregular saving habits, stemming largely from the contra-cyclical nature of government revenues and expenditures, have the effect of stabilizing national income. Again, however, the tendency of Canadian and United States saving to run in parallel directions is evident. Also of interest are the significantly higher rates of Gross Private Saving in Canada. The Canadian rate of Gross Private Saving persistently exceeds that of the United States by roughly one third.

A higher Canadian rate of Gross Private Saving results for the most part from higher capital consumption allowances (see the middle section of Chart 2). The higher capital consumption allowances, although perhaps partly explained by the somewhat higher rates of depreciation charged on certain assets in Canada, are consistent with the higher Canadian capital-output ratios noted in the staff study on private investment.[1/] However, it should be noted that although the absolute margin favouring Canadian saving through capital consumption allowances has been quite stable since the Second World War, United States capital consumption allowances increased their share of GNP by over 70 per cent while in Canada their importance increased by little more than 40 per cent.

1/ Derek A. White, op. cit.

CHART 2

GROSS PRIVATE SAVING AND MAJOR COMPONENTS, CANADA AND UNITED STATES, AS PERCENTAGE OF GNP



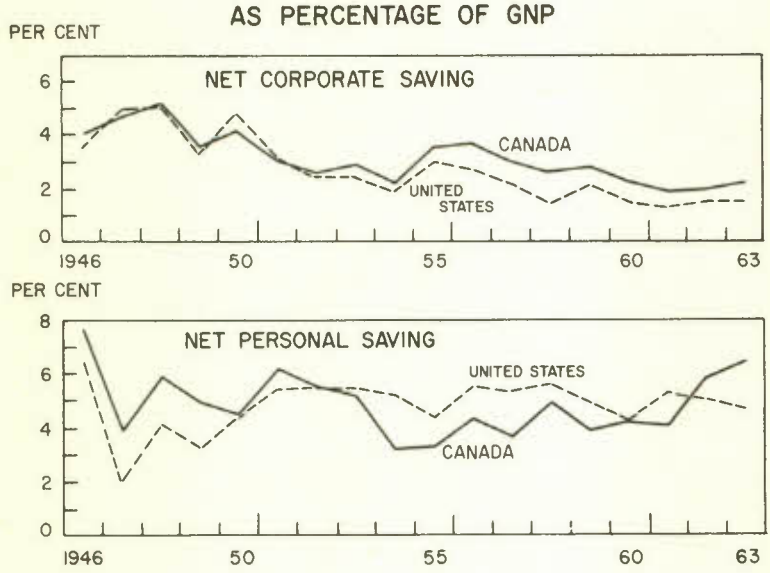
Source: Based on data from United States Department of Commerce and Dominion Bureau of Statistics.

Net Private Saving (see bottom of Chart 2) has tended to be much of the same order in both Canada and the United States. The U. S. net private rate was greater than the Canadian in just less than half of the post-war years. A higher U.S. net rate persisted in the years 1954 through 1959 but the Canadian net rate has exceeded the U.S. rate in three of the last four years. It is important to note, however, that while capital consumption allowances tended to represent gradually rising percentages of GNP in both countries until 1957, Net Private Saving during the same years declined noticeably, especially in Canada. Since then, Net Private Saving in Canada has tended to increase relative to that in the United States and in both 1962 and 1963 actually exceeded the United States rate by a substantial margin.

Chart 3 reveals how the two constituent elements of Net Private Saving (that is, Net Corporate and Net Personal Saving) behaved in both countries over the post-war period. Clearly evident is the extent to which a lower Canadian rate of Net Personal Saving accounted for the slightly lower rate of Net Private Saving in Canada over the period 1954-59. Indeed, Net Corporate Saving, as represented by the rate of Undistributed Corporate Profits, was significantly higher in Canada not only during that period but in every post-war year except 1947, 1950 and 1951. Although both the personal and corporate rates of net saving contributed to the higher rate of Net Private Saving in Canada during 1962 and 1963, the remarkably sharp increase in Canadian Net Personal

CHART 3

NET CORPORATE SAVING AND NET PERSONAL SAVING
CANADA AND UNITED STATES
AS PERCENTAGE OF GNP



Source: Based on data from United States Department of Commerce and Dominion Bureau of Statistics.

Saving was almost totally responsible for the relative increase in the Canadian rate of Net Private Saving. While the recent relative rise in Canadian Net Personal Saving seems largely attributable to the quicker pace of Canadian expansion, no similarly facile inference aids in explaining the stronger performance of the net personal rate in the United States during the 1954-59 period.

In sum, the charts indicate that total private saving in Canada accounts for a larger share of total income than in the United States. While the higher saving rate in Canada is primarily attributable to higher capital consumption allowances, reflecting in part a higher capital-to-output ratio, Net Corporate Saving in Canada also tends to be relatively higher than in the United States. On the other hand, the rate of Net Personal Saving, which in recent years has been roughly twice as large as Net Corporate Saving, tends to be broadly similar in the two countries.

In spite of the relatively higher rate of total saving in Canada there has been a persistent net flow of long-term capital from the United States into Canada. This inflow of capital partly reflects the higher rate of business investment in Canada than in the United States, a difference so large that it cannot be financed by the higher rate of Canadian saving. In addition, extensive foreign ownership of Canadian industry (particularly in the natural resource area) tends to draw in additional foreign resources with the initiative for the investment decision and the associated financing coming typically from a non-resident parent company. The higher rate of business investment and capital inflow is particularly marked when world markets are strong and capital facilities within Canada are being used at near-capacity levels. However, the interrelations between National Saving, domestic investment, the capital inflow and the balance of payments on current account with non-residents are so complex that the implications of many developments for these interrelations are exceedingly difficult to assess.

V - PRIVATE SAVING TO 1970 - A PROJECTION

Projection of Canada's National Saving to 1970 may be facilitated by first looking in a general way at the nature and past trends of National Saving (and its components) and at the problems of anticipating their likely future course. The appended "Statistical Note" is intended to serve as a conceptual aid to this discussion.[1/]

Of central importance to this projection is the remarkable long-run stability which was observed in both the Canadian and United States rates of Gross Private Saving over the whole post-war period. Restricting attention to the Canadian experience only, Chart 4 depicts the post-war pattern of Gross Private Saving and the relationship of its two constituents: Gross Corporate Saving and Gross Noncorporate Saving. This Chart reveals that the stability in the Gross Private Saving rate resulted from offsetting tendencies in its corporate and noncorporate components. The Chart also indicates that the rate of Gross Private Saving in one year can vary a number of percentage points from the rate of another year. This rate fell to a low of 17.3 per cent of GNP in 1954 but exceeded 20.0 per cent in 1946, 1948 and 1963. Comparing, however, the rates of Gross Private Saving achieved in each business cycle, we find that the rate demonstrates an almost polestar stability from cycle to cycle over the whole post-war period. Although we are interested in knowing if this stability held prior to the calamity years of the Second World War and Great Depression, official statistics permit us to look at the Gross Private Saving rate for the last expansionary stage prior to 1930 only -- that is, at the years 1926 through 1929. Including this period, the results for each cycle are presented in Table 2.

1/ Capital letters are used in the body of the text to denote technical terms described in the "Statistical Note". The reader may nevertheless note here that:

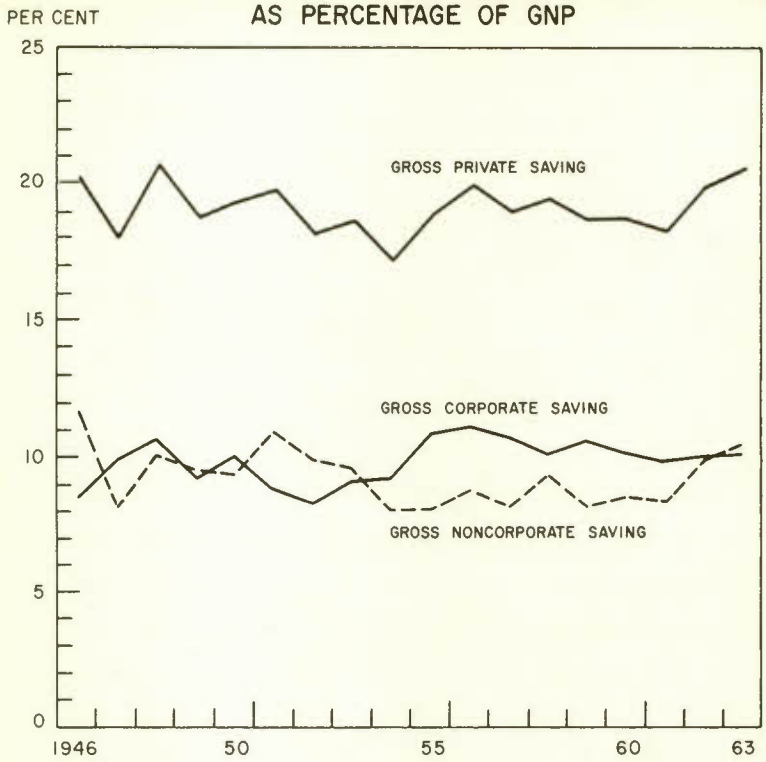
Gross Private Saving equals Gross Noncorporate Saving plus Gross Corporate Saving;

Gross Noncorporate Saving is equal to Net Personal Saving plus Capital Consumption Allowances of unincorporated business, nonprofit institutions and of houses owned by persons;

Gross Corporate Saving is equal to Net Corporate Saving (i.e., Undistributed Corporate Profits) plus the Capital Consumption Allowances of corporations.

CHART 4

GROSS PRIVATE, CORPORATE AND NONCORPORATE SAVING, CANADA, AS PERCENTAGE OF GNP



Source: Based on data from Dominion Bureau of Statistics.

Table 2

Gross Private Saving and Gross National Saving, Book-Values, as Percentages of GNP by Business Cycle Periods, Canada, 1926-63

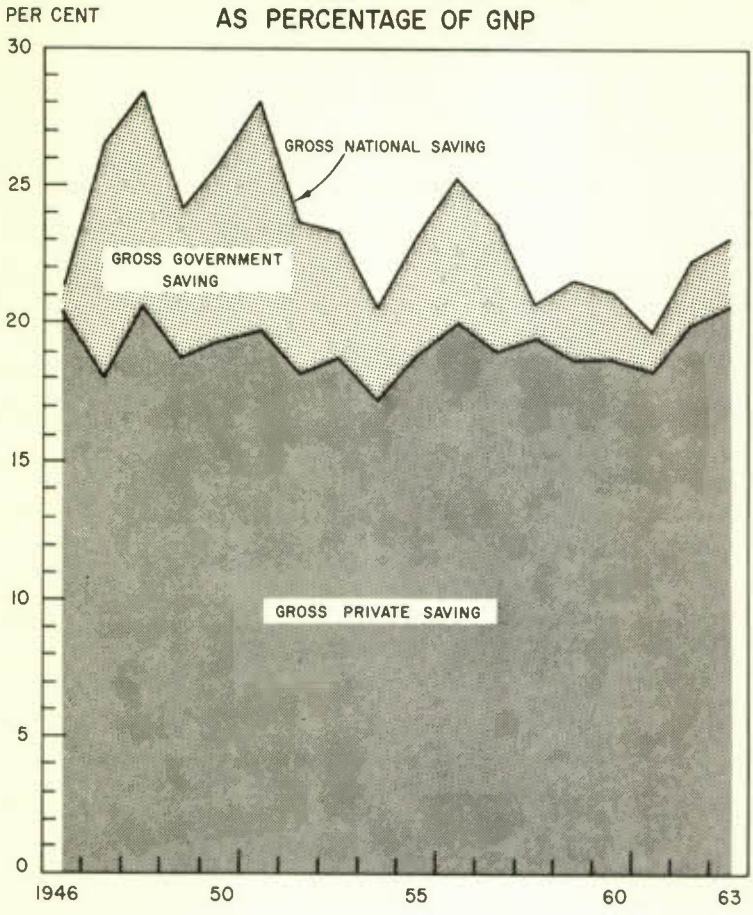
Years Grouped by Cycle (1)	Gross Private Saving	Gross National Saving
1926-29	18.89	21.99
1930-37	10.13	8.98
1938-45	22.73	15.47
1946-48	19.69	25.71
1949-53	18.96	24.97
1954-57	18.88	23.28
1958-60	18.98	21.09
1961-1963	19.69 (Preliminary)	21.81 (Preliminary)

(1) Although the years 1926-29 roughly encompassed a complete cycle in the United States, those years in Canada were characterized by a continuation only of an expansionary stage begun in the last half of 1924. The 1930 through 1937 period, on the other hand, covers almost a complete cycle measured from peak to peak while the remaining periods through 1960 tend to date complete cycles measured from trough to peak. The figures used for this tabulation were on an annual basis with the consequence that dates of cycles are identified with year ends rather than, more accurately, with particular quarters or months.

Source: National Accounts, various issues; Dominion Bureau of Statistics.

CHART 5

GROSS NATIONAL, GOVERNMENT AND PRIVATE SAVING, CANADA, AS PERCENTAGE OF GNP



Source: Based on data from Dominion Bureau of Statistics.

Although Gross Private Saving fell to extremely low levels in the 1930's, and rose to abnormal peaks during the war years,[1/] the highest rate of Gross Private Saving has deviated from the lowest rate for any of the other groups of years shown by only 0.81 per cent of GNP. If the rather atypical 1946-48 years and the current expansionary years are also omitted, the greatest variation among the remaining periods amounts to only 0.10 per cent of GNP.[2/]

1/ Although supply shortages and price controls during the war years undoubtedly increased the private sector's propensity to save, the high saving levels of those years were also a function of rising incomes. On the other hand, the depressed levels of saving in the 1930's may serve as a classic illustration of the depressive effects of low incomes on saving propensities. Monetary ease characterized both the depression and war years.

2/ But the fractional variation from cycle to cycle may conceal substantial variation within cycles. In the 1926-29 expansion, for example, the Gross Private Saving rate ranged from over 23 per cent in 1926 to about 14 per cent in 1929. Indeed, the variation is so wide between those years that one cannot help suspect that the close comparability of the rate of the 1926-29 expansionary years with the rate of other periods may well be spurious.

The Gross National Saving rate has been introduced into the above Table in in order to illustrate the comparative instability of this rate which combines the Gross Private Saving and the Gross Government Saving rates.[1/] It is thus apparent that instability in the Gross National rate over the post-war period results almost entirely from changes in the rate of Gross Government Saving. Chart 5 shows that even in the current expansion the rate of Gross National Saving has not reached its pre-1958 level because of reduced government saving. Chart 6, on the other hand, reveals that the reduced rate of Gross Government Saving is explained by the movement of governments from a surplus to a deficit position and not by a reduction in the rate of Government Gross Fixed Capital Formation. A point to note here is that the contribution of government to Gross National Saving can increase along with a mounting government deficit, provided that Government Gross Fixed Capital Formation increases at a faster rate than the deficit. For example, Gross Government Saving, in current dollar terms was higher in the deficit years of 1959, 1962 and 1963 than in 1949 when government account posted a substantial surplus.[2/]

Of particular interest here is the unexplained stability in the Gross Private Saving rate in combination with offsetting instabilities in its components (see Chart 4). Understanding of the offsetting tendencies in the corporate and noncorporate rates of Gross Saving is aided by Chart 7 which shows how Capital Consumption Allowances and the net components of saving in both the corporate and noncorporate sector have behaved in relation to GNP since the Second World War. Capital Consumption Allowances became increasingly important as a percentage of national product from the end of the war through 1957, declined sharply in 1958, and have since tended to remain fairly constant, with the corporate part continuing to exhibit more strength than the noncorporate

---

1/ Gross Government Saving consists of the nondefence capital expenditures of all governments adjusted upwards for surpluses and downwards for deficits. A more rigorous explanation of Gross Government Saving is presented in the "Statistical Note".

2/ This observation might lead to another: that Gross National Saving could be maintained if governments would increase their capital formation rather than their current expenditures when a deficit is in the offing. Though true in an accounting sense, the latter view may involve confusing the goal of increasing the rate of economic growth with the means of doing it. A government deficit is, according to most economists, properly incurred under slack conditions in order to increase employment and growth. But not all government investment is so productive of either employment or growth, as certain government current expenditures. For example, government grants-in-aid of research and education may offer greater rewards than investment in, say, ornate government buildings.

CHART 6

GOVERNMENT GROSS FIXED CAPITAL FORMATION AND GOVERNMENT GROSS SAVING CANADA

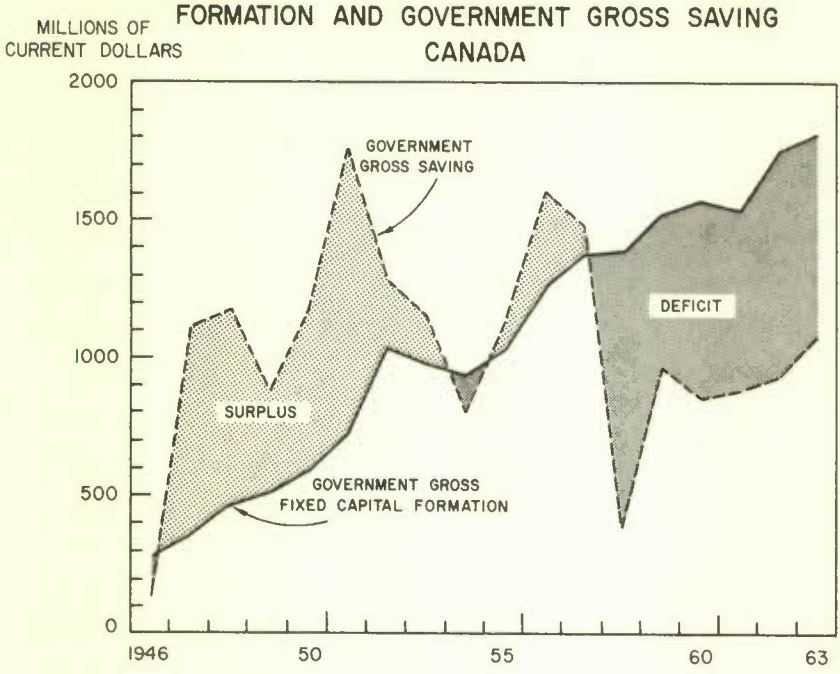
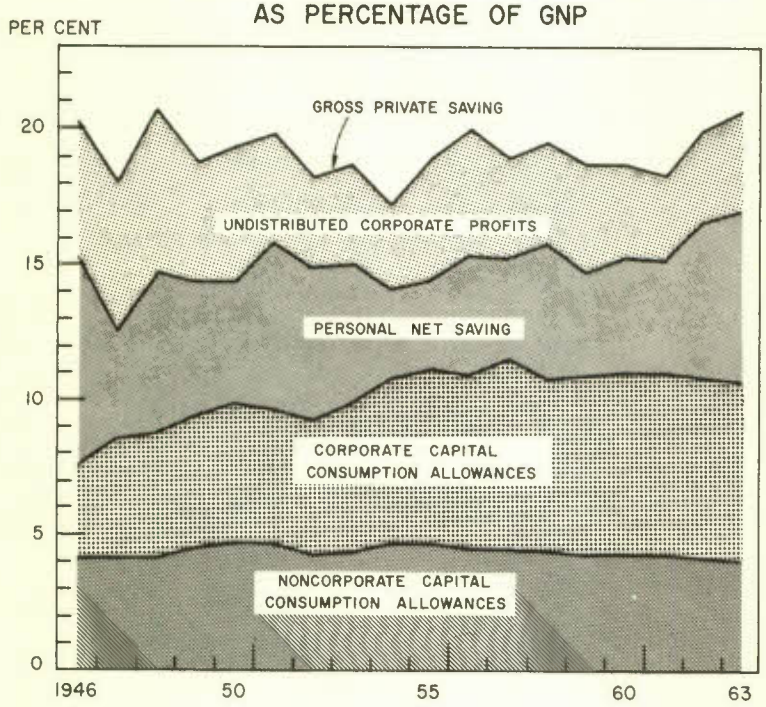


CHART 7

COMPONENTS OF GROSS PRIVATE SAVING, CANADA, AS PERCENTAGE OF GNP



Source: Based on data from Dominion Bureau of Statistics.

component. Retained corporate profits, on the other hand, have surrendered more than half their share of GNP since 1948 and, even in the 1961-63 upswing, had yet to match their shrunken relative magnitude of the weak 1958-60 cycle.[1/] However, it is worth noting that the rate of total corporate saving (which includes both undistributed corporate profits and corporate capital consumption allowances) is now much the same as it was in the early post-war years and continues to be measurably above the levels prevailing in the early fifties. But the strongest factor sustaining the rate of Gross Private Saving since 1957 has been Personal Net Saving. Moreover, in the current expansion, almost all of the increase in the Gross Private Saving rate is due to the rapid growth of Personal Net Saving which accompanied the sharp cyclical rise in personal disposable income.

Confidence in the continuing stability of the Gross Private Saving rate is encouraged by some corroborative empirical evidence in the United States. Edward F. Denison, writing in 1958, showed that for each year 1948 through 1956 United States Gross Private Saving could be estimated quite closely with the average ratio of Gross Private Saving to GNP of those years as well as of 1929.[2/] In no year during the period did the average deviate from the actual by more than 0.5 per cent of GNP or by more than 3.4 per cent of Gross Private Saving, with the average annual deviation being only 2.1 per cent of Gross Private Saving. He observed, moreover, that this simple estimate of Gross Private Saving gave superior results to a summation of all components of that saving, when each of the components (i.e., personal net, corporate net and capital consumption allowances) was estimated with its own estimating formula. He also found, as we have in relation to the Canadian data, that Gross Private Saving can be estimated with a simple formula for most years with an average error smaller than the statistical discrepancy between the income and expenditure ways of measuring GNP ... that is, smaller than twice the residual error. Stability in the rate of Gross Private Saving over a very long period is suggested by his observation that "....Kuznet's data support the absence of a trend in the ratio (of Gross Private Saving to GNP) over the past 80 years".[3/]

1/ While retained corporate profits had surpassed their absolute levels of 1958-60, they had not grown since then as fast as GNP. This comment applies as well to before-and-after-tax profits in total.

2/ Edward F. Denison, "A Note on Private Saving", Review of Economics and Statistics, August 1958.

3/ Ibid.,p. 262.

Given the instability in the components of gross saving, it would clearly be imprudent, if not impossible, to place any confidence in their projected values, however carefully such projections were drawn. Given, too, that instability in each of the components has tended, particularly at high employment levels, to be offsetting, thus leaving the rate of Gross Private Saving relatively unaffected and therefore stable, projection of total private saving is obviously less hazardous. Making therefore no attempt to project the components of private saving, we concentrate on projection of the total. While this projection is, of course, postulated on the assumption that past experience can serve as a useful guide to future behaviour, it should also be emphasized that the projection is founded upon the high growth rate assumptions and potential output analysis in the First Annual Review of the Economic Council of Canada.[1/] Hence, the projection is neither prediction nor forecast, but a calculation of saving at potential output in the Canadian economy in 1970.

Essentially the projection merely extrapolates the average post-war rate of Gross Private Saving at high employment levels. This rate, however, is given a slight upward adjustment to take account of the high level of activity postulated for 1970. The level of saving projected for that year is the average level to be expected when the economy operates at potential, i.e., with unemployment at 3 per cent of the labour force and the rate of over-all price increase at no more than 2 per cent per annum. In accordance with the foregoing, Gross Private Saving is projected at 20.0 per cent of GNP (expressed in current dollars) at 1970 potential output.[2/]

1/ See Chapter 3; see also B. J. Drabble, op. cit.

2/ Although 20 per cent may tend slightly towards the high side, a low estimate at "potential" would place the figure at scarcely less than 19 per cent.

VI - EFFECTS OF THE PROPOSED GOVERNMENT-ADMINISTERED UNIVERSAL PENSION PLANS

The Canada Pension Plan White Paper was tabled in Parliament on August 10, 1964. That Plan is intended to apply to nine provinces only, but the main provisions of Quebec's own plan are essentially similar to those of the Federal Plan. Compulsory contributions amount in total to 3.6 per cent of each person's income excluding both the first $600 earned (the first $800 in the case of the self-employed) and income above $5,000 per annum. The 3.6 per cent rate of contributions, which would be equally shared by employers and their employees, would thus be applicable initially on a maximum of $4,400 annual income per person. Contributions would tend, however, to be adjusted in step with changes in the general wage level while benefits would be adjusted at intervals to keep pace with the cost of living.

The earnings-related plans would come into effect as of January 1966, with some partial pensions payable out of the funds beginning in 1967. However, the full maximum pension of $104.17 per month (excluding benefits payable under the flat-rate Old Age Security pension) would not become payable until 1976. Funds accruing under the Federal Plan would be loanable to the participating provinces, (and perhaps, in turn, by them to municipalities) at rates of interest not below the rates paid by the federal government on long-term bonds. In the early years of the plans' operation, at least until 1970, the plans would accumulate funds at a much more rapid rate than they would be dispensing benefits. As the plans approach maturity, however, their main effect would be to transfer income from the working population to the retired, disabled and widowed and to orphans.

Of particular interest are the economic implications described in the White Paper and in Economic Implications of the Canada Pension Plan, a report published by the Department of Finance on December 10, 1964. Interest in these implications is heightened by the divergence of their tenor from the view presented in the Report of the Royal Commission on Banking and Finance which states:

> "It is in fact all but certain that the financing of a national pension scheme with relatively high benefit levels would result in a substantial reduction in funds available for investment in the mortgage bonds and equities which the savings institutions acquire. -- A serious reduction in domestic private financial investment would fall most heavily on municipal and provincial governments and on business, agriculture and housing. It might well lead to increased reliance on investment by non-residents and necessitate steps by the federal government to see that adequate levels of capital formation are financed in one way or another."[1]

---

[1] Report of the Royal Commission on Banking and Finance, Ottawa: Queen's Printer, 1964, p.264.

On the other hand, the Finance Department seems to suggest that: (a) the plans' impact on private saving is unlikely to be very great; and (b) the plans' early effects on capital markets may tend to reduce domestic interest rates and, partly as a result, to lessen Canadian reliance on imports of foreign capital. One purpose of this section, then, is to attempt a brief independent assessment of the pension plans' effects on savings and capital markets and so derive an appreciation of some of the plans' implications for analysis of potential output to 1970.

An insight into some of the pension plans' implications is facilitated by returning for a moment to Denison's "Note on Private Saving". Given the range of United States cyclical behaviour and of changes in tax rates and transfer payments over the period 1948 through 1956, Denison presented several tentative implications of the stability in Gross Private Saving, one of which is particularly germane here:

> ..."(a) that there was greater stability in the division of factor income before taxes (i.e., income other than transfers, etc.) between spending (consumption plus taxes) and saving than in division of factor income after taxes between consumption and saving; and (b) that it is more nearly correct to view transfer and similar income as having been entirely spent than as divided between spending and saving in the same proportion as factor income. Or, put probably too bluntly, that taxes and transfer payments subtracted or added directly to consumption without affecting private saving".[1/]

Both Denison's analysis and Canadian experience suggest that moderate changes in taxes and transfer payments tend to subtract or add directly to consumption without observably affecting the rate of private saving. If this is the case, and if contributions to the pension plans are viewed as a tax and the benefits as a transfer, we have reason to expect that in the years prior to 1970 the pension contributions would tend to represent a subtraction from consumption and an addition to government saving (and the benefits vice versa), with Gross Private Saving tending to remain unaffected. Thus, the net effect of the proposed government-administered universal pension plans in the years of rapid accumulation prior to 1970 might be expected to reduce consumption and add to Gross National Saving. The proviso, of course, is that governments as a group do not increase their current expenditures (as opposed to their capital expenditures), by an additional amount sufficient to absorb the entire pension fund accumulations.[2/]

Incomplete evidence of the effect of funded pension plans on private saving

---

1/ Op. cit., p. 264.

2/ Projection of Government Revenue and Expenditure in Chapter 7 of the First Annual Review of the Economic Council takes into account the contributions arising from the proposed plans as well as additional expenditures likely to be facilitated by governments broader access to funds. As indicated there, government account is projected to be in surplus at 1970 by an amount in excess of funds accruing from the proposed pension plans in that year.

tends to bear out the foregoing view. In Sweden, for example, a new national pension scheme was introduced in 1960 to complement the scheme in existence since 1946. The net accumulations of this plan as a proportion of GNP have been substantially more than twice as high as those projected here for Canada and have very considerably increased the rate of Sweden's national saving. Even more remarkable is the fact that personal saving as a percentage of personal disposable income in Sweden has risen to post-war peaks in every year since the new plan was introduced. While research to date in the United States seems to have largely ignored the impact on saving of the compulsory national pension scheme, Philip Cagan found, in relation to pensions provided privately and by individual states of the United States, that "on average pension coverage does not lead households to reduce their saving in other forms".[1/] Thus, both United States' and Sweden's experience, while limited in application to our study, are broadly consistent with our working assumption that Canada's proposed government-administered universal pension plans are unlikely to reduce private saving by reducing personal saving.

On the other hand, we have no practical way of gauging the unique impact of the proposed plans on undistributed corporate profits. But the federal government's suggestion that some part of the burden on corporations of employer contributions may be reflected in increased prices, or may be offset by reduced gains in other components of labour cost and in before-tax profits, seems plausible. In any case, the observed post-war stability in Gross Private Saving in the face of marked shifts in the rate of growth and composition of GNP, changes in transfer payments, tax rates and interest rates does not suggest that the impact of the proposed pension plan on private saving in total can be very great. Consequently, our estimate of Gross Private Saving in 1970 would not be materially changed as a result of the proposed plans' implementation.

This study's projection of the amount of funds accruing to the universal government-administered pension plans in 1970 differs from the federal government's projections for a variety of reasons. The most important of these hinge on different assumptions regarding rates of economic growth in terms of current dollars. The government's projections, in accord with standard actuarial practice, are based on quite conservative growth assumptions. In contrast, this study's projection is based upon an

---

1/ National Bureau of Economic Research Inc., Forty-Third Annual Report, May, 1963, p. 23. Although groups covered through high employee contribution rates and full vesting tended to let pension saving substitute for other forms of saving, other groups reacted by increasing other saving. The net effect added to personal saving by the full amount of pension accumulations.

assumed growth rate at potential output to 1970. In addition, some inconsistency results from differences in projecting methods, those of the government being considerably more complex and detailed. However, no significant variation in orders of magnitude seem to be attributable to such methodological discrepancies.

Based on taxation statistics,[1] this study's projection of the net accrual to the universal government-administered pension funds was derived, first, from estimation of total contributions at potential output in 1970. Secondly, the benefits and expenses of administering the plans, based on the federal government's actuarial report, were deducted from the estimated contributions. Finally, an interest charge valued at 5 per cent of the estimated total funds accrued from 1966 (including the compounded value of interest accruals) was added to arrive at the net accrual to the pension funds.[2] Estimated in this way, the accrual to the proposed pension funds in 1970 at potential output would amount in current dollar terms to about $850 million (or more than $100 million above the government's actuarial estimates). Thus, government saving attributable to the proposed pension plans would amount to roughly 1 per cent of GNP and to about 5 per cent of Gross Private Saving at potential output in 1970.

Because of the proposed plans' probable effect on government saving, particularly on the government surplus or deficit, capital markets, other things equal, seem bound to experience some transition — but not for the reasons nor in the way indicated by the earlier quotation from the Report of the Royal Commission on Banking and Finance. First, if this study's projection of the stability in Gross Private Saving is in the right direction, the contemplated pension plans, at least in their early years, would not result in a reduction of private savings available for investment in the "mortgages, bonds and equities which the savings institutions acquire". Rather, Gross Private Saving would increase in step with GNP whether or not the proposed pension plans are implemented. Secondly, if the provinces and municipalities find that they need to turn to the capital markets relatively less often (because of the funds readily available to them from the proposed pension plans) the private savings thereby released would be

---

1/ Taxation Statistics, Part One - Individuals, Department of National Revenue, Queen's Printer, 1964.

2/ Although interest receipts of the federal government would be offset by the interest payments of provincial governments, saving in the government sector of the National Accounts should nevertheless be increased by the amount of the annual interest accrual. This increased saving in the government sector results from the fact that, given the level of government expenditure, the interest charges would not be paid outside the government sector as they otherwise would be if the government-administered universal pension plans did not exist. Thus, other things equal, government interest outlays would tend to decline.

available for investment in other channels. Finally, it seems that the proposed pension plans would likely lead to decreased borrowing by provinces and municipalities not only in Canadian but also in foreign capital markets. Lessened portfolio borrowings abroad and at home by governments over the period of build-up in the pension funds could also have secondary effects in other forms of capital flow as relatively more private funds sought private investment outlets in Canada. One consequence might be a tendency to lessen the yield differential on Canadian and United States bond issues below what it would otherwise be.

While this analysis suggests that the additional saving derived from the proposed pension plans is likely to permit a higher level of national investment at the expense of private consumption, a smaller proportion of total investment would be exposed to the market decisions of financial institutions. Although the conventional wisdom seems to be that the financial institutions tend to channel spending into more profitable lines than governments, the expected differences in real rates of return have yet to be validated by empirical tests.

VII - NATIONAL SAVING TO 1970 - A SUMMARY

The movement of the Canadian economy towards potential output involves an increasing amount of private investment, both absolutely and in relation to GNP, reflecting the extent of response of business investment to rising levels of output. Private savings also would grow absolutely, but the discussion in this study emphasizes its stability as a share of total output. Chapter 7 of the First Annual Review of the Economic Council shows how increases in potential income would be reflected in substantial increases in government revenues at existing tax rates.[1/] Even if changes in tax rates and expenditures were made to keep government saving at the three levels of government about in line with the annual net rate of accumulation of savings in the government-administered universal pension fund, the government sector need not be a net demander of funds at potential output. This provides an important contrast with recent years when governments were net borrowers of funds on the capital market. However, even this high level of national saving would still be insufficient to match the high level of investment that has been estimated at potential output. A net long-term capital inflow, both for direct and portfolio investment, would be necessary to cover the estimated amount of domestic investment indicated in Chapter 4 of the First Annual Review of the Economic Council, and would be consistent with the current account deficit indicated in Chapter 5 on the basis of the assumptions outlined there. A net long-term capital inflow (which would roughly equal the current account deficit) of the magnitude shown in Table 3 (below) would be appreciably lower in relation to domestic investment and income than has occurred under comparable past conditions of rapidly rising domestic economic activity. The discussion of national saving at potential output in this study is thus consistent with the discussion in the First Annual Review and the other related staff studies.

Given this study's projection of Gross Private Saving at 20.0 per cent of potential GNP in 1970 and the government surplus discussed in Chapter 9 of the First Annual Review of the Economic Council at 1.4 per cent (which incorporates accruals from the proposed government-administered universal pension plans), National Saving as per National Accounts would amount in 1970 to 21.4 per cent of potential GNP. Adding a saving offset equivalent to Government Gross Fixed Capital Formation at 4.8 per cent of potential GNP, Gross National Saving in 1970 would aggregate 26.2 per cent of potential GNP. The consistency of potential saving and investment projected to 1970 is illustrated in Table 3.

1/ See also D. J. Daly, op. cit.

Table 3

Gross National Saving, Current Book-Values,[1]
Selected Years 1956-63 Actual and 1970 Projected
as Percentage of GNP

	1956	1957	1961	1962	1963	1970	1970 Billions of Dollars
	%	%	%	%	%	%	
Sources of Saving							
Gross Private Saving	19.8	19.0	18.2	20.0	20.6	20.0	14.4
Government Surplus (+) or Deficit (-)	1.1	0.3	-2.7	-2.0	-1.7	1.4	1.0
Residual Error of Estimate	0.5	0.1	-0.2	-0.5	-0.6	(2)	(2)
National Saving per National Accounts	21.4	19.4	15.3	17.5	18.3	21.4	15.4
Add: Saving Offset re: Government Gross Fixed Capital Formation	4.1	4.3	4.1	4.4	4.2	4.8	3.4
Gross National Saving	25.5	23.7	19.4	21.9	22.5	26.2	18.8
Add: Deficit on Current Account With Non-Residents	4.4	4.4	2.4	2.0	1.1	2.4	1.8
Gross Domestic Saving	29.9	28.1	21.8	23.9	23.6	28.6	20.6
Disposition of Saving							
Business Gross Fixed Capital Formation	22.0	22.9	17.7	17.3	17.4	22.5	16.2
Book-Value Change in Inventories	4.3	1.0	-0.2	1.6	1.5	1.5	1.1
Residual Error of Estimate	-0.5	-0.1	0.2	0.6	0.5	(2)	(2)
Private Domestic Investment	25.8	23.8	17.7	19.5	19.4	24.0	17.3
Less: Deficit on Current Account With Non-Residents	-4.4	-4.4	-2.4	-2.0	-1.1	-2.4	-1.8
National Investment per National Accounts	21.4	19.4	15.3	17.5	18.3	21.6	15.5
Add: Government Gross Fixed Capital Formation	4.1	4.3	4.1	4.4	4.2	4.8	3.4
Gross National Investment	25.5	23.7	19.4	21.9	22.5	26.4	18.9

(1) As the projection of Gross Private Saving excludes the Inventory Valuation Adjustment, the change in inventories shown in the disposition of saving represents the change in their book-values and thus allows for both price and physical changes.

(2) The total statistical discrepancy between projected sources and disposition of saving in 1970 amounts to roughly $100 million. In part to highlight this discrepancy, however, it is not here apportioned to the sources and disposition of saving as residual error.

Source: Actual Values, selected years 1956-63 from National Accounts, various issues, Dominion Bureau of Statistics. Projected Values for 1970 based on First Annual Review of the Economic Council of Canada as follows: Government Surplus--Chapter 9; Government Gross Fixed Capital Formation--Chapter 4; Deficit on Current Account With Non-Residents--Chapter 5; Business Gross Fixed Capital Formation--Derek A. White, op. cit. This total for Business Gross Fixed Capital Formation in 1970 dollars is slightly higher in real terms than that shown in 1963 dollars in Tables 17 and 26 of Chapter 4 of the First Annual Review. The change arises from further refinements to make the investment estimates accord more closely with the output estimates embodied in the Review.

The Book-Value Change in Inventories was projected on the basis of unchanged inventory-to-sales ratios at 1963 levels.

APPENDIX

STATISTICAL NOTE

1. Gross Saving Equations

For an economy, economic sector or any economic unit, gross saving can be expressed in terms of a number of different equations, all of which should, in principle, yield the same result.

Equation 1 -Gross Saving = total income minus total expenditure on consumer goods and services. (Inapplicable to business sector as business does not consume.)

Equation 2 -Gross Saving = total capital consumption allowances plus net saving.

Equation 3 -Gross Saving = gross real investment minus net resources borrowed from others or plus net resources loaned to others.

An elaboration of equation 3 might be stated as follows, (where valuation changes in the value of existing real assets and financial assets either are ignored or cancel out):

Gross Saving = Gross Investment in real assets (G.R.I.) plus the net difference between changes in financial assets (F.A.) and changes in financial liabilities, (F.L.)
i.e., $= \Delta$G.R.I. + (ΔF.A. - ΔF.L.) where ΔF.A. - ΔF.L. might be thought of as net financial saving.

The purpose for setting out the above equations is to relate the special sense of some of the terms used in this paper with the meaning of corresponding items in Canada's National Accounts. A copy of Tables 17 and 18 constituting the saving account of the National Accounts is attached along with a saving account schema used for this paper.

Aside from certain valuation adjustments and an adjustment on grain transactions, (which will be discussed later), Table 17 of the National Accounts equates the sources of National Saving with the sum of Personal Net Saving,[1/] Corporate Net Saving

---

1/ Net Saving represents, for a sector, the net additions to that sector's equity, i.e., the net difference between any additions (or decreases) to its assets and the additions (or decreases) to its liabilities. Personal Net Saving, so recorded in the National Accounts, is found as a residual equal to the excess of personal disposable income over personal expenditure on consumer goods and services. Note, therefore, that Personal Net Saving (and consequently Gross Private Saving), excludes any saving arising from investment by persons in consumer durables.

(i.e., undistributed after-tax corporate profits), capital consumption allowances in the private sector (including depreciation of all residential housing as well as of business premises and equipment,[1] plus the net surplus or minus the net deficit of all governments in Canada, plus the residual error of estimate.

2. Net Foreign Investment

A deficit on current account with the rest of the world, which is the equivalent of an inflow of foreign saving, is shown in Table 18 of the Accounts as a negative disposition of National Saving. The schema's treatment is not essentially different. It shows a surplus as an addition to, and a deficit as subtraction from, the sub-total of Gross Domestic Investment to arrive at Gross National Investment. However, the deficit or surplus with changed sign is applied also to the sources of saving side to emphasize the fact that a deficit is a non-national source of saving available for domestic investment and that a surplus is an export of national saving.

3. Components of Gross Saving

In addition to the external sector, however, we were interested, for this paper's purpose, in looking separately at the patterns of gross saving and of net saving in each of the three remaining constituent sectors of the economy: persons, business and governments. Looking first at the personal and business sectors the initial task was to try to allocate total capital consumption allowances (and miscellaneous valuation adjustments),[2] as shown in Table 17 of the National Accounts, between the personal sector and the business sector. This division, however, was found impossible with currently available statistical classifications. Instead, we went as far in this direction as the statistics allowed: for a personal sector and a business sector we

---

1/ Although Table 17 shows all capital consumption allowances under business gross saving, it might be noted that government business enterprises, (e.g., C.N.R., provincial electrical and telephone utilities etc.), are included in the business sector. In this paper they are similarly included in the corporate sector and thus in the private sector, not in the government sector.

Moreover, embodied in the capital consumption allowances attributed to government business enterprises is a small amount covering imputed depreciation of government-owned buildings, not owned by government business enterprises. These are also included in this paper as a part of the capital consumption allowances of the corporate sector.

2/ The "miscellaneous valuation adjustments", (M.V.A.) take account of such things as capital outlays charged by business to current expense, noncapital outlays charged to capital account, receipts from scrap and salvage, bad debt allowances, etc. The M.V.A. cannot at present be separated statistically from capital consumption allowances. For a fuller discussion, see National Accounts, 1926-1956 paras. 59 through 71.

substituted a noncorporate sector and a corporate sector, the two together constituting the whole national private sector. Thus, to obtain the gross saving of the corporate sector we combined the capital consumption allowances of corporations (including those of government business enterprises),[1/] as shown in Table 51 of the National Accounts, with the undistributed corporate profits shown in Table 17. Similarly, the capital consumption allowances of individuals and unincorporated businesses, (which includes the capital consumption of houses and nonprofit organizations) shown in Table 51 were combined with personal net saving in Table 17 to yield the gross saving of the noncorporate sector. (In addition, as noted below, the adjustment on grain transactions was also included in personal net saving.)

4. Inventory Valuation Adjustment

Aside from the residual error of estimate still two other components of the private sources of saving in Table 17 required allocation: an inventory valuation adjustment and an adjustment on grain transactions. The inventory valuation adjustment (I.V.A.), which reached a high of $643 million in 1951 but has since averaged less than $150 million or less than 3 per cent of National Saving, can be treated either as they are in Table 17, i.e., as statistical adjustment to book-values of savings resulting from price changes in book-values of inventories, or alternatively as an addition with changed sign, on the disposition side, to the value of the physical change in inventories which must be financed with the book-values of saving. In the National Accounts, the I.V.A. is applied to the sources of saving so that only saving in real terms is measured. If the I.V.A. were not applied to the sources of saving in the National Accounts, saving in real terms would be either overstated or understated to the extent that business profits would embody the effects of price changes on inventories. For this paper, however, as it was both expedient and, from a financing viewpoint, appropriate to view changes in book-values of inventories as a disposition of the book-values of saving, i.e., as a disposition of financial saving, the I.V.A. was deleted from the 'sources of saving' account, i.e., Table 17, and added with changed sign to the 'disposition of saving' account, i.e., Table 18. We were consequently not confronted with the problem of allocating the I.V.A. between corporate and noncorporate saving.

1/ See second paragraph of Footnote 1/ on page 38.

5. Adjustment on Grain Transactions

The adjustment on grain transactions (usually an even much smaller value than the I.V.A.) takes account of the accrued earnings of farm operators owed to, or by, the Canadian Wheat Board. This adjustment figure tends to cancel itself out over time and, for our purposes, is included as an addition to Net Personal Saving. Its inclusion there is consistent with its treatment in the National Accounts as part of the accrued net income of farm operators in National Income.

6. Gross Private Saving Equations

To sum up, then, we have in effect used equation 1 to arrive at the gross saving of the noncorporate sector and equation 2 for Gross Corporate Saving (with undistributed corporate profits being identified with Corporate Net Saving). Adding the Gross Noncorporate Saving to Gross Corporate Saving we arrive at Gross Private Saving. In the case of Gross Noncorporate Saving, however, we have in actual practice, combined equations 1 and 2 to arrive at our result. For in the National Accounts: Net Personal Saving is equal to personal disposable income less personal consumption expenditures; personal disposable income conceptually excludes income arising from capital consumption; and like personal capital consumption, all personal expenditures on investment, e.g., housing, is seen to take place in the 'business' sector. (In this connection, see National Accounts, 1926-1956, paras. 43 & 45; 59, 60 and 61.)

7. Gross Government Saving Equation

The surplus or deficit of governments as shown in Table 17 of the National Accounts fails to conform to any of our definitive equations of gross saving. Rather the government surplus or deficit appears to represent only the second half of equation 3: i.e., a surplus represents net resources loaned (or hoarded) and a deficit represents net resources borrowed from those outside the sector. Consequently, to arrive at the gross saving of governments we have added to the government surplus (+) or deficit (-) the amount of Gross Fixed Capital Formation (excluding defence expenditures) undertaken by governments. (This amount is found in the National Accounts either on line 4 of Table 2 or, for years prior to 1949, by deducting the amounts shown on line 6 from those on line 1 in Table 54.) The concept of Gross Government Saving in this paper thus accords in principle with our concept of Gross Corporate and Noncorporate Saving except for the fact that the changes in government inventories are not known and therefore are ignored. Having used equation 3 for Gross Government Saving, however, we are

not in a position to separate out of that gross saving its components of net saving and capital consumption.[1/]

Having thus defined Gross Government Saving in a way that is compatible with our concept of Gross Private Saving, we simply add together the figures for Gross Private Saving and Gross Government Saving to arrive at what this paper labels Gross National Saving. National Saving (excluding the residual error), as recorded in the National Accounts, is therefore less than our Gross National Saving by the amount of Gross Government Fixed Capital Formation and the I.V.A.

8. Residual Error of Estimate

Finally in our sources of saving, the residual error of estimate is simply ignored and thus excluded. In order to make our resulting sources of saving equal to their disposition, it is necessary therefore to reverse the sign of the error shown in Table 17 and add this amount to the error shown in Table 18, thus placing the whole statistical discrepancy between income and expenditure on the expenditure side of the National Accounts.

1/ As indicated in Footnote 1/ on page 38 imputed capital consumption allowances on government-owned buildings are included in capital consumption allowances of government business enterprises and thus in the capital consumption allowances of our corporate sector. Such allowances do not, however, include the capital consumption of government-owned machinery and equipment, roads, sewers, bridges, canals, etc. Thus the major part of government capital consumption allowances are not included anywhere in the National Accounts.

National Accounts' Saving Account
(Millions of dollars)

No.	Table 17 - Sources 1963	
48.	Personal Net Saving	2,631
49.	Business Gross Saving:	
	(a) Undistributed Corporate Profits	964
	(b) Capital Consumption Allowances and Miscellaneous Valuation Adjustments	5,124
	(c) Adjustment on Grain Transactions	136
50.	Inventory Valuation Adjustment	-184
51.	Government Surplus (+) or Deficit (-)	-735
52.	Residual Error of Estimate	-235
53.	Total Sources	7,701

No.	Table 18 - Disposition 1963	
54.	Business Gross Fixed Capital Formation	
	(a) New Residential Construction	1,705
	(b) New Non-Residential Construction	2,811
	(c) New Machinery and Equipment	2,979
55.	Value of Physical Change in Inventories	459
56.	Surplus (+) or Deficit (-) on Current Account with Non-Residents	-488
57.	Residual Error of Estimate	235
58.	Total Disposition	7,701

Saving Account Schema For This Paper
(Millions of Dollars)

No.	Sources 1963			No.	Disposition 1963		
1.	Personal Net Saving (48 Table 17)	2,631		16.	New Residential Construction (54a Table 18)	1,705	
2.	Adjustment on Grain Transactions (49c Table 17)	136		17.	New Non-Residential Construction (54b Table 18)	2,811	
3.	"Accrued" Net Personal Saving (1 + 2)		2,767	18.	New Machinery and Equipment (54c Table 18)	2,979	
4.	Noncorporate Capital Consumption Allowance and Miscellaneous Valuation Adjustments (Part of 49b Table 17 from Table 51 line 2)		1,744	19.	Business Gross Fixed Capital Formation (16 + 17 + 18)		7,495
5.	Gross Noncorporate Saving (3 + 4)		4,511	20.	Inventory Valuation Adjustment (50 Table 17 Sign Reversed)	184	
6.	Corporate Net Saving = Undistributed Corporation Profits (49a Table 17)	964		21.	Value of Physical Change in Inventories (55 Table 18)	459	
7.	Corporate Capital Consumption Allowance and Miscellaneous Valuation Adjustments (Remaining Part of 49 Table 17 from Table 51 lines 1 and 3)	3,380		22.	Book-Value Change in Inventories (20 + 21)		643
8.	Gross Corporate Saving (6 + 7)		4,344	23.	Gross Private Domestic Investment (19 + 22)		8,138
9.	Gross Private Saving (5 + 8)		8,855	24.	Government Gross Fixed Capital Formation (Table 54 line 1 minus last line)		1,817
10.	Government Gross Fixed Capital Formation (Table 54 line 1 minus last line)	1,817		25.	Total Statistical Discrepancy (52 Table 17 Sign Reversed + 57 Table 18)		470
11.	Government surplus (+) or deficit (-)(51 Table 17)	- 735		26.	Gross Domestic Investment (23 + 24 + 25) = Gross Domestic Saving		10,425
12.	Gross Government Saving (10 + 11)		1,082	27.	Surplus (+) or Deficit (-) on Current Account With Non-Residents (56 Table 18)		- 488
13.	Gross National Saving (9 + 12) = Gross National Investment		9,937	28.	Gross National Investment = Gross National Saving (26 + 27)		9,937
14.	Deficit (+) or Surplus (-) on Current Account with Non-Residents (56 Table 18, Sign Reversed)		488				
15.	Gross Domestic Saving (13 + 14) = Gross Domestic Investment		10,425				

TECHNICAL STUDIES

The following is a list of technical studies which have been prepared as background papers for the First Annual Review of the Economic Council of Canada. They are being published separately and are available from the Queen's Printer, Ottawa. Although they are being published under the auspices of the Economic Council, the views expressed in them are those of the authors themselves.

Staff Studies

1. Population and Labour Force Projections to 1970, by Frank T. Denton, Yoshiko Kasahara and Sylvia Ostry.
2. Potential Output, 1946 to 1970, by B. J. Drabble.
3. An Analysis of Post-War Unemployment, by Frank T. Denton and Sylvia Ostry.
4. Housing Demand to 1970, by Wolfgang M. Illing.
5. Business Investment to 1970, by Derek A. White.
6. Special Survey of Longer Range Investment Outlook and Planning in Business, by B. A. Keys.
7. Canada and World Trade, by M. G. Clark.
8. Export Projections to 1970, by J. R. Downs.
9. Federal Tax Revenues at Potential Output, 1960 and 1970, by D. J. Daly.
10. National Saving at Potential Output to 1970, by Frank Wildgen.
11. Changes in Agriculture to 1970, by John Dawson.

Special Studies

1. Immigration and Emigration of Professional and Skilled Manpower During the Post-War Period, by Louis Parai.
2. A Survey of Labour Market Conditions, Windsor, Ontario, 1964: A Case Study, by G. R. Horne, W. J. Gillen and R. A. Helling.

National Saving at Potential Output to 1970

by Frank Wildgen

Economic Council of Canada

1964