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SOME CONCEPTUAL PROBLEMS IN MEASURING
HOUSEHOLD SAVING

by

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Part I

The Importance of Measuring
Household Saving

CHAPTER I

Role of Saving in Economics

Empirical knowledge about the volume of saving and its behaviour through time is essential to policymakers. Research must provide detailed answers to questions such as — who are savers, in what form savings are accumulated, and through what channels do savings flow from units with excess savings to others who wish to invest in excess of their own saving. Fundamental to this is a knowledge about the determinants of saving. On such knowledge depends our understanding of economic processes. In other words, quantifying the saving function would greatly facilitate the formulation of effective short-term (stabilizing) policies and long-term (growth) policies.

Turning to economic theory for a definition of saving we find that it is impossible to define the term without using the concepts of income, consumption or capital. However, it is possible to make the following statements among others:

Saving is income less consumption.

Saving is unconsumed income.

Saving is net addition to capital.

Saving is forgone present consumption that is intended for future consumption.

In some ways the most basic statement is the last one. If consumption is the ultimate aim of economic man, then defining saving in terms of consumption seems to make most sense. These statements make it clear that the saving process is a flow; we are considering income, consumption, increase of capital, etc. over a period of time.

The time dimension is vitally involved in the concept of saving. The rationale of saving can only be explained by savers preferring future over present consumption. Usually present consumption is exchanged for more (larger) future consumption. Because present needs and wants are more immediate and pressing than future wants, consumption will be postponed only if a reward in terms of additional consumption in the future is offered.

Throughout the history of economic thought there has been general agreement about these basic features of saving that were discussed above. However, a major change has occurred in the causal sequence attributed to economic events and the role of saving in these events. Very roughly, in classical theory saving and investment were considered to be closely connected if not identical acts. Thus saving was a complicated function of the interest rate, the level of prices via the state of investment opportunities etc.¹ Saving and investment in turn determined the level of income.

1. M. Blaug, Economic Theory in Retrospect (Homewood, Ill., 1962), p. 145.

Keynesian theory turned this around, and considers saving a function of income. Saving and investment (although equal by definition for the total economy) are separate acts performed by different people who are motivated by diverse forces. Investment determines the level of income; income and the propensity to consume determine consumption and saving. Saving in the macro sense is a passive factor that through income fluctuations adjusts to "fit" the situation.¹ In the micro sense saving is a residual, it is "left over income". Keynesian economics have deprived saving of any motivations of its own. Considering that saving is future consumption, it is difficult to see why present consumption alone is an independent force and postponed consumption plays only a residual and passive role. It is possible that the static nature of Keynes's analysis made it impossible to incorporate saving into the system as a full-fledged variable. Saving is by its nature a non-static concept. It involves time and reflects the individuals plans and views about his future.

Keynes defines saving and investment in his General Theory in such a way that the total saving in the economy must always equal total investment in the same period of time. Volumes have been written about this and Keynes's insistence that there is a process required to bring saving and investment equality about. Whether $S=I$ is an equilibrium condition or a truism was widely debated. By now the futile discussion about what Keynes really meant has died down and

1. This is a very elementary exposition of Keynesian theory that ignores many of the later refinements and modifications.

an accepted explanation is that actual or ex-post savings always equal ex-post investment. On the other hand, ex-ante or intended S and I may not be equal and a process will be set in motion by this inequality that will make ex-ante S and ex-ante I equal working through fluctuations in the income level. However, this is not the only possible explanation about the adjustment process and other explanations run in terms of period analysis (savings in present period are determined by income in previous period), etc.¹

Classical theory viewed the interest rate as an integral part of the saving-investment process and it may be said to have culminated in Fisher's lucid exposition where the rate of interest strikes the balance between the individuals' impatience to spend income and the investment opportunities open to them.

Keynes in The General Theory treats the interest rate as a purely monetary phenomenon; the liquidity preference schedule that is jointly determined by the quantity of money and the interest rate is not clearly connected with the saving process. Interest has become a reward for parting with liquidity and not a reward for waiting or not consuming. Later attempts to bridge this gap incorporate hoarding and change in the money supply with the savings and investment schedules to show how savings and investment is interrelated with the supply and demand of credit — the Keynesian determinants of the interest rate.

1. G. Haberler, Prosperity and Depression (London, 1958), pp. 170 ff.

Keynesian theory implies that individuals make decisions about consuming and saving first, and here the important variable is the size of income. At a separate and unconnected stage the decisions are made whether to hoard — increase money balances for speculative purposes — or to invest (here the term "invest" is used mainly in the financial sense although some direct investment in the economic sense may also be involved). The possibility is not open that the decision making process is a joint one, i.e. that the individual makes the choice between current consumption, holdings of money, durables and financial investments simultaneously. Such a process would, of course, give the interest rate, prices, and real asset balances far greater weight in the consumption — saving decision, but it will also to some extent obscure the rigid division between the saving and investment decisions that has been maintained in post-classical economics as an absolutely necessary analytical tool.

Although in many ways Keynesian theory deals very unsatisfactorily with the problem of saving, it paradoxically also was responsible for a great upsurge of interest in consumption-saving behaviour of individuals. The marginal propensity to save through its inverse, the multiplier, had become a crucial parameter of the system. Keynes claimed that his assertions that the marginal propensity to consume was positive, less than 1 and a diminishing function of income, were based on a psychological law observed in

human behaviour.¹ The testing of these propositions has provided scope for a number of empirical studies. The findings of these studies may be summarized as follows:

- a) In cross-section data or budget studies the marginal propensity to consume behaves indeed as predicted by Keynes.
- b) In time series the ratio of aggregate saving to aggregate income has been found roughly constant over time; in spite of increases in income the average saving propensity has not risen as could have been expected if the marginal propensity to save is an increasing function of income.
- c) Aggregate saving and income data from time series yield higher estimates of the marginal propensity to consume than budget studies.

The apparent contradictions between theory and empirical findings and differences in various sets of empirical estimates can be explained away by methodological arguments.

In the first place, the conditions of ceteris paribus cannot be expected to hold for long periods of time. The observed constancy of saving ratios over time may be the net result of changing conditions that have had a depressing effect on the propensity to save (e.g. urbanization, technological progress, etc.) and the effect of rising incomes on saving propensities. This explanation would take care of point b).

1. J.M. Keynes, General Theory of Employment, Interest and Money (New York, 1936), pp. 96 and 120.

The failure to use a system of equations reflecting the two-way causation between aggregate consumption and aggregate income will produce discrepancies in the functions estimated from time series and cross-section data. If the consumption function is estimated from time series without taking into account the income identity (since spending causes income), marginal propensity to consume will be overestimated.¹

Another technical complication arises from aggregating non-linear consumption functions. It has been shown that in this case the aggregate function will not be equal to the individual functions, although all individuals had identical functions and only different incomes.² These mathematical complications can go a long way towards explaining the discrepancies between the propensities derived from cross-section and time series data.

However, these discrepancies as well as basic dissatisfaction with Keynes's consumption function led to the formulation of new and more elaborate hypotheses. The "permanent income" type consumption functions, and here I mean Friedman's consumption function³ and the life cycle models originated by Modigliani

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1. S. Valavanis, Econometrics (Toronto, 1959), pp. 63-75.
 2. Valavanis, pp. 192-195 and J. Marschack, Income, Employment and the Price Level (New York, 1951), pp. 10.27 - 11.31.
 3. Mr. Friedman, A Theory of the Consumption Function (Princeton, 1957).

et al.,¹ can certainly be more easily related to Fisher's view about saving; individuals' behaviour is again explained in terms of rearranging the flow of consumption over time. These hypotheses assume individuals to have expectations and to behave in a rational way in the light of these expectations. The empirical testing of these theories has, however, become far more difficult because some of the crucial variables are not measurable in the ordinary sense. Nevertheless, implications of the theories can be tested and evidence collected that will support or contradict these hypotheses.

This paper will deal with problems of measuring actual, realized or ex-post savings. Theoretically, of course, only the causal or functional relationships are of interest, and these are expressed in intended, planned or ex-ante savings. Direct measurement of ex-ante savings and other relevant ex-ante variables is not possible by the usual techniques of measurement.² However, through continuous observations of actual saving behaviour insights can be gained into the underlying functional relationships. If actual saving is observed under varying conditions, it is possible to test hypotheses about functional relationships using ex-post data. In case of time series observations the varying conditions are expressed in changing levels of economic activity; in case of cross-section data

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1. F. Modigliani and R.E. Brumberg, "Utility Analysis and the Consumption Function," Post Keynesian Economics, ed. K.K. Kurihara (New Brunswick, 1954), pp. 388-436.
F. Modigliani and A. Ando, "The 'Permanent Income' and the 'Life Cycle Hypotheses of Saving Behavior: Comparisons and Tests,'" Proceedings of the Conference on Consumption and Saving, ed. I. Friend and R. Jones (Philadelphia, 1960), II, 49-174.
 2. Although attempts to measure attitudes, expectations and buying intentions employ techniques that may eventually lead to direct measurement of ex-ante variables.

observations on savings behaviour at different levels of income, in different age groups, etc. provide the variety needed for testing assumptions about the influence of these variables. So although measurement problems deal with ex-post phenomena, the results of measurement may be used for estimating ex-ante relationships such as the saving function.

If a savings function exists — "in the sense of a reasonably stable and close quantitative relation between saving and small number of other variables",¹ there is a much better chance of specifying these relationships by examining and measuring the behaviour of homogeneous groups in the economy. The grouping of all individuals is perhaps only the first step in this direction; for some purposes further subdividing of the sector may become necessary. The grouping of households should be viewed as the minimum requirement and a starting point in a systematic investigation into how saving decisions are made.

Also intellectually it may be more satisfying to examine the relationship between saving and other variables for individuals rather than for other sectors of the economy. Reasons given by Kuznets about the importance of the personal income distribution seem relevant here:

Since this distribution (personal) is a focal point at which the functioning of the economic system impinges upon the human beings who are the living

1. R.W. Goldsmith, A Study of Saving in the United States (Princeton, 1958), III, 416.

members of society and for whom and through whom society operates, it is an important datum for understanding the reactions and behaviour patterns of human beings as producers, consumers and savers.¹

The choice of terminology whether to call the saving of this group the saving of individuals, consumer saving, family saving, household saving etc. is a rather difficult one as none of these standard terms convey quite satisfactorily the meaning of the concept we wish to examine. We are talking about saving of individuals in their personal capacity (as apart from their decisions as businessmen). However, measuring income and consumption makes sense only on a family or spending unit basis, because most consumption decisions made by members of such units are usually interdependent. Although some forms of saving are obviously motivated in the same fashion as consumption decisions, e.g. saving by increasing the equity in owner occupied houses, it is not clear that this holds true to the same extent for all saving decisions. No research has been done in this area, but it would seem quite possible on an a priori basis that not all saving decisions are as interdependent among members of a consumer unit as consumption decisions. This view is possible, of course, only if saving is not regarded as a mere residual. Here the juxtaposition of the time dimension that saving has and the impermanency of the family or spending unit may lead to independent individual behaviour.

1. S. Kuznets, "Economic Growth and Income Inequality," American Economic Review, XLV (March, 1955), p. 27.

In the light of these difficulties it will be left intentionally vague what the unit of observation should be, and an arbitrary choice will be made among the terms above. For the purposes of this paper the term household saving will be used.¹ Apart from the interest economic theory has in measuring household saving as a means to discovering some universal rules about human behaviour in this area, it is also of great importance to economic policy making. In an ultimate sense all saving in the economy is done by individuals. However, a substantial share of total saving is saved directly by individuals. Although this may be on the whole a relatively stable component of total saving, an understanding of its behaviour over time, its interrelationship with other saving components, etc. are of vital importance for framing economic policy.

1. This will also distinguish the ideal concept reflecting saving decisions of individuals from actual data available. The closest concept available in the National Accounts is designated as "personal saving" and the National Transaction Accounts call the same concept "consumer saving". It should be noted that here the term "household" is used in a somewhat different meaning than in official statistics.

CHAPTER II

A Scheme for Measuring Saving by Sectors

Although it is assumed that our ultimate aim is to examine the functional relationships that determine saving, this paper, being limited in scope, will attempt only to prepare the ground for measuring the ex-post manifestations of the saving process. To do this in a systematic fashion, a framework is required that would allow the splitting up of the economy into sectors and then the examination of different forms of saving for each sector. From the relationships that exist between units with excess and units with deficit saving a simple scheme is developed that permits an aggregation of all units (or all sectors) into a whole that is meaningful in the context of the standard definitions of saving and investment.

It follows from the definitions quoted in Chapter I that saving can be measured by two approaches:

- (1) as a flow - the difference between income and consumption during a given time period, or
- (2) as a change in stocks¹ - the change in net worth (i.e. change in assets minus changes in liabilities) between two points of time.

1. There are actually two alternative ways for measuring the change in stocks: (a) as changes in balance sheet totals, or (b) as purchases and sales of tangibles and claims. For this reason the "flow" and "stock" distinction is not always completely unambiguous.

Both approaches will yield identical results¹ as long as:

- a) treatment of items (transactions) is consistent, and
- b) the time periods coincide.

The latter requirement is obvious. The following example illustrates what is meant by consistency in treatment. If consumer durables are viewed as investment, expenditure on durables is excluded from consumption expenditure in the income minus consumption approach. In the comparative balance sheet approach consumer durables must then appear as assets on the balance sheet. Some of the methodological problems connected with the two alternative approaches of measuring saving will be discussed in Chapter VII. Here the topic is only introduced because of its relevance for developing a scheme for measuring (a) saving by sectors, and (b) saving by components.

If saving is measured in a closed economy in aggregate it will be equal to the net increase in capital goods or the real investment during the period.² All financial claims will cancel out and saving, by definition the unconsumed portion of output, will be found as tangible assets or goods -- very few services can be stored, so these can be ignored. Real investment equals (or is) aggregate saving.

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- 1. Complications arising out of valuation problems (particularly unrealized capital gains) will be ignored in the following discussion.
 - 2. For arguments as to why the definition of capital formation should be restricted to reproducible capital goods and should exclude natural resources, see S. Kuznets, Capital in the American Economy (Princeton, 1961), pp. 17-19.

On the other hand, for units or groups of units within the economy saving cannot be measured by the change in real assets, because each unit does not necessarily want to hold all its saving in tangible assets but may decide to transfer the claim on such goods to other users in exchange for financial claims. Any unit in the economy may decide to hold a stock of tangible goods (capital goods) either in excess of or less than its accumulated savings. Even in an exchange economy it is possible to visualize the process of borrowing and lending of tangible goods against claims. Claims are a product of the process through which the matching of saving and investment is achieved. Only in an economy where each unit is satisfied (or forced) to hold its stock of unconsumed goods — no more and no less — would financial claims be non-existent.

Financial claims will not cancel out for a subsection of the economy because savers and capital users are not necessarily identical units. Measuring saving by the comparative balance sheet method for a sector requires full accounting for changes in tangible assets of the sector as well as changes in claims and obligations.

The term financial claims is used here in its broadest sense and includes equity as well as debt claims. It may be more correct to call this category intangible assets and restrict the use of "claims" to debt instruments. However, for purposes of this general discussion the interest is only in the transfer of funds from surplus to deficit units and the exact form of the quid pro quo is irrelevant.

In a monetary economy units usually receive their income in the form of money claims which represent potential consumption. A unit's saving consists of the unexercised portion of these claims. For units or groups of units saving can be measured only in terms of these unexercised money claims using the "income-minus-consumption" approach. However, for the closed system as a whole income and consumption may be measured without ambiguity in terms of real goods and services, the difference between the two flows also being simply tangible goods.

Considering the origin of financial claims it is obvious that for each unit the sum total of its real investment undertaken and net claims acquired during a period will equal the saving of this unit. All these relationships are reflections of the definitions and are discussed here strictly in their ex-post manifestations. As pointed out earlier, measurement can only deal directly with ex-post concepts.

Up to this point we have dealt with a world where only self-finance or direct finance exists,¹ i.e. where either each unit balances its budget by making consumption and investment expenditure equal to its income or where surplus units lend their free resources (or command over resources) to deficit units directly. In an economy with financial intermediaries a further complication enters the picture — these institutions engage in indirect finance by receiving

1. J.G. Gurley and E.S. Shaw, "Financial Aspects of Economic Development," American Economic Review, XLV (September, 1955), pp. 515-538.

funds from surplus units and issuing their own securities in exchange, then in turn lending funds to capital users and receiving the securities of these units in exchange. The relationships depicted in Chart I still hold — all claims cancel out in total and for each unit or sector the net change in claims plus investment in real assets equals its saving. The absolute sum of all securities outstanding on the other hand may increase manifold.

In a monetized economy we find that the transfer of resources from savers to investors takes place in the form of transferring funds or money claims. In considering the flow of funds between units and sectors it becomes necessary to modify the simple framework set up above. The flow of funds includes transfers of existing capital goods. These transactions cancel out for the whole economy, but for a unit or sector the purchase of an existing rather than a new capital good is also a way to utilize saving. So a unit or sector can utilize its saving in three ways:

- a) new capital goods
- b) used capital goods
- c) net claims against other units or sectors

The last two forms of saving (b and c) are irrelevant from the point of view of society's total aggregate saving and enter the picture only when some disaggregation of the economy is considered.

CHART I

Utilization of Saving by Sectors.

\$ MILLIONS

Households Business Government Rest of the World All Sectors

The chart represents approximately the utilization of Canadian saving in 1954.
Sources: NTA and adjustments as shown in Table F, page 46. For purposes of illustration it was assumed that balances in category D in the NTA represented transfers of existing assets, although in fact errors and other items form also part of D.

A difficulty has been created by the use of the word "claims". The explanation runs in terms of financial claims and money claims as if these were two distinct categories. This, of course, is not true and money claims are only the most liquid type of claims. There is an array of claims which can be ranked in terms of their degree of liquidity.

However, for analytical purposes this artificial dichotomy is useful and conforms to the standard Keynesian and neoclassical analysis where an economic unit is supposed to make a choice between goods, bonds and money.¹ Gurley and Shaw point out that the dichotomy between bonds and money is in a sense a false one, in a system with well developed financial intermediaries money has many close substitutes (except as a means of payment and for transaction balances).²

We here attempt to examine separately the saving of individuals in their personal capacity. Savings of the personal sector in the National Accounts include beside such individual saving other components which definitely should not be included as savings of individuals (e.g. savings of non-commercial institutions) or where it is debatable whether the component should be regarded as household saving (e.g. growth in pension and insurance funds).

1. Although as elements in the interest determination process the three categories are not given equal emphasis. See D. Patinkin, "Liquidity Preference and Loanable Funds: Stock and Flow Analysis," Economica XXV (November, 1958), pp. 301-318.

2. Gurley and Shaw, American Economic Review, XLV, p. 522.

The saving of the household sector involve a lower level of aggregation than is commonly used in the standard social account system. Some of the specific problems arising out of this sectoring aspect will be discussed in Part III.

CHAPTER III

The Importance of Canadian Households - as Suppliers of Saving

To get an idea about the relative importance of household saving in Canada in the total saving and investment picture, one has to fall back on the estimates of "personal saving" in the National Accounts. Although these estimates are far from ideal in appraising the contribution of individuals to the saving process — the differences in concepts and treatment will be discussed below — they will serve as a starting point to the discussion. In fact, this is the only series even roughly reflecting the magnitude of household saving that has been produced for any length of time.

When depression and war years are excluded, total saving in Canada has fluctuated around a level slightly over 25 per cent of Gross Domestic Product.¹ In these figures saving includes a component of foreign saving (excess of imports of goods and services over exports)² and is measured on a "gross" basis — including depreciation allowances. Also government saving is defined as government surplus or deficit plus government non-defense investment,

1. Appendix, Table 1.

2. This component is substantially underestimated because retained earnings and depreciation allowances accruing to non-residents are included in business gross saving.

to adjust for the treatment of all government expenditures as consumption. The Canadian ratio of total supply of gross savings available for investment in relation to Gross Domestic Product is one of the highest among industrially developed countries.¹

In postwar years personal (net) saving has averaged approximately 5 per cent of Gross Domestic Product or approximately a fifth of total gross domestic saving. This picture of the importance of personal saving is, however, misleading to the extent that the National Accounts treat all depreciable assets as belonging in the business sector,² so the depreciation allowances that form the major part of gross business saving² contain the depreciation allowances on owner-occupied houses. If this portion of depreciation allowances were transferred into the personal sector, personal saving on a gross basis would account for more of total gross saving. A rough estimate indicates that the magnitude of this item at present

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1. United Nations, World Economic Survey, 1960 (New York, 1961), p. 19. Canada is listed as ranking fifth in this respect after Norway, Australia, Japan and Finland for the period 1950-1959. When ranked by the ratio of gross national saving (excluding foreign saving) to GDP, Canada places seventh from the top on a list of 16 most developed countries. There is some confusion in the literature in the usage of the terms "domestic" and "national" saving. The UN uses "domestic" saving to denote the sum of personal, business and government saving (excluding foreign saving). This paper will rather follow the practice of equating gross domestic investment with gross domestic saving, i.e. national saving excludes the foreign component and domestic saving includes it.
 2. E.g., for the years 1961, 1962, 1963 depreciation allowances make up more than 85 per cent of gross business saving. DBS, National Accounts: Income and Expenditure 1963.

is about \$300 million.¹ This would raise the share of personal gross saving to roughly a quarter of total gross saving.

It may be more meaningful to look at the share the personal sector contributes to total net domestic saving for some purposes; for example, to examine the growth of capital in the economy. On a net basis personal saving accounts for at least a quarter of total saving and in some years for over fifty per cent.²

The estimates quoted are unfortunately not identical with the concept of household saving described above. The main differences in sector coverage and treatment of items will be listed in two groups:³

1. Those that are likely to make personal saving larger than household saving.
 2. Those that are likely to make personal saving smaller than household saving.
1. (a) Inclusion of private non-commercial institutions in the
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1. DBS, National Accounts Division. Unpublished data indicate that annual capital consumption allowances on all residential housing amount to approximately \$.5 billion. Assuming 60 per cent home-ownership yields an estimate of \$300 million.
 2. Appendix, Table 2.
 3. Detailed discussion and justification for the suggested differences in treatment will follow.

personal sector.¹

- (b) Treatment of net profits of unincorporated business as having been paid out in full to its owners; no retained earnings accrue to unincorporated business in the business sector.
 - (c) Inclusion of net increases in pension and insurance funds in personal saving.
- 2. (a) Treatment of consumer durables as consumption expenditure.
 - (b) Allocation of depreciation allowances on owner-occupied property to the business sector.²

It is impossible to guess at this stage what the net results of these adjustments would be. When it is taken into consideration, however, that no satisfactory estimates can be made of item 1(b)³ and it is desirable to leave item 1(c)⁴ in the household sector, then the three adjustments which can and should be made— 1a, 2a and 2b — may on balance have the effect of increasing saving of individuals, and household saving would emerge as an even more important component of total saving than present data indicate.

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- 1. These institutions add to personal saving only so far as they are in receipt of investment income or of grants and donations from outside the personal sector. By definition they make no "profit" on their operations.
 - 2. See p. 21 above.
 - 3. See Chapter VIII below.
 - 4. See Chapters VI and IX below.

For the years 1946-1954 National Transaction Accounts¹ have been compiled and it is possible to evaluate the role of individuals as net suppliers of savings to other sectors. With the economy divided into eleven sectors, consumers were in eight out of the nine years the largest surplus-saving sector in the economy.² The government sector also shows for seven out of the nine years a surplus of saving over investment. This phenomenon is obviously a reflection of fiscal policy during the period; the federal government had substantial budgetary surpluses in 1947-1953. Non-financial business, on the other hand, is the most important deficit sector, investing far more than it saves. This evidence indicates that households are consistently the most important suppliers of investment funds in the economy.

Again, this statement has to be qualified; although the NTA use a finer sectoring system in respect to income and expenditure accounts, the principles used in estimating consumer saving are

1. L.M. Read, S.J. Handfield-Jones and F.W. Emmerson, "A Presentation of Transaction Accounts for Canada" published in Wm. C. Hood, Financing of Economic Activity in Canada (Ottawa, 1957). "The object of this system is to record all economic transactions taking place in the national economy." (p. 467). All subsequent references to this study will be made in the abbreviated form "NTA".

2. For the period 1946 to 1954 the major sectors of Canadian economy generated the following balances of saving over investment:

millions of dollars	
Consumers	8714
Non-financial business	- 13052
Financial business	177
Government	3547
Rest of the world	614

Source: Appendix, Table 3.

exactly the same as those used to compile personal saving estimates in the National Accounts (although using different methods),¹ so the same reservations apply.² A serious distortion of what this writer would consider as excess of household saving over investment is caused by treating investment in owner-occupied houses as business investment. If adjustments were made on those lines the positive figures for the consumer sector in Appendix Table 3 will be reduced, and also the negative estimates for unincorporated business will be reduced or may even become positive.

Although the estimates of surplus saving for consumers in Appendix Table 3 are higher than justified under our definition of the household sector, it is still certain that consumers are the most important private group of suppliers of investment funds to other sectors, particularly to business.

Summary

If it is admitted that quantifying of the saving function is an important step towards a better understanding of economic processes in this country and towards more effective economic policy, it can be argued that the first attack should be directed towards the household sector. To do this, a suitable measure of household saving is needed. To summarize the main arguments why measuring of household saving is important:

1. NTA, pp. 471 and 474.

2. See pp. 22-23 above.

- i) Personal saving — which is closely related to household saving — comprise approximately a quarter of the total supply of saving in Canada (measured on a gross basis). On a net basis in some years personal saving accounts for half of net domestic saving.
- ii) Households are the most important surplus sector, i.e. their saving consistently exceed investment and this surplus is made available to other deficit sectors in the economy.
- iii) For purposes of specifying functional relationships that would identify the most important variables that determine saving, the division of the economy into sectors is necessary. Each sector should be homogeneous as to its motivations and behaviour in respect to saving. The household sector forms such a reasonably homogeneous sector.

At present none of the aggregate or macro measures of saving available in Canada fulfill the requirements outlined in point

iii).

Part II

Composition of Canadian
Household Saving

CHAPTER IV

Household Investment in Real Estate

The three ways of utilizing saving — new capital goods, used capital goods, and claims — are only broad categories, for many analytical purposes a finer breakdown of the categories seems necessary. Financial claims constitute a very heterogeneous group while the content of the other two categories is considerably more homogeneous. If household savings are defined as savings accruing to individuals in their personal capacity, excluding all business activity, the type of real assets to be considered as investment is basically limited to:

- a) owner-occupied houses, and
- b) consumer durables.

A good argument can be made also for the inclusion of ownership of other real property held for investment purposes. However, then a complex and rather arbitrary decision has to be made. When does an individual cease to be a consumer holding some of his saving in the form of rental housing or other real assets (as a secondary activity), and when does he become a business proprietor? Any decision about this point is clearly arbitrary. Rather than erring in the other direction and including too much in household saving, only investment in owner-occupied housing will be included here.

Canadian data are completely inadequate for the purpose of examining household saving in the framework suggested above. Our aggregate data originates in the National Accounts and because households are considered final users in the social accounts, they do not invest and it is not possible to examine the breakdown of total household savings by the way they utilize their saving (investment in new real assets, used real assets and claims). Even for the years 1946-1954, for which the National Transaction Accounts give considerable detail about the financial investment of consumers, the maintenance of the social accounting conventions that consumers do not invest and unincorporated business does not save obscures the picture.

An attempt will be made to relax the first of these assumptions and adjust the NTA data for consumer direct investment in housing and durables. The adjustments are frequently based on very poor data and the results have no claim to any degree of reliability. The purpose of the exercise is only to give an illustration about the relative importance of the various savings components and suggest the possible magnitudes involved.

The text accompanying the NTA indicates that the estimates for the consumer and unincorporated business sector are very weak.¹ The separation of these two sectors is conceptually extremely difficult

1. NTA, p. 492.

and several arbitrary decisions have to be made to serve as guides in measuring the relevant variables.¹ No attempt will be made to relax the second assumption — that unincorporated business does not save, i.e. all net earnings are distributed to their owners. Rather the NTA approach will be followed: that the complete distribution of earnings takes place and owners then reinvest enough of the funds to finance the increase in clearly identifiable business assets or decrease in business debts. This reinvestment shows up as an increase in financial claims against unincorporated business, but because of the residual nature of the estimation procedure it also reflects all errors and omissions in identifying business assets and debts.

The household sector is also left unadjusted for investment income of life insurance companies and non-profit organizations which in the National Accounts and in NTA is considered to be accruing to individuals directly.

Lack of data about annual investment in owner-occupied houses is the main obstacle in making any reliable estimates of the size of real investment undertaken by households. Official estimates exist of the total annual investment in new residential housing.²

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1. As an example of the difficulties involved see page 28 above.
 2. DBS, National Accounts, Income and Expenditure. To the figure published in Table 2 as part of gross business capital formation the residential construction by government has to be added (from Table 54, Reconciliation Statement) to arrive at total residential construction expenditure. The latter includes the cost of new dwellings, major alterations and improvements and supplementary costs, but excludes repair and maintenance.

The NTA estimate the public investment and corporate business components of this total. However, column 3 in the following table still includes substantial amounts representing investment in tenant-occupied housing (either by individuals or unincorporated business).

TABLE A

Annual Investment in New Residential
Housing, Canada 1946-1954

	Total investment in residential construction	Investment by governments and incorporated business	Investment by home-owners and unincorporated business
	(millions of dollars)		
1946	407	72	335
1947	526	59	467
1948	635	95	540
1949	822	109	713
1950	923	100	823
1951	947	102	845
1952	971	98	873
1953	1189	97	1092
1954	1238	80	1158

Source: NTA, Gross Fixed Capital Formation (residential),
p. 660.

By making assumptions about the occupancy of new houses by type, by owners or tenants, the following crude estimates were

constructed using Firestone's data¹ for 1946-47 and unpublished data from DBS were used for 1948-54.

TABLE B

Estimates of Annual Investment
in Owner-Occupied Housing, Canada 1949-1954

(millions of dollars)

1946	333
1947	425
1948	470
1949	585
1950	653
1951	607
1952	606
1953	762
1954	810

Source: See Appendix, Table 4 for sources and methods.

Note: Because estimates for 1946-47 were made independently from another source, the differences between Table B and last column in Table A for these years may not realistically reflect the component of new rental residential construction.

It may seem peculiar that no reliable official estimates exist about this item in Canada, but Goldsmith dealing with United

1. O.J. Firestone, Residential Real Estate in Canada (Toronto, 1951).

States data finds the same deficiency:

Although it may seem astonishing in view of the importance of the subject, there are practically no data on the distribution of ownership of real estate among the various groups of private owners, particularly among individuals, unincorporated business enterprises, and corporations. ¹

The difficulties in obtaining an annual breakdown on this basis are considerable, because the ultimate use of a newly constructed house is not necessarily determined at the time that the physical investment takes place. The house may be sold to an owner-occupant, or it may be rented out by the builder, or sold by the builder and rented out by the new owner. Ideally annual flow figures should reflect (and to a large extent they do) the physical investment process, but because the ultimate use is not always determined at this time — statistics reflecting the combination of these two processes are impossible to obtain without making some simplifying assumptions. On the other hand, no such difficulty exists in connection with the stock of housing. Here only a clearly defined and relatively small category — vacant houses — reflect the existence of houses "in limbo".

If utilization of consumer saving in the NTA is adjusted by the amount of investment in housing, two corollaries follow: (a) a corresponding portion of depreciation allowances must be shifted from the unincorporated business sector into the consumer sector, and (b) mortgage liabilities also have to be correspondingly adjusted between the two sectors.

1. Goldsmith, A Study of Saving . . ., II, 374.

In order to analyse the utilization of household gross saving depreciation allowances have to be added back into personal saving.¹ Again no published official estimates are available about the magnitude of annual depreciation on owner-occupied houses. Firestone's estimates of annual depreciation on all residential housing have been adjusted down by the estimated amount on rental residential housing and thus estimates for 1946-49 were obtained. Using 1949 as a base, a projection forward, utilizing annual investment figures from Table B, yielded estimates for 1950-54. The method is extremely crude, but the results seem to be not incompatible with other unpublished estimates for total depreciation on all residential housing.

-
1. As already discussed in Chapter III, pp. 21-22. The saving figure was basically estimated by the income minus consumption approach and depreciation allowances on owner-occupied houses were implicitly deducted. The consumption expenditure of persons includes imputed rent on owner-occupied houses as expense; net income (including net profits on owner-occupied houses) from unincorporated business is included in personal income. "Net profit" on owner-occupied houses equals revenue (imputed rent) less expenditure (depreciation allowances and other operating expenses). So imputed rent enters person's account on both sides and is washed out. Depreciation and other operating expenses are in fact implicitly deducted from saving.

TABLE C

Estimated Annual Depreciation Allowances
on Owner-Occupied Housing, Canada, 1946-1954

(millions of dollars)

1946	122
1947	140
1948	165
1949	178
1950	190
1951	204
1952	216
1953	228
1954	243

Source: See Appendix, Table 5 sources and methods.

Prorating the increase in mortgage liabilities between consumers and unincorporated business, on the basis of the ratio of estimated investment in owner-occupied housing to all investment in construction, yields the following estimates.¹

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1. The increase in mortgage liabilities is, in fact, a net figure and includes, besides new mortgages on new property bought, also increases and decreases in mortgage liabilities on existing property. The prorating method is difficult to justify on any other grounds than lack of data (on repayments, retirements, refinancing of existing mortgages etc.) that would permit other more realistic assumptions. To emphasize how tenuous these estimates are — even the figure that is being prorated, the estimate of net mortgage borrowing by the unincorporated business sector, is a residual figure and may contain numerous errors. See NTA, p. 571.

TABLE D

Estimated Increase in Mortgage Liabilities
on Owner-Occupied Houses, Canada, 1949-1954

(millions of dollars)

1946	76
1947	91
1948	126
1949	148
1950	189
1951	144
1952	135
1953	196
1954	296

Source: See Appendix, Table 6 for sources and methods.

Considerably better data exist on investment in consumer durables. The estimates of consumer expenditure on goods and services in the National Accounts show durable goods, non-durable goods and services components. The durable goods category is further subdivided into major durable goods and miscellaneous durable goods.¹ For purposes of this paper the estimates of

1. DBS, National Accounts, Income and Expenditure, Table 47. The major durables category includes house trailers, new automobiles, net expenditure on used automobiles, home furnishings, furniture, appliances, radios and television sets.

expenditure on major durable goods will be equated with the investment of households in durables. These figures again do not fit exactly the ideal concept. For example, they include net expenditures on used automobiles — a transfer of existing capital goods and not investment in new real assets.¹ No attempt is made here to separate out this item, particularly considering the difficulties by the other transfers of existing goods discussed in the next section.

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1. Actually net expenditure on used automobiles reflects two components: the dealers' gross margin on the transactions, and the net flow of used vehicles between the business and consumer sector. It is only the second component that is objectionable from our point of view (because we wish to segregate new from used investment goods), the dealers margin may be regarded as the cost of services rendered. See footnote 1 p. 43 below re Goldsmith's view on dealers fees.

TABLE E

Estimated Annual Investment in
Consumer Durables by Households;
Canada, 1946-1954

(millions of dollars)

1946	465
1947	707
1948	756
1949	960
1950	1255
1951	1292
1952	1577
1953	1758
1954	1731

Source: DBS, National Accounts, Income and Expenditure, Table 47 - major durables.

As long as the analysis runs in terms of household gross saving, no estimates of depreciation on durables are required.¹

Ownership of consumer durables is frequently an alternative to paying for commercially produced services, so the consumer is likely to attribute some return to owning these goods. The

1. The asymmetry in adjusting for depreciation on owner-occupied houses and on durables originates in the difference in treatment of these two items in the National Accounts.

assumption that consumers are final users of goods and services and do not engage in production has been basically relaxed in the case of owner-occupied houses, although formally the convention is maintained.

The size of the stock of consumer durables is certain to have some effect on the output of an economy. Although not as directly measurable as the productivity of producer durables, it does not seem too far-fetched to regard consumer durables as capital goods.¹

Consumer durables, on the average, have shorter useful lives than houses and a degree of arbitrariness enters the decision "where to draw the line between durables and non-durable goods and between consumer durables and producer durables".² This arbitrariness is the most frequently used argument in favour of treating all expenditure on consumer goods as consumption. It may be true that some goods like clothing that are normally excluded from the durables category, have a longer life than some "durables". Nevertheless,

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1. It has been argued that implicit rates of return on consumer durables are extremely high. See J.V. Poapst and W.C. Waters, "Individual Investment: Canadian Experience," The Journal of Finance, XVIII (December, 1963), pp. 647-665.
 2. Goldsmith, A Study of Saving . . ., II, 412.

this is not a valid argument for treating all consumer goods as consumption. In principle it is agreed that all stocks of consumer goods that have not had all their usefulness and value exhausted in the current period should be considered as investment. Then it is certainly better to err slightly and be wrong for borderline cases rather than throw a large section of expenditures into the wrong category.

Sometimes it is also argued that because of the relatively short life of most consumer durables, it would not make much difference whether gross investment in durables less depreciation were added to personal saving or not. The effect of such a treatment on consumption would be simply to lag the series by a few years. However, the exact effects depend on the differences in the rates of growth of saving, consumption and expenditures on consumer durables.

Another argument against considering consumer durables as investment concerns the marketability of the type of assets involved. Usually it is possible to sell a house without too long a delay and without taking a severe capital loss. For used consumer durables (with the exception of cars) no organized market exists and in many cases no cash can be obtained at all. It is not clear whether the marketability argument is relevant for the saving concept or not. Some other forms of saving, like pensions and insurance, are highly illiquid but form nevertheless part of saving.

Another related but more sophisticated argument is based on the opportunity cost principle. A house can be rented out whereas consumer durables normally cannot be used for any other purpose than the owner's own use. The National Accounts impute an income on owner-occupied houses but not on consumer durables so as to reflect realistically the opportunity costs involved.

This is obviously an area of contention. An attempt to test the variability of the saving ratio showed no significant difference when calculated including or excluding consumer durables.¹ Neither concept seems to offer an advantage on empirical grounds where the search is for stable relationships.

Based on theoretical considerations there seem to be good reasons for including net investment in consumer durables in net saving. Individuals certainly do not view the purchase of a car or refrigerator as a decrease in their net worth. Consumer durables also form an important part of national wealth. For these reasons and the ones cited above it is not acceptable to exclude this component from capital formation.

1. Canadian data for 1926-1962 were used. $\text{Var } s_1/y = 52.2$ and $\text{var } s_2/y = 50.0$, where s_1 = personal saving, s_2 = personal saving + purchases of consumer durables, y = disposable personal income. The difference between the two variances is not significant statistically.

At the cost of the added inconvenience of having to estimate depreciation and impute returns social accounting could accommodate consumer durables in the same fashion as owner-occupied houses are treated now. The present treatment of durables causes an understatement of personal savings as well as gross domestic investment and an overstatement of consumption.

No comprehensive figures exist on the value of existing real assets transferred to or from the household sector. Lacking information the assumption must be made that transfers of houses and durables take place mainly among units in the household sector with the transfers from or to other sectors being ignored. This assumption may be reasonably appropriate in respect to consumer durables with the exception of used cars, where presumably fluctuations in inventories of used car dealers reflect the net flows due to transfers of used cars between the business and household sectors. As already indicated, the expenditure on consumer durables in the National Accounts includes a component reflecting this net flow, and no attempt will be made here to adjust for this component. However, for a conceptual framework where new investment in real assets, transfers of existing assets and changes in claims are distinguished, this item appears in the wrong category at present.

Real estate dealers rarely take title to houses, usually acting only as an agent in the sale of houses from one consumer

to another.¹ Presumably the value of houses transferred from other sectors to households is minor except under special circumstances. For example, when building contractors are unable to sell newly built houses but rent them out instead — this is real investment by business in residential housing (in a way an involuntary inventory accumulation). If during the next time period the housing market improves and contractors reduce their stock of existing houses — this would constitute a transfer of existing real assets from business to households.

Transfers in the form of land from business to households pose an interesting problem. The purchase of farm land by a housing developer and its later sale to households must be interpreted to be first a transfer of land within the business sector (from farm to non-farm)² and then a transfer to households. Actually part of the purchase price of newly built houses (the portion representing land cost) is in all cases considered as a transfer of existing assets rather than investment in new real assets. The figures in Tables A and B exclude the

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1. An interesting point discussed by Goldsmith is the capitalization of dealers' fees on transactions in existing real assets. Goldsmith argues that these costs "must be regarded as part of national as well as individual units' saving." Goldsmith, A Study of Saving . . ., II, 61. In the Canadian National Accounts these fees are not capitalized.
 2. This depends on the exact position of farms in the sectoring frame. The problem of whether farms belong into the household sector or not will be discussed further on.

cost of land and thus represent investment in new real assets.

On the other hand, transfers in the other direction -- of existing owner-occupied property from households to other sectors -- may be considerable. Expropriation by governments of houses and land for roads, public facilities etc. may be substantial. Also business expansion often involves the transfer of owner-occupied dwellings to business.

Considering the various possible shifts of real existing assets to and from the household sector (particularly real estate) and the complete lack of data on the size of any of these components, it is not even possible to guess about the direction of the net flow. The only way around this problem is to ignore all these transfers, although there is little hope that in fact the transfers between sectors are negligible or cancel out.

Summary

Consolidating in Table F the above estimates of the real investment of households and considering financial claims for the time being as one undifferentiated category, we find that real investment in housing and consumer durables always exceeds the net increase in financial claims. Further, gross expenditure on consumer durables, although conservatively restricted here to major durables, consistently exceeds the amount invested in owner-occupied houses. This observation will stand even after allowing for substantial

errors in the housing estimates. In the light of this fact and the growing importance of consumer durables¹ it is of some importance whether durables are considered saving or not when estimating saving functions. The position taken here is that consumer durables should be included in the saving estimates of households.

Data in Table F also suggest that financial investment is a highly volatile item whereas investment in new real assets shows a comparatively even upward trend. However, no generalizations are justified from data for such a short period, particularly considering the unreliability of some of the components. Claims against unincorporated business, included in financial investment, is merely a residual item and conceptually as well as statistically quite meaningless.² Also the residual in the consumer sector in the NTA (item 9 in Table F) is discouragingly large for several years.

1. The ratio of expenditure on major consumer durables to personal saving has risen from 0.67 in 1952-54 to 1.18 in 1961-63. Calculated from DBS, National Accounts: Income and Expenditure 1926-56, 1963.

2. The original NTA treatment made this a residual item for the unincorporated business sector (see discussion on page 30 above). My adjustments have further compounded the "residualness" of this item, i.e. any errors in my estimates have further distorted these figures. The negative signs in my adjusted estimates for this item (showing in three years out of nine; see Table 7, Appendix) must be interpreted as unincorporated business having borrowed more funds than it used or that owners withdrew more than current net profits from the business. The negative signs most likely reflect overestimation of investment in owner-occupied houses and/or underestimation of depreciation allowances or the increase in mortgage liabilities on my part. On the other hand, it may not be completely unreasonable to assume that for at least some of the three years the negative signs reflect excess liquidity in the unincorporated business sector. Especially for the two immediate postwar years the negative signs may reflect transfers from business to owners for the above reason.

TABLE F
Estimated Saving of Households,
Canada, 1946-1954
(millions of dollars)

	1946	1947	1948	1949	1950	1951	1952	1953	1954
1. Personal Saving as per National Accounts	892	494	994	926	662	1334	1291	1312	809
Adjusted by:									
2. Expenditure on major consumer durables	465	707	756	960	1255	1292	1577	1758	1731
3. Est. depreciation on owner-occupied houses	122	140	165	178	190	204	216	228	243
4. Adjusted gross saving of households	1479	1341	1915	2064	2107	2830	3084	3298	2783
Utilization of gross household saving:									
5. Investment in consumer durables	465	707	756	960	1255	1292	1577	1758	1731
6. Investment in new owner-occupied houses	333	425	470	585	653	607	606	762	810
7. Total real investment (546)	(798)	(1132)	(1226)	(1545)	(1908)	(1899)	(2183)	(2520)	(2541)
8. Increase in net claims (financial investment)	723	396	410	460	843	994	1387	1081	957
9. Errors & transfers	- 42	- 187	279	58	- 644	- 63	- 486	- 303	- 715

Sources: Item 1 - NTA, category A6, Sector I, pp. 497-505.

" 2&5 - Table E, p. 38 above.

" 3 - Table C, p. 35 above.

" 6 - Table B, p. 32 above.

" 8 - Table 8, Appendix.

" 9 - NTA, category D, Sector I, p. 698. See explanation pp. 578-579.

This residual reflects beside all errors and omissions, also the transfers of existing real assets between sectors.

Excluding the most unreliable component (claims against unincorporated business) from financial investment, the series shows still considerable fluctuations.

TABLE G

Financial Investment of Households
(excluding equity in unincorporated
business), Canada, 1946-54

(millions of dollars)

1946	740
1947	447
1948	381
1949	414
1950	710
1951	712
1952	1040
1953	911
1954	1143

Source: Appendix, Table 8.

CHAPTER V

Household Financial Saving and Financial Intermediaries

Saving in the form of claims or financial saving can be classified in several ways. Perhaps the most interesting breakdown is between primary and secondary securities, the latter being claims against financial intermediaries. These institutions play an increasingly important role in a developed and complex economy as agents in the capital market, and they are administered by experts who are presumably sensitive to monetary and fiscal policy measures.

The role of intermediaries is to channel saving from surplus units to deficit units for investment. As pointed out before, the household sector is the largest surplus sector in the economy and financial intermediaries play an important role in household saving. Goldsmith states about the situation in the USA:

The role of financial intermediaries as channels of saving for other than personal sectors, and hence their share in national saving, is much smaller than in the case of personal saving. We may estimate, for instance, that not more than about 5 per cent of the total funds used by non-financial corporations in the period 1901 to 1949 went to financial intermediaries—primarily in the form of deposits with commercial banks—and that the proportion was even smaller in the case of governments. ¹

Among financial intermediaries it is useful to make a distinction between the banking system and other institutions.

1. R.W. Goldsmith, Financial Intermediaries in the American Economy Since 1900 (Princeton, 1958), p. 306.

According to Goldsmith's elaborate study the growth of all financial intermediaries during the period 1900-1950 in the United States exceeded the growth of national income and their share of total national intangible assets grew from 25 to 69 per cent.¹ The importance of all types of intermediaries did not grow uniformly, insurance companies and savings and loan associations grew more than other intermediaries. On the other hand, assets of the banking system, mortgage companies, security brokers and dealers etc. expanded proportionately less than those of all intermediaries.²

After 1929, in addition to the outstanding growth of private insurance, a spectacular rise in public pension and other social security funds also took place. When limiting the comparison to the period 1929 to 1952 the most pronounced contrast appears between the growth rates of private and public intermediaries.³ During this period the assets of the former tripled while those of the latter increased 18 fold.⁴

Throughout the period 1900-1950 consumers provided just

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1. R.W. Goldsmith, Financial Intermediaries in the American Economy Since 1900 (Princeton, 1958), p. 321.
 2. Ibid., p. 70.
 3. The latter include Federal Reserve Banks, the postal savings system, government insurance funds and government lending institutions.
 4. Goldsmith, Financial Intermediaries . . ., p. 79.

about 50 per cent of the total funds of the financial intermediaries.¹ As the assets of intermediaries increased so did pari passu the contribution of consumers. At the same time a steadily growing proportion of personal savings flowed through the hands of financial intermediaries. According to Goldsmith, claims against financial intermediaries as a share of all intangible assets held by households and unincorporated business nearly doubled by 1946-49 from the average level in 1897-1929.

TABLE H

Saving through Financial Intermediaries
as Share of Personal Saving, USA.

	as % of net personal saving ^{a)}	as % of gross personal saving ^{b)}	as % saved through intangible assets
1897-1929	36	27	41
1946-1949	54	39	77

a) After deduction of liabilities

b) Without deduction of liabilities

Source: Goldsmith, Financial Intermediaries . . ., p. 304, Table 91.

This type of analysis involves several difficulties.

Within the simple framework set up previously, the flow of saving

1. Goldsmith, Financial Intermediaries . . ., p. 140.

from a surplus sector to the deficit sectors is visualized as a one-directional flow. Actually this process is more complex and the household sector, although a net lender, borrows and lends at the same time.

Financial intermediaries appear both as suppliers of funds and receivers of funds in respect to households. Positive savings can accrue through increases in assets or reductions in liabilities. In a growth situation (either growth of income for the unit, or growth of the sector, etc.) what usually happens is that both assets as well as liabilities are growing, and the netting out of the increase in liabilities against the increase in assets yields a saving figure which by itself gives us no indication about the magnitudes of the other two variables. The importance of financial intermediaries in the saving process of households can be better shown by presenting gross figures. However, this is not a very satisfactory presentation when the starting point of analysis is saving (a net concept) and its distribution.

The other problem involves the difficulty of identifying a change in the stock of claims of one sector with a flow of funds between that sector and the issuer of the particular claim. The existence of transferrable claims makes such an interpretation erroneous, particularly in the short run.

The NTA present only the net changes in claims by broad categories for each sector. An increase in marketable government

bonds for the household sector cannot be interpreted as a flow of funds from households to the government sector, because the bonds are not necessarily new issues and may have been held previously by some other sector in the economy. Also in a case where the household sector redeems some of its corporate bond holdings and purchases new government securities with the proceeds, it is obviously erroneous to interpret this transaction as households supplying funds to government and business to households. It is rather a case of funds being moved from the corporate to the business sector. Net changes in claims fail to identify such movements.

Although an increase in the total net claims held by the household sector can be unambiguously interpreted as being the surplus supplied by the household sector to the rest of the economy, there is no way of telling what the contribution of the sector was to each of the other sectors without a detailed "to-whom, by-whom" statement. Hood criticizes Goldsmith for overlooking this difficulty in his analysis.¹

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1. Wm. C. Hood, Financing of Economic Activity in Canada (Ottawa, 1957), p. 310. It is not altogether clear that Goldsmith is totally unaware of this problem. The discussion on pages 185-190 in his Financial Intermediaries . . . contains several statements that come close to recognizing this difficulty. However, he does not make a clear statement to the effect that he plans to ignore this particular problem in his study, nor is there any discussion of it — although he discusses at some length other issues that also make changes in assets differ from flows of funds.

Beside these basic considerations there are also data difficulties. Non-insured private pension plans are included in the consumer sector of the NTA. Intangible assets held by self-administered or trustee pension plans are included with similar claims of individuals and changes in them would thus not show up as flows of household funds to intermediaries that they actually are. For this reason equities in self-administered or trustee pension plans are excluded from "insurance and pensions" in Table G which only reflects growth in insurance and insured pension plans.

Contributions to social insurance and government pension schemes are treated as deductions from personal income and as non-budgetary income of the government in the social accounts. Claims accruing to households against such plans are thus excluded from personal saving and form part of government saving. This is the standard treatment in the National Accounts and it is also followed in the USA. Goldsmith, however, makes an adjustment in the data to include social insurance and public pension reserves in personal saving and considers the government a financial intermediary in this capacity. A discussion about the appropriateness of this treatment will be taken up later in connection with contractual or compulsory saving. Here only the incomparability of the Canadian and US data is noted.

In the light of these conceptual and data difficulties there seems little point in attempting to segregate the surplus

household funds flowing directly to investors from the funds flowing to intermediaries who in turn make them available to other users.¹ However, some impression about the importance of financial intermediaries can be gained by examining the composition of the changes in financial assets and liabilities of households.

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1. Appendix, Tables 9 and 10 contain an analysis similar to Goldsmith's. Disregarding the conceptual and data difficulties mentioned above it seems that for Canadian households financing through intermediaries is about twice as important as direct finance (supplying funds to ultimate users or receiving funds from ultimate lenders) — calculated on either a net or a gross basis. This analysis is not included in the text mainly because of its conceptual flaw described on page 52 above.

TABLE I

Changes in Financial Assets and Liabilities
of the Household Sector, Canada, 1946-54

<u>Changes of Assets</u>	\$ millions	% of total
Canadian currency and bank deposits	3,431	30.6
Other institutional deposits	976	8.7
Claims on unincorporated business	756	6.7
Mortgages	1,690	15.1
Government of Canada marketable bonds	- 2,656	- 23.7
Government of Canada non-marketable bonds	1,582 ^{a)}	14.1 ^{a)}
Other bonds and stocks	1,653	14.8
Insurance and pensions	2,959	26.4
Foreign inheritances & migrants funds	678	6.0
Other transactions	134	1.2
	<hr/>	<hr/>
Total increase in financial assets	11,203	100.0
 <u>Changes in Liabilities</u>		
Gross saving less investment in real assets	5,150	46.0
Consumer charge accounts	288	2.6
Instalment credit	757	6.8
Bank Loans	380	3.4
Other loans	440	3.9
Mortgages	1,400	12.5
Foreign inheritances and migrants funds	685	6.1
Other transactions and errors	2,103	18.8
	<hr/>	<hr/>
Total	11,203	100.0

a) Includes changes in tax liability.

Source: Appendix, Table 8.

In a few categories there is no ambiguity of interpretation involved — the direct route that the funds travelled is known. E.g.,

the increase in non-marketable government bonds is a direct transfer of household funds to the government. Also the increase in insurance and pensions reserves can be identified as a flow from households to financial intermediaries.

Although it is impossible to show here in clear and unambiguous figures what share of the surplus funds of the household sector went to financial intermediaries, there is little doubt that it was substantial and that it has been a growing share. There are also good reasons to believe that Goldsmith's findings about the long term trend in the composition of personal saving in the USA are in general valid for Canadian household saving. These findings are (a) saving through intermediaries and (b) saving for self-use (for investment in real assets) have increased as a proportion of total saving (particularly the former), and (c) saving made directly available to other sectors have declined sharply, particularly after 1930.¹ Some support for these conclusions can be found in the Canadian data even for the short period under observation;² (a) steady increases in annual additions to insurance and pension reserves — an item that seems to dominate indirect financial investment, even although it is understated,³ (b) growth in household

1. Goldsmith, A Study of Saving . . ., I, 157.

2. For (a) see Appendix, Table 8, and for (b) Table F in text above.

3. See p. 53 above.

investment in real assets (particularly in consumer durables). Because of the ambiguities involved in interpreting the data on transferrable claims, little can be said about the direct flow of funds from households with a surplus to other deficit units. Based on this very partial analysis it seems possible to accept the hypothesis that institutionalization of household saving has been taking place in Canada.

Concurrently with the trend of financial intermediaries gaining importance, a growing proportion of household saving has become contractual and less of it discretionary. Nevertheless, not all forms of institutional savings are contractual and vice versa. Contractual savings arise in three basically different ways:

- 1) through borrowing usually connected with the acquisition of real assets (e.g., mortgages or instalment debt),
- 2) through voluntary contracts that last for a considerable length of time (e.g., insurance payments),
- 3) through compulsory participation in retirement, social insurance, etc. plans -- situations where the individuals at no time had the choice of electing to participate.

The increase in these "tied" savings has been spectacular according to Goldsmith.¹ For the economy as a whole this trend

1. Goldsmith, A Study of Saving . . ., I, 160.

has been evaluated as a stabilizing influence, but from the individual's point of view it has reduced his freedom of action. That the growth of contractual saving is a desirable phenomenon is not necessarily a unanimously held opinion. It largely depends on one's view of the economic system. If the premise is that underconsumption in some sense causes economic fluctuations, then the growth of contractual saving only adds rigidity to the system. This may be viewed as a potential threat in a business downturn. On the other hand, if the view is taken that shortage of saving is the dominating limitation, then the increase in contractual saving must be interpreted as a welcome stabilizing influence.

If there is little or no substitution between contractual saving and other forms of saving, the growth of "tied" saving has serious implications for consumption function theory. It challenges Duesenberry's view that if income undergoes a cyclical decline, consumption will not retrace its path along the secular consumption function, and the saving ratio will fall in this case.¹ With fairly large commitments in terms of contractual saving it is possible to visualize the reverse situation: a cyclical decline in income will be accompanied by a rise in the saving ratio, i.e. consumption will fall below its secular path.

1. J. Duesenberry, Income, Saving and the Theory of Consumer Behavior (Cambridge, Mass., 1949).

It has been suggested that some offset to the drop in total spending can be expected from increased investment encouraged by lower interest rates that result from pension funds bidding for securities in the capital market.¹ However, it would seem foolish to depend on such a notoriously uncertain effect. If the above hypothesis about consumer behaviour were true, it would mean an additional strain on government stabilization policy. More powerful fiscal and monetary tools would have to be applied to achieve the desired effects.

The interesting question arises whether the growth of contractual savings has resulted in a net increase in total savings or whether it is only a structural change and has taken place at the expense of other forms of saving. In terms of the long-term trend, the saving ratio has shown a great deal of stability, so the second alternative seems a more acceptable assumption.

Goldsmith offers the following conclusion:

. . . that the secular trend of the basic ratios (i.e., the proportion of national or personal saving, including consumer durables, to net national product or personal disposable income, all calculated by comparable social accounting methods) has been horizontal for the period 1897-1929 and has also been level for the entire first half of this century.²

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1. E.S. Daniel, "Retirement Funds, Markets and Growth" in Joint Committee on the Economic Report, Federal Tax Policy for Economic Growth and Stability (Washington, 1955).
 2. Goldsmith, A Study of Saving . . ., I, 75.

Kuznets before him came to similar conclusions in his well-known study.¹

Canadian data presented in the Appendix, Table 1, confirms the impression of relative stability in the total savings ratio -- excluding depression and war years. Gross Domestic Saving as a proportion of GDP has remained just above 25 per cent. A more relevant test as to the stability mentioned here would be to examine the behaviour of personal saving plus accumulation of reserves in social security funds as a proportion of disposable income. However, data and conceptual difficulties make such a test hardly practicable.

In general it was expected that the growth of compulsory saving would have a deterrent effect on the private sector's saving and perhaps lower total saving. As Kuh observes, either this is not true or the new trend has not had time to manifest itself.² It may work in the reverse. If the traditional savings habits of the upper income groups are not affected, i.e., if they continue saving the same proportion out of their lower discretionary incomes,³ and the

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1. S. Kuznets, National Product Since 1869 (New York, 1946).
 2. E. Kuh, "Five Decades of U.S. Saving," Journal of Economic History, XVI (June, 1956), p. 218.
 3. Kuznets finds evidence of relatively greater stability in the saving/income ratio in the upper income groups than in the lower groups. These findings refer to cyclical behaviour of the ratio and it is only speculation that the reaction to a permanent income change may be similar. See Shares of Upper Income Groups in Income and Savings (New York, 1953), p. 206.

lower income groups who previously saved little or were dissavers become net positive savers, the total savings ratio may go up.

It is obviously an extremely important question whether there is substitution between contractual and other forms of saving. The implications it has for cyclical stabilization policy and long term growth have been indicated in the preceding discussion. On a priori grounds, if saving is a purposeful activity with certain goals in mind it would seem reasonable that individuals will regard one type of saving as a substitute for some other type, at least to a certain extent. If this point of view is taken, it becomes very important to analyse total saving rather than the separate components of saving, although the additional information about the composition of saving may be very valuable.

On the other hand, arguments have been advanced that analysis should concentrate on the "free" portion of financial saving.¹ This is presumably the area where the consumer is guided by purely financial criteria, and reasoning about the importance of this component of saving is based directly on Keynesian liquidity

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1. S.J. Handfield-Jones, "The Canadian Transaction Accounts," pp. 103-126 and S.J. Sigel, "An Approach to the Integration of Income and Product and Flow-of-Funds National Accounting Systems: A Progress Report," pp. 11-93 in National Bureau of Economic Research, The Flow of Funds Approach to Social Accounting, ("Studies in Income and Wealth," Vol. XXVI; Princeton, 1962). Particularly see pages 122-125 in Handfield-Jones and pages 82-91 in Sigel.

preference considerations. This view may indeed be relevant in terms of monetary theory and analysis of short-term fluctuations in economic activity. However, in terms of offering an explanation for consumer savings behaviour it seems to be only of limited usefulness. Only in the very short run is there a sharp dichotomy in the determinants of saving in forms of contractual and "free" savings. With the exception of the compulsory form of saving, all savings decisions become in the longer run deliberate and part of an overall plan if rational behaviour is postulated which seems to be the case in permanent income and life-cycle type of consumption functions.

It is interesting to note that Lerner, although arguing from a completely different premise, concluded that all attempts to segregate "voluntary" from "involuntary" saving were doomed to failure, because "in a determinate universe all saving, like everything else, is 'forced' and that free will is nothing but an illusion".¹

1. A.P. Lerner, "Savings Equals Investment," The New Economics, ed. S.E. Harris (New York, 1948), p. 622.

CHAPTER VI

Pensions and Insurance

Some of the most intriguing conceptual problems in respect to household saving are concentrated in the area of compulsory saving. There was a distinction made above between insurance and retirement pensions, because entering into an insurance contract is usually more voluntary than participating in retirement pension plans. For practical reasons, however, it will be convenient to discuss this whole area of contractual savings together.

Pensions and insurance that constitute saving can be subdivided into the following major categories:

1. Public pension and insurance
 - a) retirement pensions of public employees
 - b) social security programs.
2. Private pensions¹
 - a) trustee plans
 - b) insured plans
3. Private insurance policies

1. For definitions see R.M. Clark, Economic Security for the Aged in the United States and Canada (A Report Prepared for the government of Canada; Ottawa, 1960), II, 72.

At present the National Accounts deduct the employer and employee contributions to plans in category 1 from wage and salary income before this component enters personal income.¹ From the point of view of personal saving it makes no difference whether these payments are deducted with other direct taxes from personal income or at the point where they are deducted. Either way accumulation of claims by households against such public funds are not reflected in personal saving but in government saving.

This treatment is difficult to justify for category 1a. There is really very little difference whether the employer is a private company or the government. If claims against private pension plans are considered personal saving, so should be the claims against retirement funds of public employees. In fact, the United Nations recommend the inclusion of such funds in the personal sector.² The present Canadian treatment is based on an earlier U.N. recommendation that was subsequently changed. The possibility of changing the present treatment of public retirement funds and bringing them into line with private plans will be

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1. DBS, National Accounts, Income and Expenditures, 1926-1955. Item 126, pp. 123-124.
 2. United Nations, Studies in Methods, A System of National Accounts and Supporting Tables (Series F. No. 2, rev. 2), p. 11.

discussed before the next major revision of the accounts.¹

On the other hand, the inclusion of category 1b in the government sector is well established and less open to criticism. At present in the Canadian Accounts this category includes mainly the Unemployment Insurance and Workmen's Compensation Fund. Both of these funds can hardly be viewed as accumulation of personal savings. It seems only reasonable to treat these programs as a redistribution of current income among individuals rather than redistribution of consumption over time (i.e., saving). The accumulation of reserves is only incidental and not the main purpose of these programs in the long run. So basically these programs are instruments of the social policy of the government.

In respect to social security funds the official treatment in the U.S.A. is similar, but the situation differs in so far as large funds have accumulated through different social insurance measures, particularly through plans run by the federal government. In many studies of personal saving an adjustment is made to transfer such saving from the government to the personal sector. For example, Goldsmith states:

The view taken in this study is that changes in assets of federal trust funds are best regarded as a component of personal saving rather than of government saving.
. . . include all agencies engaged in the conduct of

1. Interview with Mr. Hans Adler, Assistant Director of National Accounts, DBS, Feb. 18, 1965.

insurance, pension or analogous programs in which assets in the nature of reserves are held on behalf of individual participants or beneficiaries.¹

With the inception of the proposed Canada Pension Plan these considerations will become relevant for future use of Canadian data. Presumably the accumulation in the Fund will be treated as part of government saving, but for certain analytical purposes this may not be appropriate. Particularly if the Canada Pension Plan displaces private pension plans or retards their growth, time series of personal saving should be adjusted by increases in the government-run pension fund.

It is difficult to find clear-cut evidence as to the effect of compulsory public pension plans on private plans and on overall saving propensities. On the first point it is argued that a public plan will not adversely affect private plans, at least not in the long run. This argument is based on observations that private plans have continued to grow in other countries after the introduction of a public plan.² Strictly speaking, the relevant question here is whether the growth of private plans would have been larger in the absence of the public plan — a purely hypothetical question, not answerable with empirical data.

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1. Goldsmith, A Study of Saving . . ., I, 354, footnote to Table T6.
 2. Department of Health and Welfare, The Canada Pension Plan (Ottawa, 1964), p. 22.

Authoritative answers seem to be also missing on the other aspect -- what is the effect of pensions in general on other saving components. Cagan in an unpublished study found an absence of substitution between pension contributions and other savings.¹ It seems difficult to reconcile these findings with the known facts about the long run stability of saving ratios on the one hand and the phenomenal rise of pension savings on the other.

Cagan in his study utilized the information supplied by a large sample² of Consumers Union members in 1958-59 by mail questionnaires. He recognizes that the sample is unrepresentative of the total U.S. population, but considers that comparisons within the sample particularly after standardizing for income level, age, occupation, education, etc. are valid.

Dividing his sample into two groups -- those covered by a pension plan (but excluding Social Security) and those not covered -- he examines the ratio of discretionary saving and other contractual saving (excluding pensions) to income. He finds that there is substitution between other contractual saving (insurance, privately purchased annuities and reduction in mortgage debt) and

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1. P. Cagan, "Pension Plans and Aggregate Saving" (NBER mimeographed study paper, 1961).
 2. The original sample numbered 15,873 households. After excluding for various reasons some of households, he effectively works with approximately 11,000 households.

pensions, but complementarity between pensions and discretionary saving, and pensions and other contractual savings.

Cagan explains the increase in other forms of saving when pension coverage is acquired as follows:

In short, pension coverage draws attention to the problems of providing for retirement and goes a long way in helping to solve them, but by itself is apparently found inadequate; the average household supplements it by additional accumulations mostly in bank accounts and government bonds at the expense of consumer durables purchases. I shall call this a 'recognition' effect of coverage for want of a better term. 1

Cagan admits that rates of substitution opposite in sign to what standard economic theory leads us to expect are suspect. He tries out different adjustments but discovers nothing to indicate that his findings are spurious. His main conclusions based on the data are that pension contributions are not offset by reductions in other forms of saving, that personal saving ratios will rise as pension coverage spreads. Business and government saving will be somewhat reduced, but 80-90 per cent of pension growth constitutes a net addition to national saving. Cagan cites factors unrelated to pensions that may have reduced other saving components and thus offset the rise in saving ratios that his hypothesis would imply.

This explanation is not very convincing, particularly because no empirical evidence can be easily presented in support

1. Cagan, pp. 3-50, 3-51.

of it. Decline of other saving components as a ratio of income can be empirically verified but finding the correct causal links is going to be tricky. So if one accepts Cagan's findings, one is still left with the puzzle how to reconcile the stability of the savings ratio with the growth of pension funds. Is this another case where cross-section and time series analysis yields apparently contradictory results?

Remarkably little research has been done on these questions, considering their growing importance. Public finance specialists have discussed the effect of the growth of pension funds on the overall propensity to save via its effects on tax revenue. Because pension plan contributions are non-taxable, growth of such plans involves a loss of government revenue (in the absence of compensatory fiscal policy) and a reduction in government saving. In Hall's opinion, the addition to private saving through pension fund accumulation will on balance exceed the reduction in government saving when compensatory fiscal action is excluded from consideration.¹ Hall's conclusions are based more on a priori reasoning rather than on empirical research. Yet no published research on the direct effect of pension saving on other household saving components was located.

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1. C.A. Hall, "Retirement Contributions, the Spending Stream, and Growth," in Joint Committee on the Economic Report, Federal Tax Policy for Economic Growth and Stability (Washington, 1955).

Turning now specifically to the measurement of saving in the form of private pensions and insurance in aggregate statistics, it should be noted that trustee pension plans are treated in one way and insured pension plans plus all other life insurance are treated in another way. Trustee pension plans were in the past inseparable from the household sector and neither in the National Accounts nor in the NTA do any entries represent transactions between households and trustee pension plans. Regular annual surveys of trustee pension funds were initiated only in 1957, too late for the NTA estimates.

All business handled by life insurance companies (pensions as well as other insurance policies) is, on the other hand, treated in a different fashion. Although in the National Accounts premiums paid by households to insurance companies and claims paid to households are ignored as intra-sectoral transfers, distinct entries credit investment income of insurance companies to personal income and debit personal expenditure with administrative expenses incurred by life insurance companies (as a measure of services rendered to individuals). Increases in trustee pension reserves, as well as insurance reserves, end up in personal saving, but the mechanics representing the transactions are different in the two cases.

Considering the present lively interest in pension problems it would be useful to estimate household saving in the form of pensions. The above description of the present treatment of pensions

indicates the difficulties involved in such an estimation. For all practical purposes it is impossible to extract such a figure from aggregate data.

The NTA give us some indication about the volume of such saving. According to the Appendix, Table 8, annual saving in the form of insured pensions and insurance (but excluding trustee pension funds) rose from \$255 million in 1946 to \$416 million in 1954. Out of the \$416 million, more than three-quarters or \$317 million¹ consisted of increases in life funds of Canadian federal, British and foreign life insurance companies. A recently completed study² puts this latter component at \$518 million for 1961.

Data are inadequate to estimate saving through trustee pension plans prior to 1957. Table 11 in the Appendix presents estimates from annual surveys that have been conducted since 1957. In the seven years from 1957 to 1963 saving in the form of trustee pension funds has approximately doubled. In 1963 such saving reached \$585 million. If this trend continues, annual savings through trustee pension fund will very soon exceed the saving in insurance and insured pensions. It is clear that at present all pensions are far more important in terms of annual amounts contributed to personal saving than life insurance is.

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1. NTA, Category C8: Insurance and Pensions, p. 687.
 2. DBS, Central Research and Development Staff, "Life Insurance in Canada, 1961" (unpublished study, 1964).

Summarizing information from various sources, the following estimate of contractual saving through pensions and life insurance emerges:

TABLE J

Estimated saving of households through
life insurance, annuity contracts
and pensions, Canada, 1961

(millions of dollars)

Saving through:

1. Life insurance and annuity contracts with federal, British and foreign life insurance companies	518.
2. Life insurance and annuity contracts with provincial life insurance companies	20.
3. Fraternal benefit societies	
4. Trusteed pension funds	446.
5. Federal government annuities	38.
	<hr/> 1022.

Note: These estimates exclude the saving in federal and most provincial government retirement funds for their employees.

Sources:

- Item 1 - unpublished study, see footnote 2, p.71.
- Item 4 - Table 11, Appendix.
- Items 2,3 - unpublished study, see footnote 2, p.71.
- Item 5 - Bank of Canada, Statistical Summary: Supplement, 1962, p. 115. Adjusted to a calendar year basis.

Total personal saving in 1961 was \$1529 million, so contractual saving in the form of pensions and insurance amounted to 67 per cent of total saving. In 1961 personal saving dipped below the previous year's level and was well below the trend line, so insurance and pensions bulk particularly large in 1961. Taking a guess at the proportion of this saving component in 1962 and 1963, it is probably around 50 per cent of personal saving, because the growth of pensions and insurance funds has proceeded at an even rate whereas personal saving was up considerably from its depressed 1961 level. This is an example of the stability of contractual saving and the large cyclical fluctuations that occur in the "free" or discretionary component of saving.

Summary

In the postwar period the most significant change in Canadian household saving has been the growth of contractual saving. Especially striking has been the growth of pension funds in the last decade. This change in the composition of household saving may have serious implications for public policy, because of its effects on cyclical fluctuations and economic growth. The long run trend of the saving ratio may be profoundly affected by this development, although no significant changes can be detected yet. Very little empirical research has been done in this area, and it is not clear what the exact effects of this change in the composition of saving are on individual saving behaviour.

Part III

Relationship of Cross-section and Time-series Data

CHAPTER VII

Some Methodological Considerations
in Measuring Saving

Up to this point the discussion has been in terms of aggregate household saving and some adjustments to available Canadian data were discussed and illustrated. Analysis of saving can utilize a time series of aggregate data or individual observations (or groups of such observations) in cross-section data. Depending on the nature of the problem under investigation either the one or the other approach may be appropriate to use.¹ In some cases it may be possible to test the same hypothesis using either type of data -- e.g. "saving is an increasing function of income" may be tested using either type of data.² In such cases it is necessary to solve definitional difficulties in a uniform way, i.e. depending on the purpose of the analysis and not on the form of data. Ideally, at least, the analytical purpose should be the only consideration when setting out to measure saving. In practice, however, it may be

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1. More recently researchers have been demanding data that would combine the two approaches. Continuous cross-section data or repeated collections of data from a fixed panel of respondents are thought to be helpful for isolating the effect of "normal" income from the effect of "transitory" income on consumption and saving. See Jean Crockett, "Income and Asset Effects on Consumption: Aggregate and Cross Section," NSR, Models of Income Determination ("Studies in Income and Wealth," Vol. XXVIII; Princeton, 1964), pp. 97-132.
 2. It is debatable whether the question has the same meaning when posed vis-a-vis the two types of data.

impossible to obtain both types of data on a uniform definition due to some empirical problems that will be discussed below.

On the whole, the purpose of aggregate information is to provide an estimate of total saving either for a sector or the total economy and follow its changes through time in relation to other variables. Cross-section data are designed to provide a distributional picture of saving — who within a sector are savers and how savings vary with demographic, economic etc. variables at a point of time. For the purpose of testing hypotheses about the motivations underlying saving behaviour it is usually more appropriate to use cross-section data. The factors assumed to affect saving behaviour vary more in cross-section than in time series and thus provide a "richer" sample for testing a hypothesis.¹ Also in cross-section data one is much closer to the level where these motives operate and it is easier to recognize the interrelationships and causal connections that may be at work. For the same reason it is often useful to discuss conceptual problems in respect to household saving at this lowest level of aggregation, particularly if the data are to be used for explaining saving behaviour of individuals.

It seems useful at this point to make the rather obvious and commonplace statement that either (a) the income less consumption,

1. E.g. wealth, age composition, occupational mix or even income level are slowly changing variables through time. In cross-section data these variables show a great deal of variation.

or (b) change in balance sheet method may be used to compile saving data in time series as well as in cross-section studies. Sometimes the income minus consumption approach is referred to as the "residual" method and the comparative balance sheet approach as the "direct" method. This terminology is not without ambiguity in practice, because using the "direct" approach for compiling aggregate data it is common to estimate the (financial) assets of the consumer sector as a residual, e.g. from the total change in bonds outstanding the changes in bond holdings of all other sectors are deducted and the balance is then assigned to the consumer sector.

For measurement purposes these two approaches are equivalent; aside from practical difficulties identical results will be achieved if the two requirements for consistency are observed.¹ On the other hand, conceptually there is a subtle difference — the income minus expenditure approach reflects the source of saving, the comparative balance sheet approach the application.²

Apart from the practical feasibility which may determine the choice of the method used in measuring saving, use of the data

1. See discussion in Chapter II, p. 13.

2. Also sometimes referred to as the "utilization" approach.

should again be the main consideration, because either method yields different subsidiary data as a by-product. So the comparative balance sheet method provides a great deal of detail about the composition of saving, very useful for any studies trying to establish the connection between net worth and saving, liquid assets and saving etc. The detailed data on composition of saving may also be helpful for examining the ultimate aims and purposes of saving. On the other hand, the income less consumption approach throws some light on the origin of saving. For example, it may help to determine whether savings as a rule result from a combination of relatively high incomes and "normal" levels of consumption, or from "normal" income combined with low consumption expenditure.¹ Also it may be relevant to such questions as whether saving and consumption propensities differ in respect to different types of income (i.e. wages and salaries, income from business, property income etc.). Empirical evidence on this matter may be very important to growth and capital theory, where some highly abstract models incorporate very definite assumptions about the different propensity to consume out of labour

1. These two variables and their relative level may be examined in relation to a family's past experience (and future expectations) or in relation to the average levels prevailing in the community. Lately consumption function theory seems to have shifted emphasis towards the former type of analysis.

income and out of profits.¹

Although empirically it may be difficult to find a person who is in receipt of labour income alone (and even more difficult -- of pure profits), special techniques make it possible to estimate the propensities in respect to different types of income as long as the data distinguish adequately between the different sources of income.

Of course, in the best of all possible worlds the answer would be to always obtain all the detail, i.e. pursue the estimation of saving by both methods simultaneously. This would in fact provide an excellent check on the estimate.² Although this "double" approach is sometimes attempted in cross-section studies, it is expensive and burdensome and can rarely be carried out on a scale

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1. J. Robinson, The Accumulation of Capital (London, 1958) and N. Kaldor, "A Model of Economic Growth," Essays on Economic Stability and Growth (London, 1960), pp. 259-300.
 2. In terms of Canadian aggregate data the "direct" saving estimates produced by the Bank of Canada for 1939-1953 (see D.J.R. Humphreys, Personal Saving in Canada: Direct Estimates 1939-1953, unpublished paper presented at ASA meeting in Montreal, 1954) and the National Transaction Accounts are attempts to estimate personal or consumer saving by the balance sheet method. A comparison of these data with the annually produced personal saving estimate in the National Accounts -- by the income less consumption approach -- is reproduced in the Appendix, Table 12. The direct estimates are usually higher than the National Account figures.

that is adequate for most purposes.¹ Usually cross-section studies with emphasis on saving collect balance sheet information for two different points of time with additional income information. These sets of data provide a saving estimate (calculated as changes in assets and liabilities), income and assets — usually considered the most important economic variables in a study of saving. It is also standard procedure to collect demographic and occupational information at the same time.

It is frequently argued that the comparative balance sheet approach is the superior vehicle for measuring household saving in cross-section studies. The income minus consumption expenditure approach makes saving a residual estimate and thus subject to more errors. It has been established that income is usually understated, also expenditures — although to a lesser degree — and savings are understated most of all.² Lack of

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1. This "double" approach has been used in Surveys of Family Expenditures taken by DBS. The purpose of it is to supply a check on the information given by respondents; cases where the discrepancy in the residual figures exceeds 10 per cent are either rejected or reinterviewed (see DBS, Urban Family Expenditure, 1959, p. 7). However, as these surveys are oriented towards expenditure detail, not much use has ever been made of the saving information. The coverage of the surveys has also been very limited. In recent years only the 1959 Survey provided a reasonable coverage of larger urban centers, all other surveys have been even more limited in scope.
 2. H. Lamale, Methodology of the Survey of Consumer Expenditures in 1950 (Philadelphia, 1959), p. 96.

systematic methodological research on the comparison of the two methods makes it impossible to verify the claim that the balance sheet method is superior. On the whole, there is a serious problem in the area of methodological research in consumer surveys. During the postwar period the number and scope of such surveys has grown enormously, but the methodological studies have certainly not kept up with this expansion. Ferber's statement summarizes the situation very well:

The few studies that have been made appear to indicate that more than almost any type of economic statics, data obtained from consumer surveys or budget studies are subject to substantial errors Under the circumstances, it is amazing how little attention is being given to the improvement of data collection techniques, and how much empirical analysis is focused on attempting to explain what may be no more than errors of observation.¹

The main difficulties in this area are caused by response errors which are strictly speaking not a conceptual problem. However, the seriousness of the situation makes a short discussion warranted. In this connection there are reasons to believe that comparative balance sheet data may be subject to just as serious errors as data produced by the income minus consumption approach. For example, if interviewing is done at one point of time and data collected for

1. R. Ferber, "Research on Household Behavior," The American Economic Review, LII (March, 1962), p. 54.

current and one-year-ago balances, the memory bias in the reporting of the latter items may produce under or over estimates of saving. (Unless randomness or some peculiar asymmetry in memory errors was present, either in items or among respondents, these errors would not cancel out.) Although it is true that incomes and expenditures consist of numerous small items and that fact alone increases the chances of some items being forgotten or misreported, income receipts and consumption expenditures are mostly regular in nature and thus not impossible to estimate with some degree of reliability.

Also, the accuracy of a saving estimate depends crucially on the completeness of the balance sheet items collected. If the categories are not fully exhaustive, it is often impossible to state that a change in an item affects savings. It may rather represent half of a shift transaction (e.g. switching assets) — the other half of it not recorded on the balance sheet.

In this respect it must be noted that it is standard practice in such surveys to exclude questions about currency on hand. The justification for this practice seems to be that: (a) households keep only minor amounts of currency on hand and fluctuations in currency holdings reflect only the lack of synchronization between

income receipts and consumption expenditures, i.e., that individuals keep only transaction balances on hand and hoarding is non-existent or negligible, (b) respondents would be more reluctant to reveal their currency holdings (especially when their holdings are large) than answer the other question. These assumptions seem perfectly reasonable, but tests verifying their validity would be of considerable interest.¹

So changes in currency on hand are traditionally included in the aggregate and excluded in the cross-section approach when household savings are estimated by the comparative balance sheet method. This problem is bypassed when savings are estimated by the income minus consumption approach, because consumption expenditures are recorded when actually incurred and not when income claims are converted into cash.

To emphasize again, although there is nothing intrinsically different about the saving concept in aggregate and cross-section data, it is sometimes more convenient to discuss some problems in the one rather than in the other context. In the following section an attempt will be made to discuss some of the definitional problems as they manifest themselves in cross-section data and then describe

1. This is one of the myths in survey techniques that is accepted by everybody and to my knowledge has never been checked. If hoarding is really so insignificant, the importance attached to this concept in economic theory seems to be misplaced.

some of the difficulties in measuring household savings via this approach.¹

Conceptual problems in the context of aggregate social accounting can be classified as (a) problems of sectoring and (b) problems of including or excluding certain items or transactions. Because saving is a "net" concept this dichotomy of classification is not very useful in discussing conceptual problems in measuring saving. For example, although unincorporated business is part of the business sector in the production account, all net profits from its operations are transferred into the personal sector and form part of personal saving. Is this a problem of type (a) or (b) in respect to saving? Also accumulation of insurance reserves and private pension funds, personal trusts etc. form part of personal saving because insurance companies, pension funds, trusts etc. are considered to be "associations of individuals" and thus part of the personal sector in the National Accounts. Here this appears to be a problem of type (a). On the other hand, the NTA treat insurance companies in a separate sector and transfer the net accumulation of reserves into the consumer sector. Fundamentally nothing has changed as far as personal saving is concerned, but the problem

1. The problem of collecting data about "currency on hand" discussed above is an example of this type of difficulty although it may be a minor one in terms of the difference this item makes for saving estimates.

appears to be now one of type (b).

In terms of measuring saving in cross-section data the two types of conceptual problems take the form of problems of coverage and problems of the saving definition. Here again, the distinction between the two types of problems seems no more clear-cut than in aggregate data.

CHAPTER VIII

Saving of Unincorporated Business Owners

The most important sectoring problem centers around the treatment of both farmers and non-farm entrepreneurs. According to our definition of household saving we want to include only saving accruing to individuals in their personal non-business capacity. In respect to the above mentioned group of individuals we would like to exclude all their business transactions and include only their excess income over expenditure in personal capacity. However, because there is no legal separation between the action of an individual in his personal capacity and as owner of an unincorporated business, this separation of transactions may turn out to be impossible. Not only is the legal distinction lacking, but individuals themselves seem to be unaware of a clear cut distinction between their two roles.

Evidence to that effect may be cited from information collected in Surveys of Consumer Finances, where business owners were frequently unable to segregate personal financial assets and debts from business assets and liabilities. For example, in the spring of 1959, about a fifth of all non-farm selfemployed reported

such "mixed" items.¹ This group includes also own-account professionals besides unincorporated business owners, and among the former one would expect less confusion in this respect than among the latter.²

In farm households business operations and household income and consumption are even more intertwined. So among all unincorporated business operators the occurrence of inability to segregate personal from business transactions may be considerably higher than the ratio quoted above. This, in a way, is surprising because for tax purposes some separate accounting procedure is required.

If a decision were made to treat "retained earnings" of unincorporated business in the same way as savings of incorporated

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1. Unpublished data, DBS, Survey of Consumer Finances, 1959. 14% of all non-farm selfemployed reported joint business and personal assets that could not be segregated. The most frequently reported item here were current bank deposits. Around 18% of all non-farm selfemployed reported joint debt items, most frequently instalment debt and bank loans. As the two figures represent some double counting (same units had debts as well as assets of this kind), it is only possible to state that at least 18% of all selfemployed could not completely segregate their business affairs from personal transactions.
 2. Simply because the type and value of assets and debts held in connection with a professional practice is usually far more limited than in case of a business.

businesses are treated, the increase in the owner's equity through the accrual of such saving in the business, should be viewed as an unrealized capital gain. As capital gains (particularly unrealized gains) are normally excluded from the definition of saving, the owner's saving will not reflect this increase in equity. This, however, would constitute a very artificial and unrealistic treatment considering that the owner of the business is usually free to withdraw resources from the business as he likes and reinvest all or some of these withdrawals. So accumulation of net assets in the business must be viewed as a direct consequence of the owner's decision and choice,¹ and it seems impossible to regard these decisions as independent from the personal spending and saving patterns of the businessman.

In the light of these difficulties it must be admitted that segregating out and excluding "unincorporated business saving" from the saving of their owners is not only a hopeless proposition empirically but also not clearly defensible on conceptual grounds. This is, of course, a very unsatisfactory state of affairs because the dichotomy between consumers and producers is deeply imbedded in economic theory. However, to implement empirically this separation in this case seems to run counter to all reasonable considerations.

1. With the possible exception of involuntary inventory accumulation. However, on this point, see discussion on p. 62 above about the segregation of "free" and "forced" saving, etc.

On the other hand, it seems hardly acceptable that the whole picture changes completely as soon as an owner incorporates his business. An examination of the smaller businesses on the borderline of the two groups is likely to show very little difference in terms of the behaviour of their owners in respect to net profits. Principal stockholders in private (closely held) corporations may have just as much control over business resources as owners of unincorporated business. However, if this line of argument is extended, a good case may be made for regarding retained earnings of all corporations as part of the savings of their stock holders. Such an excessive broadening of the household saving definition would not serve any useful purpose, and except for some very special analytical purpose, saving that is completely outside the control of individuals should be excluded from household saving.¹

Obviously the line has to be drawn somewhere, and as in all problems of classification this decision has to be to some extent arbitrary. Keeping in mind the requirement that saving behaviour should be examined for as homogeneous groups as possible, it seems advisable when cross-section data is being collected that at least farm households be segregated from all other households, and if possible also the owners of unincorporated businesses.

1. For some analyses it may be desirable to allocate all national saving to individuals. However, then the whole sectoring principle breaks down, and there is no point in talking about household saving in such a context.

There is ample evidence that saving behaviour of these two groups differs significantly from that of other households. Farmers have the highest propensity to consume, non-farm non-business households the lowest, and non-farm entrepreneurs a propensity that lies between these two magnitudes. For example, in the Klein-Golberger model of the USA economy farmers, business owners and all other consumer units are treated separately in the consumption equation. The ratios of the marginal propensities to consume for the three groups were estimated from cross-section studies and introduced exogeneously into the aggregate consumption equation. This equation yielded for the period 1929 to 1950 the following estimates of marginal propensities to consume out of:

	MPC ¹	MPC ^{*1}
farm income	0.36	(0.51)
business income	0.46	(0.60)
wage income	0.62	(0.81)

Numerous studies have confirmed that the entrepreneurial propensity to save is considerably higher than that of other households. As a rule, at income levels above the average, entrepreneurs save a larger share of their income than other

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1. L.R. Klein and A.S. Goldberger, An Econometric Model of the United States, 1929-1952 (Amsterdam, 1955), pp. 54-and 63-64. The bracketed figures MPC^{*} refer to the long run coefficients in equilibrium; whereas MPC is estimated with lagged consumption ($C_t \neq C_{t-1}$) exerting an independent influence.

households in the same income size groups. At lower income levels, on the other hand, they dissave more than other households. This behaviour pattern can be explained with the obvious tie-in of saving and investment motivations — for farmers and businessmen the incentive to invest in productive business assets may work as a strong motivation for saving more. Another explanation runs in terms of the greater variability of income for farmers and businessmen. The permanent income hypothesis would emphasize this as the main reason for higher saving. If the correlation between transitory income and transitory consumption is zero and transitory income components are more important for entrepreneurs than other households, they will consume less and save more according to Friedman's hypothesis.

There is some evidence, although far from conclusive, that unincorporated business owners still save more out of "personal" income with retained business earnings excluded than non-farm, non-business households. However, Klein and Margolis qualify these results by emphasizing the conceptual and data problems involved.¹ So the differences in observed behaviour may not be entirely due to measurement problems caused by the inability to segregate personal from business transactions (as frequently stated), but

1. L.R. Klein and J. Margolis, "Statistical Studies of Unincorporated Business," The Review of Economics and Statistics, XXXVI (February, 1954), pp. 3-46.

may at least be partly due to inherently different behaviour.

In addition, practical considerations make it desirable to measure saving by farm and business households separately from other households. Special collection procedures are usually required to determine income and consumption of farm households. Income in kind (mainly food and fuel produced on the farm) is an important component in total farm income. It poses an interesting problem when saving ratios are calculated and compared with non-farm households. Income in kind is by definition all consumed, so the heavier weight of this component in farm incomes would (in the absence of other differences) lower the savings ratio of farm households in comparison with other households if income in kind is included in the measure of income and consumption.¹ However, the other influences must more than compensate for this effect because farm saving ratios have always been found to be higher than those of all other households.

In addition to farmers and business operators who should be treated as separate groups in cross-section studies of saving,

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1. Klein and Goldberger use disposable money income of farmers and exclude income in kind, because according to a war-time study, the exclusion or inclusion of income in kind made very little difference to the estimates of the farmers' propensity to consume — a rather surprising conclusion. See Klein and Goldberger, pp. 61-62.

the question arises how to treat selfemployed professionals. They are frequently grouped with unincorporated business, but this is not necessarily the correct solution in this case. Although empirical evidence to this effect cannot be presented here, the saving behaviour of this group may be altogether different from business owners. The measurement problems are also not as complex as for the other two groups. Unlike businesses, lawyers, doctors, accountants and other professionals acquire real capital goods to a limited extent in connection with the conduct of their practices, and invest their saving in financial claims as do other households. Their incomes are also far less variable than those of businessmen or farmers. Without any further investigation of the problem it is difficult to take a concrete position, but it seems that the households of such professionals may be left in with the rest.

The difficulty of implementing the above suggestion is that both problem groups — farmers and business owners — are a decreasing proportion of the working population. This is a well-known fact in respect to the number of farmers which has been declining not only as a proportion of the total population (and of the labour force) but also in absolute terms during the last three decades. The proportionate decline in the number of unincorporated businessmen has received less attention. The crude estimates presented in the Appendix, Table 13, show that the number of "business" selfemployed as a proportion of the total non-agricultural

labour force has declined from 10 per cent in 1941 to 8 per cent in 1961.¹ It has also been established that the number of self-employed is overestimated in official statistics. For example, when a subsample of selfemployed and own account workers from the labour force survey of March and April 1962 was re-examined, it was found that at least 14 per cent of all selfemployed persons were employees of incorporated businesses and in fact were paid workers rather than selfemployed.² The percentage quoted above is the minimum estimate of cases misclassified. It includes only the definitely established cases, and the actual degree of overestimation of this category may be as high as 20 per cent.

A similar bias is present in census statistics and the main reason for this seems to be that housewives, who usually answer the questions of enumerators in the census as well as in the labour force survey, think of their husbands as owning their own businesses

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1. "Business" selfemployed are estimated by subtracting from non-agricultural selfemployed the obvious non-business groups such as professionals. It is an extremely rough estimating procedure. Particularly because of the changes in the Standard Industrial Classification it is very difficult to be consistent in treatment of the various groups in 1941, 1951 and 1961. Because no published table for 1941 on a "occupation by class of worker" basis could be found, the "industry by class of worker" tables were used.
 2. Unpublished data, DBS, Class of Worker Study, Survey of Consumer Finances, 1962.

although the business is formally incorporated and legally the owner-manager has become a paid worker. It is quite possible that this overestimation has been accelerating because of the rising trend to incorporate smaller businesses. If this is the case, it is not unlikely that if official statistics reflected correctly the legal status of persons, unincorporated business owners as a group would show up as declining in absolute numbers.

The main point here is that both groups, farmers as well as unincorporated businessmen are numerically small groups — in Canada at present they represent maybe 400,000 and 300,000 households respectively out of a total of 5 million households.¹ To justify and implement separate collection of data and analysis seems difficult, especially if the above described trends continue. General sampling schemes fail to pick up an adequate number of these households (unless a very large scale survey were planned), and a very complex special sample design would have to be adopted to draw adequate samples of farm and business households.

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1. This is a rough guess based on the numbers estimated from the Survey of Consumer Finances, 1962. This survey deals with family units (equivalent to my technically imprecise usage of the term "households") classified by major source of income. There were 4,800,000 non-farm family units in Canada in the spring of 1962, of them 366,500 reported as their major source of income net income from selfemployment (includes professionals). In addition there were 437,000 farm families in the country. See DBS, Distribution of Non-Farm Incomes in Canada by Size, 1961.

Nevertheless, because of their high saving ratios these two groups are of special interest in measuring household saving. Their contribution to total household saving may be considerably higher than their numbers suggest.¹ No Canadian data exist that would indicate the importance of entrepreneurs as savers. There are also difficulties in interpreting American data on this question.

Friend and Kravis find it impossible to reconcile estimates of the share of total personal saving attributable to entrepreneurial personnel derived from U.S. survey and aggregate data.² According to survey estimates (a composite estimate utilizing various survey results) saving of farm operators and owners of unincorporated business owners may on the average have constituted approximately fifty per cent of all personal saving in 1948-50.³

Aggregate data, on the other hand, show that business investment in non-corporate enterprise has been a very small percentage of personal saving. Although aggregate data measure business investment (a mixture of retained earnings and net current

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1. Given the higher propensities to save, this would depend directly on the share of disposable income received by farmers and business owners.
 2. I. Friend and I.B. Kravis, "Entrepreneurial Income, Saving and Investment," American Economic Review, XLVII (June, 1957), pp. 269-301.
 3. Ibid., p. 270. Table I shows farmers' share in personal saving as 11.0% and share of unincorporated business owners as 35.0 to 45.0%.

transfers of proprietors' capital to business) and not total saving by business owners, the differences of the shares in personal saving implied by these estimates are so vast that the authors conclude: "There appears to be no plausible basis for reconciling the opposite conclusions indicated by the two sources".¹

In spite of this lack of information on the share of farmers and business owners in total household saving, it is interesting to speculate about the possible influence of the decline in the number of entrepreneurs on the overall saving-income ratio. If in the past entrepreneurs contributed proportionately more to total saving than other household, it is tempting to predict that the saving-income ratio will fall as the number of farmers and business owners declines. This, however, is most certainly an oversimplified view. The composition of the entrepreneurial group discussed here is very heterogeneous and it is unlikely that the depletion in numbers will take place right across the board without disturbing the composition. For example, it is quite possible that marginal farmers with low incomes and negative saving on the one hand and high income businessmen on the other are deserting the entrepreneurial group. What would be the net effect of such a simultaneous movement on the saving ratio? It is also important

1. A. Friend and I.B. Kravis, "Entrepreneurial Income, Saving and Investment," American Economic Review, XLVII (June, 1957), p. 272.

to know what happens to the income distribution, saving and consumption patterns, etc., when such structural changes occur.

There is one result that can be predicted with reasonable certainty. If the trend to incorporate businesses continues, part of household saving will become "retained earnings" of incorporated business -- merely a definitional shift that will not affect ceteris paribus the volume of total private saving. It will lower household saving and increase business saving, a complication that must be allowed for in historical analysis.

Saving by private non-commercial institutions constitute another problem that is most conveniently treated as a problem in sectoring or coverage. Although by definition such organizations as churches, universities, labour unions, charitable institutions, private and public hospitals etc. make no profit on operations, their investment income and donations received from other sectors are treated in the National Accounts as part of personal saving. On other grounds there are perfectly good reasons for including non-profit organizations in the personal sector,¹ but in terms of the saving concept it is an anomaly. This is a component that should always be removed from personal saving when the behaviour of household saving is examined. No estimate of the size of this component

1. DBS, National Accounts: Income and Expenditure, 1926-1956.
Items 120-122, p. 123.

is available, because investment income of the personal sector is estimated residually. In cross-section data the need for excluding private non-commercial institutions is so obvious that nothing further needs to be said on the subject.

CHAPTER IX

Saving through Pensions and Insurance in Cross-section Data

A far more complex problem in relation to cross-section measurement of household saving is the inclusion of the growth in insurance company reserves, private pension plans and personal trusts in household saving. From the aggregate point of view there is a pretty clear justification for including these forms of saving in the estimate of personal saving. These savings accrue in the hands of intermediaries on behalf of households; individuals may have some control over these funds, although the degree of control may vary widely between different types of plans. Premiums paid into retirement funds and to insurance companies are reductions in current consumption, etc. So as long as aggregate household saving is measured by the income minus consumption approach there is no objection to the inclusion of these economic units in the personal sector. However, if a comparative balance sheet approach is adopted, this treatment would be completely unsatisfactory. The financial assets held by insurance companies, pension plans etc. should be distinguished from financial assets held by households directly and thus the role of these financial intermediaries in the personal sector clearly shown. Household saving may have to reflect the

increase in net worth of insurance companies, pension plans, personal trusts etc., but this should appear as a separate item on the households' balance sheet as (an increase in "claims against insurance companies etc." and not as increases in assets held by these agencies). When the same problem is approached from the individual household level we encounter serious difficulties in measuring this component of saving.

At this point it seems necessary to clarify further the basic considerations in respect to measuring household saving in cross-section. As pointed out before, the exact definition that should be followed in the measurement of saving depends on the purposes of analysis. Carrying this consideration to its ultimate logical conclusion would mean that for each study new data should be collected. This, of course, is an impossibility and data collection (particularly by government or other public agencies) should be geared to an "all purpose" definition that could serve as many purposes as possible, and it should include flexible components that would allow for adjustments to alternative concepts.

Cross-section household saving data are most frequently wanted for purposes of studying saving behaviour and motives of individuals. In fact, studies utilizing such data frequently try to incorporate clearly psychological variables in their explanations.¹

1. For example, expectations about income, prices etc.

If saving is a purposeful activity in which individuals engage with some plans and goals in mind, obviously the relevant definition of saving (that which influences their behaviour) is what individuals themselves consider to be saving.

This approach to the problem entails several difficulties.

Goldsmith finds that:

No definition exists which is of equal motivational significance for all economic units, or even significant at all for every one of them. Since no attempt has yet been made to find out empirically what the different types of economic units actually regard as "saving", it cannot be asserted with confidence to what extent the definition adopted in this study coincides with the concept of saving which guides the relevant economic actions of typical economic units. 1

In other words, this subjective definition of saving may well vary from person to person, so that it would be impossible to interpret the collected and grouped data. In addition to Goldsmith's doubts there may be other reasons why the subjective definition of saving cannot be used as an operational concept. Individuals may be more aware of some components of saving than of others. Although the latter may be important influences in terms of individual behaviour, particularly in terms of long range plans, these components may not be easily quantifiable or they may be less liquid than other components.

1. Goldsmith, A Study of Saving . . ., II, p. 2.

To illustrate this proposition, if individuals are questioned about what they consider to be their "savings", the immediate reaction usually is bank deposits, bonds and stocks. This first response is always phrased in terms of the present value of their most liquid assets. On this basis the relevant saving definition should be some cash concept, not a sophisticated concept based on accrual accounting, and very definitely should include realized capital gains and exclude capital losses!

However, further investigation would reveal that reduction of debts (most important in the form of increased equity in homes), and other factors definitely enter the long range saving plans. It is inconceivable that endowment insurance policies, future retirement benefits etc. have no influence on the saving behaviour of individuals, although in most cases they will be unable to quantify these factors.¹

So for these two reasons — that there is no unique clearly identifiable notion in the individual's mind about the concept of saving and even if there were, it would not be identical for all persons — a definition of saving based on the individual's

1. These non-liquid, non-quantifiable components of saving must certainly be allowed for when it is hypothesized that saving decisions are made over a long time horizon. For short-term analysis (e.g. forecasting the cycle etc.) it may be appropriate to weight the saving components in some fashion according to their immediacy of impact.

own idea of saving must be rejected as a basis of measurement. This does not mean that these considerations should be completely disregarded when formulating definitions for measuring individual saving, particularly if the purpose of analysis is to throw light on saving motivations. It simply means that our present techniques and knowledge are unable to cope adequately with the complications explained above. Presumably more research into the individual's own notion of saving would help a great deal. Also some probability technique that will allow for the conditional nature of some saving components may be useful. All these areas of research seem to lie at least partly in the psychologist's domain. Until more is known about these matters, the best economists can do is use concepts that they on a priori grounds consider useful.

This digression has demonstrated the peculiar quality of savings in the form of retirement pensions and endowment insurance. These forms of saving are growing in importance, possibly replacing other forms of saving¹ and presumably having a profound influence on saving behaviour of individuals. However, when measuring personal saving in a cross-section study, no clear prescription exists how to treat this problem.

1. See Chapter VI above.

On a micro-economic level it is impossible to even approximate the aggregate treatment where the total accumulation of reserves is counted as part of personal saving. Dealing with retirement pensions first, this accumulation of reserves consists basically of: (a) contributions by individuals, (b) contributions by employers, (c) investment income accruing to the fund, less (d) benefits paid to individuals.

Through the survey method of collecting information it is possible to ascertain component (a) and (d); individuals will sometimes have an idea about the size of (b), but hardly ever about component (c). So for practical reasons it is impossible to measure household saving on a uniform basis in aggregate and cross-section data. Also conceptually it is far from clear whether the aggregate treatment can be justified from the point of view of individual households. Although we previously rejected a subjective definition of saving, a complete disregard of the individual's own conception about these matters will lead to ridiculous results, particularly if the data are used for analysis of motivations, etc. In this respect regulations about vesting and the conditions that entitle a participant to benefits may play an important role.

If employee contributions are refundable (which is the case for most private pension plans), there is little doubt that individuals will view this part of pension funds as their own

savings — although perhaps as "forced" savings. It is not a liquid form of saving, because these contributions become refundable only under certain conditions, and most of these conditions are outside the control of individuals. However, ultimately these premiums will become available to the contributor (or his heirs) for consumption either in the form of a lump sum payment or as part of benefits paid over a period of time.

Usually employee contributions are easily quantifiable. Individuals can be asked to report their annual contributions into pension funds. By using simple accounting techniques each individual will take into account at least this part of his accruing claims against private pension funds when making current consumption-saving decisions.

The problem becomes considerably more complex when the employer's contribution is considered. Employer contributions can be viewed as reductions in current consumption of employees if in their absence (a) cash wages paid would have been higher, or (b) output prices would have been lower. It is considered unlikely that employer contributions have the effect of reducing profits. Hall says:

In a relatively free and more or less competitive economic system these cost and benefit attributes

are more likely to work themselves out through the wage and product price structure rather than on profits. 1

As indicated above, the individual may not know the size of his employer's contributions on his behalf, also the exact terms of vesting may or may not be known to him. Vesting of the employer's contributions in the employee may be conditional on the years of service, length of participation in the plan, age of the employee, etc.

Also the probability of terminating employment before pensionable age may be an important consideration. If an employee is certain that he will continue with the same employer till pensionable age, he is likely to consider his accruing pension claims (or their discounted present value?) as saving — regardless of the source of these accruals. However, at the same time he may be very ignorant about the exact size of these savings.

Investment income of pension funds is also treated in aggregate saving as accruing to present and future beneficiaries. It is difficult to dispute the conceptual soundness of this treatment in aggregate data, but in cross-section studies survey methods are unable to allocate this saving component to individual households.

1. Hall, p. 794. This point of view has not been proven by empirical evidence. It is a problem similar to shifting of business taxes and attempts to verify empirically various hypotheses about tax shifting have not yielded unambiguous results.

Also, as in the case of employer contributions, it may depend on some very complex and uncertain expectations whether the individual considers this component as part of his saving or not. Although he is certainly unable to quantify this component he may be vaguely aware of it and make allowances for it in his behaviour (e.g., implicitly include them as part of future benefits which he expects to receive).

The treatment of retirement benefits paid out to beneficiaries is considered as a form of dissaving in aggregate data. Although consumer surveys have no special difficulty in picking up this item, it is usually treated as current cash income and not as a capital transfer. Here both treatments seem realistic and consistent from their own point of view, but it does not seem possible to reconcile them.

So cross-section data can only reflect the individual's own contributions to pension plans as saving. The employer contributions and investment income of pension funds have to be disregarded. Benefits paid to individuals have to be treated as income rather than negative saving.

These divergences in treatment result in substantial differences if aggregates are estimated from either cross-section data or time series data. For example, in recent years in Canada the trustee pension plans alone (and excluding all insured plans)

accounted for a difference of over \$200 million between annual employees contributions and annual increases in funds.¹ Under the assumption that all pension benefits paid out are consumed, aggregate saving in respect to trustee pensions estimated from cross-section data would be lower by this amount than the same component in time series.

The growth in employer contributions plus investment income of pension funds has been exceeding the growth of benefits paid out and the difference between cross-section and time series saving aggregates has been widening. It is quite likely that this has been the historical trend in the last decades.

There is no reason why the two aggregates should always conform. It is obvious that many other reasons may cause also substantial differences. In fact, statisticians usually warn that cross-section data is not meant to produce reliable aggregates. Nevertheless, this particular case deserves special attention because here the difference is not due to technical causes but to conceptually different treatment.

Total saving can always be adjusted for this difference if consistency were required. This would involve either removing certain components from time series or allocating them in some

1. See Table 11, Appendix.

fashion to cross-section data. Inclusion or exclusion of the difference must depend entirely on the analytical problems at hand. I am not aware of any explicit recognition of this problem in the literature, in particular with respect to its implications on estimating propensities from the two sources of data.

Measuring saving in the form of insurance poses similar problems. Again it is impossible to treat this component in budget surveys the same way as in aggregate statistics. To some extent it is even more complicated than the case of pensions. Not all of insurance premiums paid can be counted as saving since at least part of the premium is a charge for services rendered and should be considered consumption. All term insurance premiums are just such consumption expenditure.

Usually individuals are unable to allocate premium payments on a "mixed" type of policy between consumption (i.e. term insurance) and saving. Also as in the case of pensions, individuals will be unaware of the size of investment income accruing on their behalf with insurance companies. As an alternative, household surveys sometimes attempt to collect the change in cash surrender values of insurance policies and identify this change with saving in the form of insurance. This may indeed be a fair approximation of the individual's own idea about his saving and in a way to be preferred to identifying premiums with saving. Yet this approach also involves

several difficulties. Individuals cannot be depended on to know the cash surrender values of their policies, whereas usually they are able to report premiums paid correctly. Furthermore, the sum of all changes in cash surrender values will not necessarily equal the total changes in life insurance funds over the same period of time. Normally it would leave a residual in the hands of insurance companies that must be regarded as some form of business saving. In fact this treatment of insurance in surveys will result again in a discrepancy between aggregate and cross-section data that cannot be bridged for practical and conceptual reasons.

Considering the growing importance of contractual saving in general and pensions in particular, it is not possible to go on ignoring the problems outlined above. Increased saving in the form of pensions may have serious distributional effects. It is quite possible that households who previously were non-savers or negative savers may now become positive savers.

Also, the trend of growing pension coverage may continue for some time to come. In 1961, 27.3 per cent of all persons filing tax returns made either pension contributions or contributed to voluntary retirement plans.¹ The extent of pension coverage is

1. Unpublished tabulations provided by the Department of National Revenue, Taxation Division indicate that 26.3% of all returns filed showed pension premiums and 1.0% contributed to voluntary retirement funds.

very uneven among occupational groups and ranges from over 90 per cent for teachers and professors to around 1 per cent for some self-employed, although for the latter participation in voluntary retirement plans is more prevalent and growing in importance.

Allowing for non-contributory pension plans, the total coverage is a third of the total employed labour force.¹ On the basis of this information it is obvious that there is a lot of room for pension coverage to expand. As shown before, private (non-government) pension funds have been growing at a fantastic rate in recent years and one would expect this trend to continue unless the Canada Pension Plan changes the situation.

In view of the difficulties in collecting information on saving in pension and insurance, some methodological research in this area seems imperative. It may be possible to collect contributions and premiums from households and apply a conversion factor to the data to arrive at an estimate of saving.² Conversion factors must be calculated from aggregate data. This would, of course, be a very crude method because different pension plans and insurance policies may have different ratios of contributions to saving.

1. DBS, Pension Plans: Non-Financial Statistics, 1960. In 1960, 81.6% of all persons covered by pension plans contributed premiums. Thus to adjust the proportion of contributors to the proportion of all persons covered, the following calculation is necessary $(26.3/81.3 \times 100) + 1.0 = 32.3 + 1.0 = 33.3$.

2. Suggested-by Dr. A.G. Irvine, DBS, Central Research and Development Staff in interview on March 2, 1965.

Aggregate data are likely inadequate to allow a great deal of refinement in this direction and the collection of very detailed information from households about the type and exact terms of their pension and insurance contracts is also not really feasible. However, even a crude adjustment for these forms of saving will allow their inclusion in cross-section studies, and some very different conclusions may emerge if this broader concept of household saving is examined rather than the discretionary forms of saving only. The point made before about the interrelationship of saving components and the importance of examining all saving must be repeated again.

SUMMARY AND CONCLUSIONS

It is of some interest and importance to quantify the saving function for Canada. It has serious implications for the growth and stability of the Canadian economy. Any serious attempt to examine Canadian saving and to come to any conclusions about the major factors that influence it, must disaggregate total saving into: (i) saving done by different sectors, and (ii) saving in different forms (i.e., in the form of investment in real assets, paper claims, etc.). Although there are certainly interesting and complex interrelationships at work among components of such a system of classification, an analytical examination of Canadian saving must start with work on individual sectors.

Dealing here with the household sector only, an attempt was made to examine some of the problems that need clarification before a measure of household saving can be devised that would be suitable for determining the savings function. The household sector was chosen because it offers an opportunity to test some interesting theoretical propositions about consumer behaviour, and because the household sector contributes a considerable proportion of total savings in Canada.

Although the share of household saving as a proportion of total gross saving in Canada has been moderate, households contribute in some years as much as half of total net savings. In the capital market the household sector is the largest net supplier of funds, because households save more than they invest, which is generally not true of other sectors in the income, particularly not of the business sector.

Households form a more or less homogeneous group in the economy. At present there exist no data for Canada that would make it possible to examine the saving behaviour of the individuals in their personal capacity. So each aspect of household saving that is chosen for discussion is first examined in terms of its present treatment in the social accounts. Suggestions are made for a changed treatment when the arguments examined seem to justify it. Whenever possible, actual adjustments are made to existing data to illustrate the change in treatment.

In several cases the present treatment was accepted as the only possible one. So it was found impossible to separate the behaviour of unincorporated businessmen into "personal" and "business" components. Also the treatment in aggregate statistics of increases in pension and insurance funds as part of personal saving, although debatable, cannot be improved upon in the light of present knowledge.

On the other hand, for household savings behaviour to make any sense, purchases of houses and durable goods must be viewed as investment in real assets by individuals. Viewing saving as a planned and rational activity, it is very important to consider saving in all its different forms, because substitution and complementarity may be operating between components.

The examination of unincorporated business and farm saving revealed that this group of households forms a diminishing proportion of the working population in Canada. The suggestion was made to treat these households as a separate group in measurement and analysis because their saving behaviour is significantly different from that of other households. However, the relative decrease in this group of households may make it difficult to implement the above suggestion. General sampling schemes usually fail to pick up an adequate number of selfemployed households, and special means have to be devised to permit a separate analysis of these high-saving households.

The most interesting findings that emerged from this examination of various components of household saving were the importance and stability of investment in real assets and the surprisingly large and growing size of contractual saving. Examining the utilization of adjusted gross saving, a large (in all years more than 50 per cent) and relatively stable amount went into real investment and the fluctuating element that seemed to bear the full

brunt of adjustment in the total volume of saving was financial saving. These observations refer to the period from 1946 to 1954 and are subject to many errors, so no sweeping conclusions can be drawn from this. The importance of real investment is exaggerated insofar as capital consumption allowances are not deducted and the analysis is done on a gross basis.

Financial saving (or investment), taking the form of acquiring net claims on the rest of the economy, contains also a large stable component. Contractual saving in the form of pensions and insurance are currently as much as fifty per cent of personal saving. As total saving by individuals fluctuates with the level of economic activity, the contractual saving component keeps growing at a fairly steady rate, and discretionary financial saving undergoes large cyclical fluctuations.

Some very interesting long term problems are connected with the growth of contractual saving, particularly the phenomenal growth of trustee pension funds. It is pointed out that at present there are serious difficulties in measuring this component of household saving. The customary treatment of pensions and insurance in aggregate time series is totally different from the usual cross-section treatment.

The question whether there is substitution between contractual and other more traditional forms of saving has

tremendous implications for the long run savings ratio, the stability of the system, etc. It may also offer some valuable insights into saving motivations. Before any of these questions can be tackled, the conceptual problems that at present complicate the measurement of these saving components have to be solved.

Investigations into the interrelationships of total household saving and its components must likely turn to cross-section data, because answers to questions about saving-behaviour are more readily found at the micro-economic level. At present, survey methods cannot adequately handle the measurement of saving in the form of pensions and insurance. Easily measurable is only the individual's own contribution to pension funds or his insurance premiums. It was found unacceptable to equate these payments with savings in pension and insurance funds. Only after these methodological problems have been solved, would it be possible to measure household saving in a meaningful way and extract from the data information about the functional relationships that determine the level and composition of saving.

With the impending introduction of the Canada Pension Plan some of these questions are of more than theoretical interest to Canadian policy makers. It seems most hazardous to speculate on the basis of existing information about the effects of the Pension Plan on saving behaviour. Research on the subject has not produced

any unambiguous results that would allow us to predict whether the Pension Plan will affect other forms of saving by: depressing them by the full amount of the new pension savings, depressing them by less than the full amount of the new pension saving, not depressing them at all, or increasing them.

Many interesting problems that have important implications for the concept of household saving and its measurement have only been touched upon in this paper. Among these are capital gains, income in kind, depreciation on real assets, etc. Other important problems have not even been mentioned.

Possibly the most interesting and topical problem, which has not been discussed at all, is the question of investment in human resources. What part of total expenditure on education should be considered consumption and how much investment? How does this affect household saving? Although education is largely financed by public funds, should the part that is financed privately be considered personal saving? These and other intriguing questions form an extensive field of study that could not be tackled within the scope of this paper.

Some of the problems discussed have received a great deal of attention in the literature. For example, on consumer durables and entrepreneurial saving this paper mainly summarizes the well documented discussion on these subjects. At the same time an attempt

was made to quantify these items in respect to the Canadian economy and speculate about their importance.

It was found that other areas such as pensions and insurance (and to a lesser degree other forms of contractual saving) were practically ignored in the literature. Presumably this is mainly due to the fact that these components of saving are relatively stable and, for that reason, of little interest to the short-run forecaster whose interests have largely dominated this area of research. Considering the remarkable growth of these components and their possible influence on the distribution and level of saving in the community, this seems like a dangerous oversight. The difficulties in measuring these forms of saving in cross-section studies may have contributed to this neglect. Important decisions in respect to government stabilization policy, as well as general growth prospects of the Canadian economy, depend on answers to some of the questions raised in this paper.

Appendix.

TABLE 1

Ratio of Gross Domestic Saving^{a)} to Gross
Domestic Product by Components,
Canada, Selected Years

	Personal %	Gross Business %	Govern- ment ^{b)} %	Foreign %	Residual Error %	GDS/GDP %
1926	8.5	16.7	3.0	- 2.6	- 3.2	22.5
1929	- 1.4	16.4	3.2	5.5	0.5	24.2
1932	- 7.0	14.8	- 4.8	2.8	2.1	7.9
1935	- 1.8	15.4	- 1.6	- 3.3	2.6	11.4
1938	1.2	16.3	0.0	- 2.0	0.7	16.2
1941	6.1	13.7	6.0	- 6.6	1.0	20.0
1945	12.4	12.7	-13.0	- 6.4	1.8	7.6
1947	4.2	11.0	9.5	- 0.2	- 0.2	24.3
1950	4.0	14.9	7.1	2.0	- 0.4	27.7
1953	5.9	15.2	5.2	2.0	0.6	28.9
1955	3.5	16.9	4.7	2.8	- 0.4	27.4
1958	5.6	16.1	1.3	3.7	0.3	27.0
1959	4.4	16.2	3.1	4.6	0	28.2
1960	4.7	16.1	2.6	3.6	0	26.9
1961	4.6	15.7	1.6	2.7	- 0.3	24.4
1962	6.6	15.5	2.6	2.3	- 0.6	26.4
1963	6.9	15.8	2.8	1.3	- 0.6	26.1

a) Gross Domestic Saving defined as being equal to Gross Domestic Investment.

b) Government Saving defined as surplus (+) or deficit (-) plus government expenditure on non-military capital goods.

Source: Calculated from DBS, National Accounts: Income and Expenditure 1926-1956, 1962, 1963.

TABLE 2

Net Domestic Saving^{a)} by Components, 3-year Averages,
Canada, Selected Years 1927-1963

	1927-29	1937-39	1947-49	1950-52	1953-55	1955-57	1958-60	1961-1963
	(billions of dollars)							
1. Personal saving	.30	.21	.81	1.19	.99	1.12	1.51	2.17
2. Net business saving	.21	.17	.60	.73	.73	.84	.83	.76
3. Government saving ^{b)}	.21	.10	1.15	1.46	1.04	1.41	1.40	.85
4. Foreign saving	.12	-.13	-.20	.23	.52	1.15	1.23	.74
5. Residual error	-.02	-	.02	.01	.01	.02	.01	-.18
Total net dom. saving	.82	.35	2.38	3.62	3.29	4.55	4.98	4.34
	(percentages)							
1. Personal saving	36.6	60.0	34.0	32.9	30.2	24.7	30.4	50.0
2. Net business saving	25.6	48.6	25.2	20.2	22.3	18.5	16.6	17.5
3. Government saving ^{b)}	25.6	28.6	48.3	40.3	31.6	31.0	28.2	19.6
4. Foreign saving	14.6	-37.1	- 8.4	6.4	15.7	25.3	24.7	17.0
5. Residual error	- 2.4	-	0.8	0.3	0.2	.5	0.2	- 4.1
Total net dom. saving	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

a) Net Domestic Saving is defined as being equal to Gross Domestic Investment less depreciation.

b) See footnote b) in Table 1.

Source: 1927-1952 Calculated from Hood and Scott, Table 7E.1, p. 509.
1953-1963 Calculated from DBS, National Accounts 1926-1956, 1962, and 1963.

TABLE 3

Balances of Saving over Investment by Sectors,
Canada, 1946-1954
(millions of dollars)

	1946	1947	1948	1949	1950	1951	1952	1953	1954
I Consumers	892	494	994	926	662	1334	1291	1312	809
II Unincorporated business	- 282	- 457	- 548	- 690	-1008	-1077	-1073	-1177	- 828
III Non-financial corp.	- 203	- 721	- 359	- 75	- 385	-1426	131	- 165	68
IV Government enterprises	59	- 80	- 356	- 371	- 205	- 362	- 457	- 622	- 383
IV - Non-financial business	- 426	-1258	-1263	-1136	-1598	-2865	-1399	-1964	-1143
V Banking	24	20	15	21	17	15	27	45	14
VI Life insurance	1	0	1	-	-	-	-	-	8
VII Other finance	- 4	10	- 38	- 16	5	10	3	-	32
V - VII Financial business	21	30	- 22	5	21	22	28	34	38
VIII Federal government	- 248	684	760	480	635	1021	253	142	- 100
IX Provincial government	97	107	32	- 1	63	78	143	203	155
X Municipal government	- 3	- 38	- 84	- 106	- 113	- 114	- 143	- 170	- 186
VIII - X Government	- 154	753	708	373	585	985	253	175	- 131
XI Rest of the world	- 333	- 19	- 417	- 168	330	524	- 173	443	427

Source: National Transaction Accounts, pp. 497-505.

TABLE 4

Estimates of Annual Investment in
New Owner-Occupied Housing,
Canada 1946-1954
(millions of dollars)

	New Residential Construction			Estimated Investment in owner-occupied housing
	Value of single dwellings		1/7 value of multiples	
	Non-farm	Farm		
Section A				
1946	315.2	11.1	7.0	333.3
1947	400.9	12.6	11.1	424.6
Section B				
1948				470.5
1949				585.0
1950				653.1
1951				606.6
1952				605.6
1953				762.2
1954				809.9

Sources:

Section A. O.J. Firestone, Residential Real Estate in Canada, Table 75, p. 279. My assumptions are that all single dwellings and 1/7th of multiple dwellings are owner-occupied. The latter assumption is roughly equivalent to assuming 1/2 of all doubles and duplexes and none of the 3 unit dwellings are owner-occupied. It is hoped that some cancellation of error will take place - clearly not all single units are owner-occupied and not all 3+ units tenant-occupied.

Section B. Unpublished data from DBS, Business Finance Division. The method of estimation is roughly equivalent with that in Section A.

TABLE 5

Estimated Annual Capital Consumption
Allowances on Owner-Occupied Houses,
Canada, 1946-1954

(millions of dollars)

<u>Section A.</u>	CCA on all residential housing	Prop. of owner- occupied to total units, 1949	Est. CCA on owner-occupied housing
	(1)	(2)	(3)=(1) x (2)
1946	216.6		122.5
1947	246.7		139.5
1948	292.3	56.5%	165.3
1949	315.8		178.5
<u>Section B.</u>		Est. annual increases in CCA on owner-occupied	
1950		11.7	190.2
1951		13.6	203.8
1952		12.1	215.9
1953		12.1	228.0
1954		15.2	243.2

Sources:

Section A. col. 1 from Firestone, Table 78, p. 283. Col. 2 calculated from Firestone, Table 21, p. 115. Firestone's estimates of CCA are based on a straight-life method (75 years for urban, 60 years for farm housing) valued at current replacement cost. See description of method on p. 427.

Section B. is a projection forward from the 1949 estimate in Section A. The estimated annual increase in CCA is calculated at 1/50th of previous years investment in owner-occupied housing and is simply a convenient rule of thumb. This assumption, however, is not equivalent to an assumption of a 50-year useful life for new houses. It rather represents the annual depreciation on the newly erected houses plus the adjustment to a current replacement cost on the total housing stock (from 1949-54 the index for residential construction rose by nearly 30% - CMHA, Canadian Housing Statistics, 1963, Table 106) minus the decrease due to the elimination of fully depreciated housing stock (a minor item - annual increases in housing stock 60-75 years ago were small compared to the present size of the housing stock and to its present annual growth).

TABLE 6

Estimated Increase in Mortgage
Liabilities of the Household Sector,
Canada, 1946-1954

(millions of dollars)

	Increase in mtges. of total unincorp. business sector	Inv. in owner- occupied housing	Total unincorp. business inv. in construc- tion	Ratio of (2):(3)	Est. increase in mtge. lia- bilities of households (1) x (4)
	(1)	(2)	(3)	(4)	(5)
1946	150	333	658	0.506	75.9
1947	204	425	952	0.446	91.0
1948	315	470	1177	0.399	125.7
1949	370	585	1465	0.399	147.6
1950	481	653	1668	0.392	188.6
1951	410	607	1735	0.350	143.5
1952	396	606	1774	0.342	135.4
1953	544	762	2109	0.361	196.4
1954	747	810	2044	0.396	295.8

Source:

Col. 1. NTA, Table: Category C5 - Mortgages, Sector II, p. 675.

Col. 2. Table 4, Appendix

Col. 3 NTA, Table: Category B3 - Gross Fixed Capital Formation,
- Residential and Non-Residential, Sector II, p. 660-66.

TABLE 7

Adjustments^{a)} to "Increase in Claims on Unincorporated
Business Sector" (item C4 in NTA Sectors I and II),
Canada, 1946-1954
(millions of dollars)

	C4 as per NTA	CCA on owner- occupied houses	Mtge. Liabi- lities reallo- cated to household sector	Investment in owner- occupied houses	Adjusted C4 (1)+(2)+(3)-(4)
	(1)	(2)	(3)	(4)	(5)
1946	118.1	122	76	333	- 16.9
1947	143.6	140	91	425	- 50.4
1948	208.8	165	126	470	29.8
1949	305.7	178	148	585	46.7
1950	407.0	190	189	653	133.0
1951	541.2	204	144	607	282.2
1952	601.9	216	135	606	346.9
1953	508.1	223	196	762	170.1
1954	85.2	243	296	810	-185.8
	2919.6	1686	1401	5251	755.6

a) These adjustments are due to the re-allocation of investment in owner-occupied houses from the business sector to the consumer sector.

Source: Col. 1. NTA, category C4, Sector I.

Col. 2. Table 6, Appendix.

Col. 3. Table 5, Appendix.

Col. 4. Table 4, Appendix.

TABLE 8

Financial Investment of Households, Canada, 1946-54
(millions of dollars)

	1946	1947	1948	1949	1950	1951	1952	1953	1954	Total 1946-54
<u>Changes in Assets</u>										
1. Currency and bank deposits	703.6	198.8	526.5	224.7	156.3	255.7	538.6	146.3	680.2	3430.7
2. Other institutional deposits	121.2	75.2	84.2	84.2	74.3	77.3	119.0	99.7	240.8	975.9
3. Claims on unincorp. business	- 16.9	-50.4	29.8	46.7	133.0	282.2	346.9	170.1	-185.8	755.6
4. Mortgages	67.0	92.0	151.0	177.0	205.0	108.0	198.0	256.0	436.4	1690.4
5. Government of Canada market.bonds	-732.3	-259.0	-522.8	-179.0	25.8	-285.3	41.9	- 85.3	-659.6	-2655.6
6. Government of Canada non-market.bonds	475.0	175.0	55.0	105.0	46.0	65.0	81.0	382.0	458.0	1842.0
7. Other bonds & stocks ^{a)}	52.8	116.9	135.6	232.9	352.1	301.5	211.0	263.0	- 12.5	1653.3
8. Insurance and pensions	254.7	314.3	305.9	307.6	322.1	308.9	350.8	378.3	416.2	2958.8
9. Foreign inheritances & migr. funds	35.0	49.0	50.0	59.0	61.0	70.0	144.0	116.0	94.0	678.0
10. Other transactions	5.5	12.6	4.8	6.0	18.6	5.5	39.8	31.4	9.3	133.5
<u>Changes in Liabilities</u>										
11. Consumer charge accts.	27.0	70.0	36.0	19.8	26.9	28.7	25.1	31.0	23.4	287.9
12. Instalment credit	28.0	68.3	43.9	80.0	124.2	-92.7	307.2	184.1	13.6	756.6
13. Bank loans	7.0	21.0	31.5	23.9	110.5	-18.8	75.5	113.1	15.9	379.6
14. Other loans	41.2	30.9	27.3	40.9	43.5	56.5	56.3	61.7	82.0	440.3
15. Mortgages	75.9	91.0	125.7	147.6	188.6	143.5	135.4	196.0	296.0	1399.7
16. Foreign inheritances & migr. funds	65.0	69.0	84.0	68.0	57.0	77.0	85.0	91.0	89.0	685.0
17. Unpaid taxes	- 2.0	-22.0	61.0	223.0						260.0

a) Excludes trustee pension funds and retirement funds of public servants.

Sources: Item 3 from Table 7, Appendix I.

Item 15 from Table 6, Appendix I. All remaining items from NTA; Table: Sector I, Consumers, pp. 582-583.

TABLE 9

Annual Financial Investment of Households
Viewed as Increases in Net Claims^{a)} against Ultimate Borrowers
and Financial Intermediaries, Canada, 1946-1954
(millions of dollars)

	Increases in Net Claims against Ultimate borrow- ers ^{b)}	Increases in Net Claims against Finan- cial Intermediaries ^{c)}	Total financial investment
1946	- 233	956	723
1947	- 1	397	396
1948	- 291	702	411
1949	121	339	460
1950	732	112	844
1951	429	565	994
1952	911	476	1387
1953	978	102	1080
1954	17	940	957
1946-54	2663	4589	7252
1946-54	36.7%	63.3%	100.0%

a) On a net basis, subtracting increases in liabilities from increases in assets.

b) Classified as claims against ultimate borrowers: equity in unincorporated business, direct lending on mortgages, bonds and stocks, foreign inheritances and migrants funds. On the liability side; consumer charge accounts and loans from government.

c) Classified as claims against financial intermediaries: currency and bank deposits, other institutional deposits, insurance and pensions, special deposits and trust accounts. On the liability side: instalment credit, bank loans, other institutional loans, mortgages.

Source: Table 8, Appendix.

TABLE 10

Increases in Intangible Assets and Debts
of Households, Canada, 1946-1954

	Increases as a percentage of total financial investment ^{a)}			
	Lending to:		Borrowing from:	
	ultimate borrowers ^{b)}	financial intermediaries ^{c)}	ultimate lenders ^{b)}	financial intermediaries ^{c)}
1946	- 16.2	150.1	15.9	17.8
1947	36.9	151.8	36.8	51.5
1948	- 39.6	224.6	31.4	53.5
1949	47.5	135.1	21.1	61.5
1950	97.6	67.8	10.8	54.5
1951	54.4	65.1	11.3	8.3
1952	73.7	75.6	8.4	41.3
1953	102.0	60.7	11.4	51.2
1954	13.6	140.7	11.9	42.2
1946 - 1954	51.1	103.4	14.4	40.1

a) Figures expressed as percentages of total financial investment (see Table F in text). Each line adds to 100 when columns 3 and 4 are read as negatives.

b) See footnote b) in Table 9.

c) See footnote c) in Table 10.

Source:

Table 8, Appendix.

TABLE 11

Financial Statistics of Trusteed Pension Plans,
Canada, 1957-1963
(millions of dollars)

	1957	1958	1959	1960	1961	1962	1963
<u>Income</u>							
1. Contributions of employees	187	222	237	232	254	271	319
2. Contributions of employers	96	123	142	161	182	201	225
3. Investment Income	86	109	131	154	180	206	237
4. Net profit on sale of securities	2	4	3	2	4	6	9
5. Other income	24	18	3	6	4	3	6
6. Total	395	476	516	555	624	687	796
<u>Expenditures</u>							
7. Pension payment out of funds	71	87	98	108	124	135	151
8. Cost of pensions purchased	3	3	9	5	4	6	4
9. Cash withdrawals	18	24	25	30	34	42	47
10. Administration cost	1	1	1	1	2	2	3
11. Net loss on sale of securities	2	2	4	8	12	6	3
12. Other expenditures	2	4	7	2	2	2	3
13. Total	97	121	144	154	178	193	211
14. <u>Saving^{a)}</u> = income (6) - expenditures (13)	298	355	372	401	446	494	585
Difference between saving and employee contributions (14) - (1)	111	133	135	169	192	223	266

a) Saving defined strictly on National Accounts principles should exclude items (4) and (11) - realized capital gains and losses. Considering the minor amounts involved and the off-setting nature of these items, no adjustment has been made here.

Source: DBS, Trusteed Pension Plans: Financial Statistics, 1957, 1958, 1960, 1962, 1963. Estimates from earlier surveys (e.g. 1952 and 1953) are not comparable because of the limited coverage at that time.

TABLE 12

Comparison of Various Estimates of Personal Net
Saving in Canada, 1939-1954
(millions of dollars)

	1. Bank of Canada Direct Estimate of Personal Saving ^{a)}	2. "National Trans- actions Accounts" Direct Estimate of Personal Saving	3. DBS Personal Income minus Personal Expenditure on Consumer Goods and Services and Personal Direct Taxes	4. DBS Business Gross Capital Formation plus the Surplus (or minus the Deficit) on Current Accounts with Non-Residents minus Business and Government Gross Saving ^{b)}
1939.....	267		194	251
1940.....	494		287	484
1941.....	720		452	601
1942.....	1,600		1,398	1,598
1943.....	1,479		1,536	1,798
1944.....	1,885		1,753	2,052
1945.....	2,028		1,342	1,737
1946.....		932	892	954
1947.....		681	494	440
1948.....		705	994	816
1949.....		984	926	839
1950.....		1,306	662	526
1951.....		1,397	1,334	1,154
1952.....		1,777	1,291	1,694
1953.....		1,615	1,312	1,596
1954.....		1,524	809	783
Total	<u>19,394</u>		<u>15,676</u>	<u>17,323</u>

a) The direct estimates made by the Bank of Canada for the years 1946-1954 have been superseded by the "National Transactions Accounts."

b) After adjustment for inventory valuation.

Source: J.A. Sawyer and F.W. Emmerson, Estimates of Saving Prepared from Financial Transaction Accounts in Canada (unpublished paper presented at the Sixth Conference of the International Association for Research in Income and Wealth), Appendix A, p. 49.

TABLE 13

"Business" Selfemployed, Canada, 1941, 1951, 1961

	1941			1951			1961		
	M	F	Total	M	F	Total	M	F	Total
1. Total experienced non-agr. labour force ^a	2,368,163	1,004,466	3,372,629	3,329,901	1,129,222	4,459,123	4,143,443	1,685,621	5,829,064
Total selfemployed (own acct. and employer)	967,470	68,736	1,036,206	974,287	56,722	1,031,009	846,467	94,021	940,488
Less agr. selfemployed	630,628	14,030	644,658	540,199	8,201	548,400	389,506	9,193	398,699
2. Total non-agr. selfemployed	336,842	54,706	391,548	434,088	48,521	482,609	456,961	84,828	541,789
Less "non-business" self-employed: b) finance, insurance, real estate education and related health and welfare religious services to business management other recreation services	8,334 31,208 2,045 ^c (41,587)	346 8,213 370 ^c (8,929)	8,680 39,421 2,415 ^c (50,516)	10,382 32,543 2,590 (45,515)	527 5,489 254 (6,270)	10,909 38,032 2,844 (51,785)	16,327 20,194 22,917 (63,889)	864 4,037 4,474 78 1,935 518 (11,906)	17,191 5,345 24,668 633 24,852 3,106 (75,795)
3. Total non-agr. "business" selfemployed			341,032			430,824			465,994
4. (3) as a percentage of (1)			10.1			9.7			8.0

a) For 1941 gainfully occupied (non-farm) 14 years of age and older (excluding Active Service) have been adjusted by the number of persons not gainfully occupied but seeking employment (from Table 3 in the same volume) to approximate the "experienced labour force" concept. For 1951 - total experienced non-farm labour force 14 years of age and older. For 1961 - total experienced non-farm labour force 15 years of age and older.

134.
(over)

b) A rough estimate of selfemployed in service industries who do not operate business establishments (i.e. who normally do not engage in inventory accumulation and other capital formation). This is a rather arbitrary line drawn between doctors, lawyers, accountants, performers on own account etc. and laundries, hotels, motion picture theatres etc. on the other hand.

c) Includes only "on own acct.", excludes "employers".

Source: 1941 Census of Canada, Vol. VII, Table 18.

1951 Census of Canada, Vol. IV, Table 19.

1961 Census of Canada, Vol. III, Part 2, Table 9.

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