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INVESTMENT FORECASTING IN CANADA

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A. Summary

1. MEANING, USE, AND TECHNIQUES OF INVESTMENT FORECASTING

THE COMPLEXITY OF THE PRESENT AGE has set new standards for the decision-making process. What is wanted is a systematic appraisal of the problem at hand, the developments that can be anticipated, and the courses of action that may be open for dealing with a continuously changing situation. The question no longer is, Should one look ahead? It is rather, What is the most effective and scientific way of looking ahead? In Canada the federal government's increased participation in economic affairs has emphasized the need for looking ahead, and this has led to a systematic appraisal of the economic outlook. Investment forecasting is an integral part of this endeavor (see sections B 1 and B 2).

The needs for investment forecasts may be summarized as follows: (a) National economic forecasting will be a haphazard undertaking indeed unless greater knowledge can be obtained about the various components of such broad aggregates as gross national product and gross national expenditure. Capital expenditures have been one of the most important of these components in terms of both size and variability. (b) The Canadian government is facing a number of specific problems which require the formulation of positive investment and related policies. (c) Business is making its own commodity-market analyses and general economic appraisals, and capital expenditure plans provide some of the information required for intelligent planning of business operations (see section B 1).

One of the first acts of the newly organized Department of Reconstruction late in 1944 was to ask the Dominion Bureau of Statistics to organize a survey of investment intentions of Canadian business for 1945. This first survey covered manufacturing, mining, central electric stations, and telephone companies. From this modest beginning the survey was extended, so that by 1951 it covered all

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private and public sectors of the Canadian economy, including business, housing, and institutional and government investment. Ever since 1946 the results of investment-intention surveys have been published annually in the form of White Papers, and since 1947 a companion document dealing with the outlook for basic and building materials has appeared (see section B 3).

The primary objective of investment forecasting is to provide a basis for improving judgment about current and foreseeable economic conditions. It is necessary first to find out what people *intend* to do, then to arrive at a judgment of what people in fact *will* do. To achieve these objectives one requirement is to obtain through surveys and other methods an approximation of investment intentions by those who are in a position to make capital expenditures. The other requirement is to obtain a clear understanding of current economic conditions at the time investment surveys are made—to become aware of the basic forces operative in the economy, including prevailing business and government policies that will be influential in shaping events of the near future, and to weigh all the available evidence that bears on the possibilities or limitations of realizing the investment plans obtained from those who formulate them (see section B 4).

There are so many reasons—and some of these are examined later—why the results of capital expenditure surveys may not fully reflect the likely course of investment that economic policies formulated after a glance at statistical-survey results may be just as haphazard as economic policies based on a personal hunch or on "informed" opinion. Further, the economic significance of capital expenditures is of such magnitude and complexity that no satisfactory conclusions can be reached without regard to other interrelated events and influences. The main reason for this is that not only do variations in the volume and composition of capital expenditures affect levels of employment and income, prices, productivity, and the competitive position of industry within and outside the nation's borders, but also the buoyancy or inadequacy of domestic and foreign demand for a country's output may influence notably the economic climate in which investment decisions are made (see section B 4).

The most successful investment forecaster is not necessarily the analyst whose quantitative forecast is most closely matched by actual capital expenditure. As long as investment forecasting is regarded as a tool for policy formulation and not as an academic exercise, a

major criterion of the usefulness of an appraisal of the capital expenditure outlook is whether and to what degree it will assist decision-makers in a modern democracy in formulating business and public policies that contribute to a maximization of returns to individuals and to optimum national welfare. If the implementation of these decisions contributes to a change in the level or the composition of the investment program and thus proves the initial investment forecast "wrong," the purpose for which the forecast was designed may still have been achieved more effectively than if the forecast had conformed closely to realization of investment intentions and was "right" simply because neither business nor government took the appropriate steps to rectify a situation which appeared unsatisfactory from a national point of view (see section B 4).

The limitations of investment forecasts arise out of (a) difficulties encountered in organizing surveys of investment intentions and in conducting them on a continuing basis, including such factors as the extent, quality, and timing of response from business and other groups and the need to make estimates for sectors or types of capital expenditures not covered, and (b) problems deriving from the interpretation of the results of the surveys and the assessment of conditions and circumstances that may affect the extent to which investment intentions can be realized. The numerous reasons why investment intentions may differ from realization are referred to in the first part of section A 2 (see also section B 5).

Both inside and outside Parliament the results of investment forecasts have been used by government to explain some of the economic policies which it is pursuing and which it considers most appropriate to the changing economic situation. The occasions on which advance knowledge of investment plans has affected government thinking have been numerous. Examples include: the shift from anti-recession to anti-inflation policies in 1946 and 1947; the federal government's decision to curtail its own capital spending and encourage provincial governments to do the same, beginning in 1947; the formulation of capital goods import policies following the imposition of emergency exchange restrictions late in 1947; the tightening of bank credit early in 1948 in the light of continuing pressure on materials and labor from an expanding investment program; the planning for selected investment projects in areas and localities where unemployment became significant in 1949; the relaxation of bank credit early in 1949 to allow business capital expansion to the full extent of available resources; and in more recent

times the decision to embark on a number of fiscal and direct-control policies designed primarily to facilitate in a period of rearmament the carrying out of high-priority types of investment projects and to encourage the postponement of capital expenditures of lesser priority (see section B 6).

Business finds three main uses for investment forecasts: (a) Surveys of capital expenditure intentions provide estimates of the dimensions and composition of demand for capital goods. The industrial detail and regional and local data also give an indication of what kind of capital equipment is in demand and where the demand originates. Thus domestic manufacturers of machinery and equipment and of building materials, as well as foreign sellers of such items, have at their disposal a ready-made market appraisal. (b) In deciding on a short- or long-term investment program many companies have found since the end of the war that they have been underestimating the rate of capital expansion of the country as a whole or of their particular industries. Reference to industrial investment totals, past, present, and future, may give businessmen a lead in assessing realistically the rate of capital expansion that has taken place or is taking place. (c) By tying in information on anticipated investment with other data bearing on the economic outlook, business executives may be aided in their appraisal of the general situation as well as of the specific commodity markets in which they are interested (see section B 7).

Besides being used by the decision-makers in government and business, investment forecasts are an essential part of general economic forecasts undertaken by the Department of Trade and Commerce in cooperation with other departments concerned with economic policy problems. Information presented in the form of the national economic forecast is prepared for government use, and statements on the economic outlook are made from time to time both in and out of Parliament by members of the Cabinet (see section B 8).

Among the many ways in which estimates of future capital outlay can be obtained, four have become especially common in recent years: surveying intentions of buyers of capital goods, surveying sales and production expectations of sellers of capital goods, making estimates based on qualitative reports reflecting economic expectations in industry and in other sectors, and making estimates based on the projection of past trends (with allowance for growth and cyclical factors) or on a study of the interrelationship of different

economic flows or financial data. In Canada all four methods have been applied, but most reliance is placed on direct surveys of the plans of buyers of capital goods (see section B 9).

One intentions survey is undertaken at the end of the year and reviews the outlook for the following year, and the other is taken at midyear. The year-end survey is based on as full a coverage as is practical and economical. This involved in 1951 a canvass of some 17,000 firms in the business sector, with a response from about 11,000. The midyear survey is a sample survey covering about 10 per cent of the firms and about 50 per cent of the dollar totals of investment intentions. This survey is designed to obtain information not only on the changes in capital expenditure plans in the preceding six months, but also on the reasons for such changes (see section B 10).

In the case of actual spending two surveys, again, are undertaken, both based on a full coverage similar to that of the year-end investment-intentions survey. The first actual capital expenditure survey is taken at the same time as the year-end investment-intentions survey and yields preliminary estimates of capital outlay made for the current year. It provides a basis from which investment intentions for the subsequent year can be gauged. The second survey of actual capital expenditures follows early in the year and yields final totals for the year just past. The results of this survey become available in the course of the year and are incorporated in the subsequent White Paper on the investment outlook. Thus the 1951 document included revised estimates of actual capital expenditures made for 1949, preliminary estimates of actual capital expenditures for 1950, and investment intentions for 1951 (see section B 10).

A number of factors have contributed to the improvement in the quality and timing of returns: firms canvassed have been told why surveys are undertaken and to what use the results are being put and have been assured that replies of individual respondents will be kept confidential; the Minister of Reconstruction and Supply (now the Minister of Trade and Commerce) communicated with individual firms emphasizing the importance and making available the results of the survey, and asked business organizations to impress upon their membership how important it is not only to participate in the investment-forecast survey, but also to give their best judgment as to the likely amount of capital expenditures they would be making a year hence; follow-up correspondence, telephone calls, and personal visits by officials, and the advice of busi-

ness economists have helped to clear up misunderstandings and to improve the timing of the returns; extensive discussion of investment White Papers in Parliament, in the press, and at business conventions has helped to increase public understanding of the usefulness of anticipatory capital expenditure data; and finally, the generally friendly and cooperative relations in Canada between business and government have made it easier to obtain and share increasing knowledge about business behavior (see section B 11).

In the United States, investment forecasting is based primarily on quarterly and annual surveys of the capital expenditure intentions of business. The techniques employed are similar to those used in Canada, with a few exceptions. The United States survey is based on a small sample and is taken more frequently than its Canadian counterpart. The Canadian survey covers more business firms and also covers the residential, institutional, and government sectors, which are not surveyed in the United States. Also, the Canadian survey places a great deal more emphasis on detailed industrial classification and regional and city breakdown than the American survey. In most European countries estimates of future capital expenditures are an integral part of the national budget. In such countries as the United Kingdom, Norway, and the Netherlands, where war damage was great, government control of investment has been far-reaching, and statements about future capital outlay have represented substantially goals which governments considered attainable. In countries where war damage was less substantial and where government control does not go as far, for example, Belgium and Sweden, statements of future capital expenditures are more akin to investment intentions of business as surveyed on the North American continent. Surveys in non-European countries are similar to those undertaken on this continent. Among these Australia has made the most notable progress, surveying business investment intentions semiannually (see section B 12).

2. Results of investment forecasts

Surveys of annual aggregate business capital expenditure plans in Canada have in the last five years proved intentions to be close to the actual amounts reported to have been spent by industry on capital equipment, differences varying from 2 to 8 per cent. In the follow-up surveys, usually undertaken in May of the year to which the investment intentions apply, even closer results have been achieved, with variations of less than 1 per cent to 6 per cent being

indicated. In the first two years of the operations of the survey, 1945 and 1946, the results were not as close (see sections B 1 and B 2).

In Canada preliminary evidence suggests that investment intentions are more likely to be expressed in future prices in times of rapid price changes and in current prices when there is relative price stability. The latter appears to be the case even if firms are asked to express their capital expenditures in future prices. However, when price differences are small from year to year, this will not affect significantly the general usefulness of the results of business investment-intentions surveys (see section C 1).

Canadian construction expenditure intentions have on the whole come a little closer to realization than plans for the purchase of machinery and equipment. Among the reasons are the need to make advance plans because of the seasonality of construction in this country and the greater difficulty encountered by Canadians in estimating machinery and equipment purchases since substantial quantities of capital equipment are imported from abroad (see section C 1).

Insofar as surveys of investment intentions can be considered indicators of ability to anticipate future capital expenditures, manufacturing firms appear to be among the best-informed business enterprises in Canada. Variations between realization and intentions of 1 per cent for 1949, 2 per cent for 1948, and about 5 per cent for 1947 and 1950 are indications of a particularly good record. Among industries showing fairly wide differences are the railroads (see section C 3).

In the past five years capital expenditure plans appear to have come closest to realization in Ontario, Quebec, and British Columbia. This is explained to some extent by the concentration in these provinces of the larger companies, whose forecasting record is better than that of small and medium-sized companies. However, even in these regions substantial over- or understatements may occur when a change in the economic outlook occurs. The Maritime and Prairie Provinces have been consistently on the low side in estimating future capital outlay, because businessmen in both these provinces have a conservative outlook. Although large capital expenditures were projected in the Prairies, plans formulated toward the end of one year were outdated before the succeeding year was well on its way because of industrial growth associated with a rapid rate of resources development (see section C 4).

Large companies, that is, those with a business of $1 million or more a year, appear to be able to estimate their future capital outlay more closely than medium-sized or small firms. Among the reasons for the better record of large companies are the preparation of capital budgets; the availability of greater resources for making careful advance plans; the practice of making blanket capital allowances for exigencies; greater financial resources to see projects through with less likelihood of failure; and the general smallness in Canada of new firms, which are those most likely to err in estimating capital expenditures (see section C 5).

Companies undertaking large projects and making outlays of between three and six times the average of the manufacturing industry appear to be able to estimate their investment expenditures a year ahead very closely, in 1950 within a margin of less than 10 per cent. The advance preparation, planning, and consultation that go into large projects usually pay off with estimates of expenditures coming close to actual outlays. There are exceptions to this; for example, new ventures in which there is little opportunity to draw on past experience, or periods of supply bottlenecks and rising prices in which even the greater facilities of large companies may not prove fully adequate to the task of evaluating new capital undertakings (see section C 5).

In regard to the direction of capital expenditures, of 814 manufacturing companies sampled, 695 indicated a change in capital expenditures for 1950. The overwhelming majority of these companies anticipated correctly the upward or downward direction of their capital expenditures, although those expecting a decline turned out to be too pessimistic, and those expecting an increase too optimistic (see section C 5).

As for reliability over time, of 814 manufacturing companies sampled, 319 made estimates that were within 40 per cent of their actual capital outlay for 1949. But when the forecasting records of the same companies were checked for 1950, it was found that less than half of the companies could estimate their capital expenditures as closely as they had done in the preceding year. For example, of 217 firms whose investment intentions had come within 20 per cent of realization in 1949, only 92 were able to repeat the performance in 1950 (see section C 5).

Executives associated with policy formulation and management proved to be in a better position to anticipate closely capital expenditures than employees further down in the business hierarchy.

Company officers concerned with the financial aspects of business operations are more likely to underestimate capital expenditures, while executive officers and management are frequently apt to overestimate future investment outlay (see section C 6).

Reasons for changes in investment plans are largely governed by a revision in the business community's appraisal of the current economic situation and prospects for the future. As economic conditions change, so will the factors explaining variations in capital expenditure intentions. At mid-1950, for example, changes in the sales outlook ranked eighth; a year later this was the leading reason (see section C 6).

At mid-1950, reasons for upward revisions ranked as follows in terms of number of companies reporting: projects added, 28 per cent; routine underestimate, 14 per cent; inadequacy of storage facilities, 13 per cent; plant and equipment costs, 8 per cent; new products, 7 per cent; technology, 7 per cent; firmer estimate, 7 per cent; sales outlook, 5 per cent; carryover from previous year, 4 per cent; competitive conditions, 4 per cent; plant and equipment supply situation, 2 per cent; and miscellaneous, 2 per cent. In terms of the amounts of capital expenditures involved, the two leading reasons were competitive conditions and new products (see section C 6).

As for reasons for downward revisions, at mid-1950 these ranked as follows in terms of number of companies reporting: projects canceled or deferred, 35 per cent; sales outlook, 17 per cent; miscellaneous, 16 per cent; plant and equipment costs, 9 per cent; plant and equipment supply situation, 7 per cent; routine overestimate, 7 per cent; new products, 3 per cent; carryover from previous year, 3 per cent; firmer estimate, 3 per cent. In terms of the amounts of capital expenditures involved, the two leading reasons were plant and equipment supply situation and new products (see section C 6).

Response factors contributing to differences between investment intentions and realization by business include: adequacy of understanding by businessmen of what is wanted from them in surveys of capital expenditure intentions; the timing of the completion of the questionnaire (for example, more definite information can be given after investment plans have been reviewed by the board of directors in the case of public companies); the degree to which the responding officer of a company is familiar with the firm's opera-

tions and policies; and the willingness on the part of the businessman replying to use his best judgment (see section C 7).

Differences between estimates of what might be spent and what in fact is spent also arise from the need to make estimates for certain capital expenditures, including: those of sectors not covered by direct-survey technique (agriculture, fishing, individual retail stores, and residual groups in the finance and commercial sectors); those of firms not covered in industries surveyed; capital expenditures not covered, mainly capital items charged to operating expenses. Further, the statistical techniques employed may, by emphasizing regional and industrial totals, introduce substantial errors in smaller sectors, particularly where only a few firms are involved (see section C 7).

Similarities exist in Canadian and United States surveys. After a period of experimentation the quality of capital-expenditure-intentions surveys has improved in both Canada and the United States. The American surveys have stood the test of a downturn of business investment as a whole, the Canadian surveys the test of a downturn in a major sector—manufacturing. Business in the United States has on the whole been making insufficient allowance for price increases of capital goods in estimating prospective investment outlay. This experience is shared by the Canadian surveys, particularly in recent years. In some industries in which there are similarities in capital expenditure planning, differences between intentions and realization may also be of similar order, as, for example, in the case of the railroads. In both countries large companies appeared to be in a better position than medium-sized and small companies to estimate their capital expenditures in advance. Wide differences between investment intentions and realization are most likely when small amounts of capital outlay are involved, but such differences affect aggregate data in only a minor way, with overstatements largely offset by understatements. In examining the reasons why individual companies may alter investment plans, surveys in both countries indicate that these reasons will vary as economic conditions and prospects change. While in one year the sales outlook may be the principal factor, in another the plant and equipment supply situation and costs may be of major importance. There are not at present in either country sufficient observations to establish all the reasons which would explain differences between investment intentions and realization over the various phases of the business cycle (see section C 8).

There are also dissimilarities in Canadian and United States surveys. The percentage variations between business investment intentions and realization in the United States are smaller than corresponding Canadian variations in some years, with the situation reversed in other years. Among the reasons in part explaining these differences might be the preponderance of large firms in the United States. Both American and Canadian experience shows that large firms are better equipped than small firms to anticipate capital expenditures. Other reasons might include the fact that United States reaction to investment opportunities will be in many cases much quicker than that of Canadian business. Thus a bulking of new projects in one year in the United States may possibly be experienced in Canada in a subsequent year. Still other reasons might be the greater volatility in formulating investment decisions in the United States, and the fact that greater reliance is placed in the United States than in Canada on sampling techniques in undertaking investment-intentions surveys.

In Canada estimates of projected construction expenditures seem to have been more accurate than estimates of machinery and equipment purchases. The shortness of the construction season in Canada necessitates planning well in advance to permit an early start. In the United States advance planning is not so urgent, and construction plans may not be so firm at the time the intentions are stated, with the result that major cancellations or additions at a later date are more likely. In the United States there are, however, important differences, depending on the size of construction projects. In the case of machinery and equipment the intentions of Canadian businessmen may be less accurate because of their substantial reliance on foreign sources; and the assessment of the supply and price situation of the latter is a more difficult task than the appraisal of the domestic situation.

Projected capital outlay as reported by business in the United States is said largely to reflect volume estimates, expressed in current prices. In Canada the tentative conclusion is that investment intentions in periods of rapidly rising prices are expressed in terms of future prices—although at times the allowance for price rises may not fully reflect the rise in prices that may take place. In times of moderate price movement Canadian practice is more akin to United States practice.

As in the aggregate, so in some of the major industries Canadian investment-intentions surveys have come closer to actual realization in

some years, with United States surveys being closer in other years. In the field of manufacturing the reasons for some of the variations between the two countries might include the greater degree of experimentation and research carried on in the United States and the adoption of innovations in that country often as rapidly as these become available and economically feasible. In Canada, with some exceptions, manufacturing industries follow the American lead in technology. Thus Canadian manufacturing industries can frequently draw on United States experience in appraising the cost of new projects and in a number of cases make use of American engineering assistance.

A final dissimilarity lies in the fact that the Canadian investment-intentions surveys are conducted on an establishment basis, while the American data are obtained on a company basis. The United States method has the advantage of making it possible to relate profit, asset, and other corporate financial statistics to capital expenditure data. The Canadian method has the advantages of allowing regional and local capital expenditure estimates to be made and of relating plant expansion to the area where it takes place rather than to the head office of the company. This point is of particular importance in Canada, where head offices of companies are concentrated largely in two major centers, Montreal and Toronto. Further, the Canadian technique facilitates an improved industrial classification, since in the case of companies conducting a variety of businesses it becomes possible to classify capital expenditures on the basis of the purpose of the plant rather than on the basis of the predominating business of the controlling company (see section C 8).

Direct surveys of capital expenditure plans have been made since 1948 for the institutional and government sectors, and since 1949 for investment intentions by home-builders. In 1948 the margins between projected and actual capital expenditures were comparatively wide, but in 1949 and 1950 they had narrowed down considerably, to 3 and 2 per cent respectively. Substantial offsets occurred within some of the sectors. For example, a decline in the number of expected housing completions in 1950 was offset by an unanticipated increase in the number of starts and by a rise in costs, which at the beginning of the year had been expected to remain fairly stable. The housing pattern of 1950 was also influenced by changes in housing legislation (see section C 9).

To generalize, survey techniques in Canada have been sufficiently developed over the last seven years so that under foreseeable

circumstances capital expenditure intentions for all sectors of the economy can be expected to be within 5 to 10 per cent of the amounts that will actually be expended. The emphasis is on "foreseeable" because there are major economic, political, and natural events that should be classed as unforeseeable, for example, rearmament following international disturbances, a major war, widespread drought, and internal strife. The time has been too short to establish whether surveys will stand the test of a major depression such as followed 1929, but there is some evidence that the surveys will be able to indicate a decline in capital outlay that is in part engendered by and in part augments recessionary influences developing in the economy or being transmitted from abroad (see section C 10).

B. Meaning, Use, and Techniques of Investment Forecasting

1. Introduction

A series of major economic events having world-wide ramifications has crowded the life of the present generation: a hectic boom, a serious depression, a global war, a readjustment period of uneasy peace balancing between the forces of inflation and the fears of recession, and now a time of rapid rearmament amid local wars and international tension.

There is little in this rapid sequence of events to imply that the life of this generation has been a "normal" one, with everyone knowing where he is going and how to get there. The world-wide forces of economic change in the last thirty years have been so overwhelming as to reduce the effectiveness of decisions made by individuals and by nations and to subject them to influences either unforeseen or unavoidable. It is perhaps the most encouraging feature of the positiveness of human nature that in spite of turmoil, adversity, and confusion the striving to do better continues, whatever the handicaps or odds of international conflict or national mismanagement. Thus economic and political decisions continue to be made by individuals and governments almost daily. These in turn may either hasten or delay the next major economic event, which historians of tomorrow may describe as the logical consequence of the folly or wisdom of those who participated in bringing it about.

But come what may, and whatever may be the effectiveness of decisions by individuals and governments, the complexity of this age has set new standards for the decision-making process. It is no

longer considered satisfactory to base decisions on haphazard guesses of what the future situation will be. What is wanted is a systematic appraisal of the problem at hand, the developments that can be anticipated, and the courses of action that may be open for dealing with a continuously changing situation. The question is no longer, Should one look ahead? It is rather, What is the most effective and scientific way of looking ahead?

This task of looking ahead will have either national or international objectives. Within the national framework, forecasting will concern the individual householder, the business firm, the member of the government, and the parliamentarian. The subjects covered will range from market prospects for a specific commodity to future national levels of employment and income. Among the various sectors of economic activity one field has been receiving increasing attention in the last two decades: investment of capital expenditures by business, individuals, institutions, and governments.

For as long as records have been available capital expenditures in Canada—as in many other industrial countries—have fluctuated substantially. The significant changes in the volume of investment have in part contributed to and in part been affected by changing levels of employment and income. When Canada's greatest depression reached its lowest point, in 1933, private investment amounted to 6 per cent of the gross national product, and private and public investment together to 9 per cent. But at that time the gross national product per capita in constant dollars was one-third lower than it had been in 1929, and the number of unemployed approached a million, or about one-fifth of Canada's labor force. In periods of great prosperity such as the late twenties and most of the postwar years, private and public investment together may absorb as much as 20 to 25 per cent of the total output of the country[1] and may exceed the value of Canadian export trade, although the latter is frequently referred to as the mainstay of Canada's prosperity. The devotion of such a substantial proportion of Canadian resources and manpower to the expansion of the country's capital equipment provides employment and income both directly and indirectly to a large section of the Canadian population.[2]

There are two more reasons why the importance of investment

[1] In 1950 private investment involved 16 per cent and public investment 6 per cent of gross national product.

[2] For quantitative evidence and a summary appraisal see Department of Trade and Commerce, *Private and Public Investment in Canada, 1926-1951* (November 1951), Section 1.

expenditures to the economy is quite out of proportion to the actual amounts involved, whether these be large in periods of prosperity or small in periods of mass unemployment and low incomes.

The first is the contribution which capital expenditures make to the development of the economy. The productive capacity of the nation depends in large measure on the capital equipment available, and additions to the stock of capital increase that productive capacity. Further, as new techniques and processes are developed, their adoption frequently requires large capital expenditures. It is therefore important to economic advancement that investment be maintained.

However, a high level of investment may affect the general price structure of the economy and at times may intensify inflationary pressures. The relationship of capital expenditures to inflation has been summarized as follows: "This effect of investment upon prices is directly related to our willingness to save part of our current income. These savings are only partially made by the same individuals or business firms that do the investing. In fact, the investment decisions, the decision of an individual to buy a new house or a business firm to build a new factory, are often made quite independently of the decision to save part of current income. Although part of the investment may be financed out of current savings, a substantial part may also be paid for by drawing on past savings or by borrowing from the banks or other financial institutions. This means that some groups in society are spending more than their current income. Unless other groups save enough to offset this excess, the country as a whole will be trying to spend more than it is currently producing. If this occurs, the attempt to make these extra expenditures places an upward pressure on prices. In general, once the economy is fully employed, if investment expenditures just balance the amount of savings which all groups in society are prepared to make, prices are likely to stay at about the same level. If investment expenditures are greater than this, an attempt to make these expenditures will tend to force up the level of prices. On the other hand, if investment expenditures fall short of the amount of savings which all groups in the economy are prepared to make, total expenditures will prove too small to maintain the existing price and income levels. The result will be a decline in prices or in production or in employment or in all three."[3]

The impact of a large volume of investment on the general price

[3] *Report of the Royal Commission on Prices* (Ottawa, 1949), Vol. II, p. 116.

level was of particular importance in the reconstruction and readjustment periods which followed World Wars I and II. The problem again came to the fore in the period of increased defense preparations, following a worsening of international relations after the middle of 1950.

With the importance of investment as a source of both economic strength and economic predicament now being fairly well established in Canada as in other industrially advanced countries, the question is raised: What is being done to learn more about investment behavior and to provide sufficient advance knowledge to those in a position to do something about the problems that may arise out of rapid changes in capital expenditure flows? In Canada the answer to this question has led to the development of an elaborate system of investment forecasting, which in concept and breadth of approach is second to none in the world.

The purposes of this paper are to describe the investment-forecasting process as it has developed over a period of seven years in Canada and to examine the results so far achieved and the uses to which investment analysis has been put. The paper is in three parts. The first is a summary of the findings. The second covers the objectives, meaning, and techniques of investment forecasting in Canada and compares the process with the processes adopted in other countries. The third appraises the effectiveness of investment forecasts in anticipating economic events and seeks to establish the reasons why investment plans of individuals, business firms, or the nation as a whole may be carried out or defeated. A comparison of the results of Canadian and United States investment-intentions surveys is also included. Two appendices providing information on the coverage of Canadian surveys and including copies of survey forms in use conclude the paper.

2. Developments leading to investment forecasting in Canada

Even before World War II various agencies of the Canadian government devoted considerable effort to surveying the economic situation as a means of aiding in government formulation of economic policies. Among them were the Department of Finance and the Bank of Canada, guided by their concern with fiscal and monetary policies; the Department of External Affairs and the Department of Trade and Commerce, prompted by their responsibilities in the field of foreign economic relations, particularly in matters relating to trade and commercial relations; and the Departments of

Agriculture, Fisheries, and Mines and Resources, whose principal interest was the development of markets for Canada's major primary industries. These efforts were greatly assisted by the collection of comprehensive economic statistics by a central agency, the Dominion Bureau of Statistics, which among its many tasks developed a set of national accounts that have become increasingly important to the national policy-maker and senior administrator.

With the commencement of World War II, some of this work was intensified, and new fields were entered. The number of departments participating increased in the attempt to anticipate and meet war needs on a broad front. As the war was drawing to a close the Canadian government, anticipating postwar economic problems, proceeded to frame broad and integrated economic policies. Some of this endeavor was reflected in the extensive legislative proposals submitted to Parliament in the 1944 session. The intent and purpose of the economic program were brought together in a White Paper on employment and income, placed before Parliament in April 1945, outlining the government's policies with respect to the maintenance of high levels of employment and income in the country.[4] To implement this objective there was need for a continuing central group responsible for national economic forecasting, which would provide the necessary forward-looking information required by the government to formulate and administer its policies. This task was entrusted to the Department of Reconstruction (and Supply), and was later continued by the Department of Trade and Commerce, operating in conjunction with all departments concerned with matters relating to economic policies.[5] The departments concerned are members of an informal committee on economic forecasting, and they participate in formulating the final advice given to the government on the economic outlook for the country as a whole and its various parts.[6] The development of investment forecasts was one

[4] *Employment and Income, with Special Reference to the Initial Period of Reconstruction*, White Paper presented by the Minister of Reconstruction to Parliament in April 1945. A restatement of the government's aims for maintaining high and stable levels of employment and income in cooperation with provincial and municipal governments is contained in the *Proposals of the Government of Canada* to the Federal-Provincial Conference on Reconstruction (August 1945).

[5] O. J. Firestone, "Government Economic Intelligence in Canada," *Public Affairs* (Dalhousie University, Halifax), Vol. XII, No. 1 (spring 1949), p. 8.

[6] For a summary see "Government Forecasting in Canada," by Stewart Bates, *Canadian Journal of Economics and Political Science*, Vol. XII, No. 3 (August 1946), pp. 361-378.

of the results of this attempt to put forward-looking economic analysis in Canada on a systematic basis.

3. Progress of investment forecasting

The Canadian government's endeavor to be adequately prepared to cope with the problems of industrial reconversion and possibly a recession after the end of World War II is indicated by the introduction of a bill early in 1944 to establish a Department of Reconstruction. This bill was passed by Parliament by mid-1944,[7] and the new department began operations in November of that year, as the Minister of Munitions and Supply took over the portfolio of the Minister of Reconstruction. One of the first acts of the newly organized Economic Research Branch of the Department of Reconstruction was, in December 1944, to ask the Dominion Bureau of Statistics to organize a survey of investment intentions by Canadian business which would provide a measurement of capital expenditures planned for 1945. While military operations were favorable to the Allied cause, and victory appeared in sight, great uncertainty prevailed about when the war would end. Nevertheless, many of the larger companies had been planning the various moves that would be required to turn again to peacetime pursuits. In fact some of the companies were already making capital expenditures in preparation for this contingency, in order to make certain that the transition from war to peace would be as rapid as possible. To make sure that the data on investment plans for 1945 included not only the expenditures contemplated by firms in the ordinary course of events, but also any outlay associated with reconversion, a specific question with regard to the latter was included in the survey. The classification used in the 1945 investment-intentions survey therefore covered five categories, with reconversion expenditures being added to new construction, new machinery and equipment purchases, repair and maintenance construction, and repair and maintenance of machinery and equipment.

The following industries were covered in the 1945 survey: manufacturing, mining, central electric stations, and telephones. The results of the survey were for government use and were therefore not released at that time.

In 1946 the survey was expanded to include woods operations, banks, broadcasting, steam railways and telegraphs, electric rail-

[7] The Department of Reconstruction Act, 1944, 8 Geo. VI, Chap. 18, assented to June 30, 1944.

ways, air and water transportation, and motor carriers. The results of this survey were made public by the Minister of Reconstruction and Supply, as were those of all subsequent surveys.[8] In the 1946 survey the question relating to reconversion expenditures was dropped. In addition to figures for the groups covered by direct-survey method, the investment White Paper included estimates of the likely amount of residential and institutional capital expenditures and the investment outlay of business sectors not covered by direct-survey methods. The latter estimates were based on an appraisal of the supply of capital goods, a feasible procedure in view of the persistent demand coming from all sectors of the economy for capital expansion.

In 1947 the survey of business establishments was expanded to include the construction industry, warehousing, wholesale establishments, chain and department stores, laundries, dry cleaners, and theaters. Housing and institutional investment plans and those of residual business groups continued to be estimated on the basis of the supply situation. To facilitate the latter type of analysis the survey work on the supply side covering construction was formalized, and the results appeared in a White Paper on the outlook for basic and building materials. Similar White Papers were issued in subsequent years as companion documents to the White Papers on the investment outlook.[9]

In 1948 additional business sectors covered by the direct-survey method included insurance companies and hotels. Also, for the first

[8] *Capital, Repair and Maintenance Expenditures of Business Enterprises in Canada, Forecast 1946* (September 1946); *Forecast of 1947 Investment by Canadian Business* (March 1947); *Private and Public Investment in Canada, Outlook 1948* (March 1948). These three papers were prepared by the Department of Reconstruction and Supply. *Private and Public Investment in Canada, Outlook 1949* (February 1949); *Private and Public Investment in Canada, Outlook 1950* (March 1950); *Private and Public Investment in Canada, Outlook 1951* (March 1951). These three papers were issued by the Department of Trade and Commerce. To assist the periodic appraisal of the investment outlook the Department of Trade and Commerce released its progress report of research done in the field of investment analysis, *Investment and Inflation, With Special Reference to the Immediate Post-war Period, Canada, 1945-1948* (February 1949).

[9] *Production of Basic and Building Materials in Canada, Outlook 1947* (March 1947); *Production of Basic and Building Materials in Canada, Outlook 1948* (March 1948). Both papers were prepared by the Department of Reconstruction and Supply. *Supply of Building Materials in Canada, Outlook 1949* (February 1949); *Supply of Building Materials in Canada, Outlook 1950* (February 1950); *Supply of Basic and Building Materials in Canada, Outlook 1951* (February 1951). These three documents were prepared by the Department of Trade and Commerce.

time anticipatory capital expenditure data were obtained from institutions and governments by means of a direct survey. Only the expenditures of housing and residual business groups continued to be estimated on the basis of supply information and other data becoming available. Another innovation in the 1948 report was the inclusion of an allowance for capital items charged to operating expenses for manufacturing, utilities, and trade.

In 1949, with the addition of grain elevators and the automotive trade to the business sector and a newly instituted forecast survey of housing starts and completions, the initial development phase of the survey of capital expenditure intentions had been completed. By that time all major sectors in which it was considered feasible to make a direct survey of the buyers of capital equipment had been subjected to a regular canvass. Thus the need to make estimates of investment intentions based on less direct information had been reduced to a minimum, with agriculture the only major sector so covered (for further details see sections B 9 and 10 and Appendix A).

In 1950 and 1951 the surveys were continued on substantially the same basis as in 1949 except for the addition of two minor sectors, oil pipelines and municipal waterworks, the latter because they were considered to be more akin to utility operations than to government operations. One other change occurred in 1951 with the exclusion of government expenditures on military equipment from the investment-outlook appraisal. This was done because most items of military equipment may in periods of war or increasing military preparedness be looked upon as expendable or as additions to an inventory type of stock (for example, guns not currently used for training or operations), and therefore a case can be made for not including such expenditures as investment in durable physical assets.

4. Objectives of investment forecasting

The primary objective of investment forecasting is to provide a basis for improving judgment about current and foreseeable economic conditions. Since past experience shows that economic conditions and national development may be significantly affected by changes in the level, composition, and distribution of capital expenditures made in a country, investment forecasts in Canada are part of the larger task of increasing knowledge about the working of the economy. This knowledge in turn will assist the policy-maker in business, government, or elsewhere when he has to make decisions

affecting a given economic situation. The problem for the executive is not only to set out alternative policies which he may pursue, but also to choose a realistic policy applicable to a situation he is facing or may be facing in the near or distant future. A policy, brilliant as it might have been when applicable to a situation of the past, may quickly become obsolete as conditions change. There is, then, a premium on anticipating economic changes as closely as can be done with the imperfect tools at the disposal of the economist. It is this requirement for forward-looking information on the course of capital expenditures by business and other groups that has determined the processes of investment forecasting in Canada.

Investment forecasting involves the application of judgment to measurement. It represents the synthesis of two distinct though closely related phases of economic assessment: the first aim is to find out what people *intend* to do; the second involves arriving at a judgment of what people in fact *will* do.

One objective, then, is to obtain through surveys and other methods an approximation of investment intentions by those who are in a position to make capital expenditures. Another objective is to obtain a clear understanding of current economic conditions at the time investment surveys are made—to become aware of the basic forces operative in the economy, including prevailing business and government policies that will be influential in shaping the events of the near future, and to weigh all the available evidence that bears on the possibilities or limitations of realizing the investment plans obtained from those who formulate them.

With this knowledge, which is partly quantitative in character but is perhaps even more affected by qualitative considerations and insight into the functioning of the economic system, the Canadian analyst has tools to arrive at an informed assessment of the foreseeable investment situation. The investment intentions provide him with an approximation of potential domestic demand for capital goods for a period ahead. Supplementing this knowledge, information from other sources on the supply side of the economy and on competing demand for supplies will enable the analyst to balance the various claims that may be made on the country's resources and the effects that these claims may have on economic activity and prices. He may conclude that, given conditions of limitations of supply in the country as a whole, which individual forecasters of capital expenditures have taken into account only inadequately, investment intentions will not be fully realized and therefore what

people actually spend on capital goods and related services will be less than they stated. This, for example, was the situation in Canada in 1945 and 1946. Or he may find that buoyant economic conditions make it likely that those intending to make capital expenditures will spend all they propose or perhaps more than they initially intended —the Canadian experience since 1947. Or he may find that, given certain stringencies arising out of external conditions—for example, the Canadian exchange difficulties of 1948 and 1949—or out of domestic circumstances—for example, the rearmament program and expansion of defense and defense-supporting industries following the Korean incident in mid-1950—there will be a significant shift in the composition of the investment program, with certain industries doing perhaps better than they expected and other industries barely accomplishing or actually falling behind their anticipations.

Given these conditions, all that the careful Canadian investment forecaster may feel justified in saying is this: The people in a position to make capital expenditures intend to spend $\$x$ million. Given the capacity of the economy and the competing demands for its resources, current price trends, prevailing external relations, and known government economic policies, actual capital expenditures made may in the aggregate be somewhat below x, come close to it, or exceed it. And he may point to some of the variations in the distribution of investment intentions between regions and sectors of the economy without stressing with numerical precision the actual amounts that will be spent in each industry or region. The emphasis, then, is on major trends becoming apparent that are either of national importance or of significance for particular areas or sectors of the economy, rather than on an attempt to pinpoint with any claim to precision the actual capital spending that *will* be taking place.

This is not to suggest that the Canadian investment forecaster is happy if he finds that the application of judgment to survey results shows great disparities between investment intentions and estimates of actual capital spending. But he is—or at least should be—aware of the limitations of the whole investment-forecasting process and its objectives. To state what the actual amount of capital outlay will be in a given period, say a year ahead, presumes complete foresight into economic and political events, which no human being possesses. Who on the North American continent, for example, could have foreseen aggression in Korea, not only its occurrence, but also its timing, and the effect that the events following this inci-

dent would have on capital expansion plans by business and governments?

The Canadian investment forecaster must also be aware that the very fact of making available information on investment intentions and the assessment of the economic impact of these plans may bring into being government policies and business decisions which will prevent the realization of aggregate investment intentions and alter the composition of the capital expenditure program. The economic forecaster does not predict, and in fact may not feel qualified to predict, the human and political reactions of those who formulate decisions subsequent to the release, and in the light, of information on the near-term investment outlook. But what he can do is advise government on the effects which alternative economic policies may have on investment intentions and their possible realization. If, then, the administration—or legislature as the case may be—makes decisions affecting investment, and the attitude of those making capital expenditures becomes known, the analyst is frequently in a position to indicate the slowness or speed with which the newly initiated policies appear to be bringing about a change in trend or in the composition of capital expenditure plans.

The objective of the investment forecast, it must be remembered, is to provide a basis for intelligent economic decisions by both government and business. Such decisions can be made on the basis of what the current outlook appears to be in approximate terms. As long as government knows that the investment intentions are upward and are likely to exceed available capacity, it does not matter for the purpose of framing appropriate policies in the first instance whether the intentions may exceed available capacity by 10 per cent or 15 per cent. What is important for the government to know is that this development is likely to contribute to physical bottlenecks and rising prices in capital goods industries, and that, in an economy already operating at a high level, the inflationary tendencies in a major sector may permeate the economic system as keen competitive bidding for the limited resources effects—in the absence of government controls—a transfer of resources to the highest bidder. In the light of this information the government may decide that remedial measures are indicated. If one set of such policies turns out to be not fully effective or acceptable to the public, other policies may be formulated in the light of the changing situation.

In another period it may be found that prospective investment demand is considerably below available resources. This was experi-

enced in Canada during the postwar period in selected areas or industries, but not in the aggregate because of the offsetting effect of expansion in other regions or sectors. In such a situation the government in deciding on appropriate action may find it sufficient to be informed of, say, the current level of unemployment in capital goods industries in the localities affected and of the fact that investment intentions suggest a continuation or deterioration of the situation. Whether this deterioration may be 10 per cent, 15 per cent, or perhaps even more is not as important as the fact that a worsening of economic conditions and a drop in capital expenditures is in sight for the locality. In fact when this situation is compared with continuing expansion occurring in other parts of the country, the disparities may be of such order as to counsel remedial action before the situation in the locality causes real hardship or becomes instrumental in spreading recessionary influences to other parts of the country. Or in the case of declining investment activity in a whole sector, as, for example, in Canadian manufacturing in 1949, the important considerations influencing a government decision on what action to take are not whether the prospective decline in investment is 10 per cent or 15 per cent, but the fact that a notable decline is in sight, why this drop in investment is taking place, what it will do to the competitive position of the industry vis-à-vis importers, and whether declining capital expenditures in some sectors will be offset by increases in others.

A decline in investment in certain sectors may on occasion be a desirable objective from a national point of view and the result of specific government and business policies. In such cases the decline in the volume of investment may be an indication of the success of public and private policies which in the first instance might have been framed to reduce the demand for capital goods coming from unessential industries so that sufficient capital goods could be made available to high-priority sectors of the economy. An example of this type of development is to be found in the years following aggression in Korea, when a number of economic policies were formulated in Canada specifically to achieve a redirection of the investment program, with the intention that this objective would be reached in some measure through government-industry cooperation.[9a]

[9a] See, for example, Mitchell W. Sharp, "Deferred Depreciation—A Canadian Anti-Inflationary Measure," *The Journal of Finance*, Vol. VII, No. 2 (May 1952), pp. 331-346.

These considerations of what is involved in investment forecasting suggest two important conclusions.

First, investment forecasting applies the artist's touch to the statistician's skill. There are so many reasons—and some of these are examined later—why the results of capital expenditure surveys may not fully reflect the likely course of investment, particularly in regard to certain areas, sectors, or companies, that economic policies formulated after a glance at the statistical-survey results may be just as haphazard as economic policies based upon a personal hunch or on "informed" opinion of what the situation will be in a future period. Further, the economic significance of capital expenditures is of such magnitude and complexity that no satisfactory conclusion can be reached without regard to other interlocking events and influences. For it must be remembered not only that variations in the volume and composition of capital expenditures may affect levels of employment and income, prices, productivity, and the competitive position of industry within and outside a nation's borders, but also that the buoyancy or inadequacy of domestic and foreign demand for a country's output may influence notably the economic climate in which investment decisions are made.

Secondly, an appraisal of the investment outlook is a judgment in quantitative terms of what will be taking place in the investment field in the near future, usually in the next quarter or full year. The purpose of this appraisal is to assist in the formulation of business and government decisions which supposedly, in the case of individuals or firms, are made to maximize returns or, in the case of governments, are made to arrive at some national or social objective. The usefulness of an investment forecast to the decision-maker can be observed from the influence that the forecast has on the adoption of certain measures which in the end may materially alter the investment outlook. The government, for example, may in a period in which demand for capital goods exceeds supply take a variety of measures to reduce anticipated demand, through direct action—e.g., allocation controls or reduction of its own capital spending—or indirect measures—e.g., increased taxation, stricter credit provisions, or higher interest rates. In a similar situation some business enterprises may, in anticipation of construction bottlenecks, rising prices, and delivery delays on machinery and equipment, review their capital expenditure programs and decide on the postponement of some projects of lesser priority. Other industries may, in anticipation of increased general demand for goods and services associated with

an investment boom, decide on further expansion of capital facilities, thus adding to an already tight supply situation. In turn industries producing capital goods may, in the light of strong markets, program for a larger output than they would otherwise have undertaken, thus making possible an increased realization of investment, although frequently at the price of rising costs to the purchasers of capital goods.

In another period, when there are indications of a decline of private capital expenditures large enough to alarm a government committed to trying to avoid "too" substantial fluctuations of economic activity, fiscal and other economic policies may be decided upon to encourage an increase in private capital outlay beyond what is currently contemplated by business and individuals. Steps to encourage private enterprise, such as tax concessions, loans, guarantees, subsidies, and lower interest rates, may be supplemented by the expansion of direct public investment outlay. Thus in the end, partly as a result of such policies and partly because of the confidence that a hesitant business community may regain, the actual volume of investment may be larger than was indicated by earlier surveys of capital expenditure plans.

Such consequences lead to the apparently paradoxical conclusion that the most successful investment forecaster is not necessarily the analyst whose quantitative forecast is most closely matched by actual capital expenditures. As long as investment forecasting is regarded as a tool for policy formulation and not as an academic exercise, a major criterion of the usefulness of an appraisal of the capital expenditure outlook is whether and to what degree it will assist decision-makers in a modern democracy in formulating business and public policies that contribute to a maximization of returns to individuals and to optimum national welfare. If the implementation of these decisions contributes to a change in the level or the composition of the investment program and thus proves the initial investment forecast "wrong," the purpose for which the investment forecast was designed will still have been achieved more effectively than if the forecast had conformed closely to realization of investment intentions, and were therefore regarded as "right" simply because neither business nor government took the appropriate steps to rectify a situation which appeared unsatisfactory from a national point of view. In essence, then, the statistically correct investment forecaster is not necessarily the most successful forecaster—although the very fact of being right or nearly right may be a source of pro-

fessional satisfaction. Perhaps more important are the relationship of the economic forecaster to the decision-maker, the use to which the forecast is put, and the contribution which the investment forecast itself may make to general public enlightenment on controversial economic issues.

5. Limitations of investment forecasting

Limitations of investment forecasting arise out of two sets of conditions: (1) difficulties encountered in organizing the surveys of investment intentions and in conducting them on a continuing basis, including such factors as the extent, quality, and timing of response from business and other groups and the need to make estimates for sectors or types of capital expenditures not covered; (2) problems deriving from the interpretation of the results of surveys and an assessment of the conditions and circumstances affecting the extent to which investment intentions may be realized.

The first problem, then, is organizing intentions surveys simply and realistically enough to be understood by firms and individuals canvassed so as to permit a speedy response. The surveys have to be conceived broadly and flexibly enough to take care of the various ways in which business firms and other groups plan and record their capital expenditures. The surveys must also be adaptable to the continuously changing economic situation, industrial structure, composition of the business community (new firms being established and existing firms going out of business), and the division between private and public spheres of activity.

To cope with these various requirements techniques of investment forecasting developed gradually in Canada over the last seven years have been changed, revised, and extended as experience has been gained. Methods employed in preparing investment forecasts and cooperation obtained from respondents are summarized in sections B 9-11, and supplementary evidence is examined in section C 7.

The second type of problem is mainly analytical. It requires a thorough understanding of how investment decisions are formulated by businessmen and others, why decisions are made, how realistic they are under varying economic circumstances, and what their effect is likely to be on the economy as a whole, on specific industries, on a particular region or locality, or on the firm, individual, institution, or government agency involved. The limitations of investment forecasting based on surveys of capital expenditure intentions and the careful attention that must be given to the forces

and factors that may be instrumental in either defeating or changing investment plans were stated in the following terms in the first investment White Paper published. Even though some five years have elapsed since these observations appeared, they have substantially stood the test of subsequent experience:

"In interpreting the intentions of business enterprises, account has to be taken of the structural, dynamic and behavioristic conditions in the economic system at the time. Some illustrations of the complexities follow: A firm's intention to make a certain investment in a given year depends on its outlook as to the future of business in general (perhaps for some years ahead if the investment is large), the prospects in its own industry, and its own particular competitive position within that industry. Two competitive firms may have similar assumptions as to the future of trade generally and of their own industry, although they may each react differently and would plan differently. In most instances, however, their information or foresight will not be similar, so that their assumptions about the future will not be homogeneous. This creates some logical difficulty about adding together intentions so differently reached. The better informed the firms are about trends, the more homogeneous will be their basic assumptions, and the less serious the logical difficulty. But it follows that the investment intentions of industries characterized by well-informed managements mean something different from those stated by industries whose managements are short or narrow in views. Likewise, industries that are highly integrated, that can 'mechanize' the introduction of new processes derived from research, etc., are able to state intentions more firmly than industries of small firms, or industries that are going through either rapid development or decline. A slight change in business generally is likely to create in the latter type of industries wider discrepancies between the January intentions and the realized acts by December. In the former, highly integrated type of industry with only a few firms, while their views may be longer and the investment more 'mechanized' in application, the actions of one firm can so greatly affect a second that both intentions and actions have to be modified according to, not only general trade conditions, but also the unfolding actions of the competition.

"In a more general way, as in recession times and in periods of industrial strife, general conditions can emerge to alter intentions (and actions) in the course of the year. If conditions are reasonably stable, the forecast (or sum-total of intentions) may approximate the

actual fulfilment, except where there has been general over- or underestimation of prospects. Or again the costs of the actual construction and machinery, etc. may during the year, prove to be different from the estimates as shown in the original intentions, by reason of errors in costing, changes in prices, etc. Changes in the basic conditions can of course change intentions or disrupt actions, probably unequally as between industries, and also in total. Given any such changes in general conditions, especially sudden changes, the intentions may not be realized before the year-end; in depressions, errors of forecast may appear in a large proportion of the industries; in minor recessions, they may appear mainly in the industries immediately affected by the changed situation. Likewise in prosperity conditions, the intentions may understate the investment likely to be undertaken, particularly if the prosperity is associated with the emergence of new firms that have been missed in the survey. To overcome such difficulties, special allowances have to be made to include investment outlay of this kind."[10]

The macro- and micro-economic influences that have affected the realization of capital expenditure plans in Canada over the last seven years and the reasons for the differences between intentions and realization are examined in sections C 1-6.

6. Investment forecasting and government policy

One of the major objectives of investment forecasting has been described as providing background information to the policy-maker in the legislative and executive branches as well as to senior administrative heads concerned with the implementation of economic policies. Advance knowledge of the course and distribution of the investment program will be helpful if a choice has to be made between alternative policies. Such policies may be called for because a rise or a decline or a change in the composition of the investment program which is not in consonance with national objectives appears to be in sight.

The need for government to have access to forward-looking economic analysis, of which investment forecasting is an integral part, has been stressed earlier. Perhaps the importance which the Canadian government has attached to this type of analysis is indicated by the fact that White Papers on the investment outlook, together

[10] Department of Reconstruction and Supply, *Capital, Repair and Maintenance Expenditures of Business Enterprises in Canada, Forecast 1946*, pp. 10-11.

with appraisals of the basic and building material outlook, have been considered by Parliament each year commencing in 1947.[11] Further, in discussing the economic situation in Parliament, frequently in conjunction with the Debate from the Throne, numerous references to the meaning of the anticipated investment and its impact on economic activity, industrial development, prices, and foreign exchange have been made by a number of members of the Canadian Cabinet and members of Parliament on both the Government and the Opposition side.[12] Also, since the end of the war, in bringing down his annual budget the Minister of Finance has found it necessary on a number of occasions to refer to the economic impact of the anticipated volume of investment and to explain the kind of fiscal and monetary policies that the Government considers to be most appropriate in this situation.[13]

[11] The results of the first investment-intentions survey in 1945 were kept confidential because of the experimental nature of the undertaking. A summary of the 1946 survey was released by the Minister of Reconstruction and Supply on June 26, 1946, and this was followed by the publication of a White Paper in September 1946. Shortly after the results of the 1946 survey were made public the policy implications of whether business investment as forecast was sufficient to take up the slack arising out of the discontinuation of military expenditures were raised in Parliament by a member of one of the opposing parties (*House of Commons Debates*, July 8, 1946, pp. 3230-3231). The subsequent White Papers on the investment and basic and building material outlooks were presented in the House of Commons as follows: March 27, 1947 (*Journals of the House of Commons of Canada*, No. 41, p. 252; in discussing the White Papers the Minister of Reconstruction and Supply observed that he believed them to be "a very important document" [*House of Commons Debates*, March 27, 1947, p. 1777]); March 22, 1948 (*Journals of the House of Commons of Canada*, No. 52, p. 273); March 1, 1949 (*ibid.*, No. 25, p. 134); April 21, 1950 (*ibid.*, No. 40, p. 261); advance statement offered by the Minister of Trade and Commerce on February 8, 1951 (*House of Commons Debates*, pp. 186-187); White Papers presented on April 3, 1951 (*Votes and Proceedings of the House of Commons of Canada*, No. 39, p. 236).

[12] Statement by the Prime Minister, *House of Commons Debates*, February 20, 1950, pp. 55-56. (In this address the Prime Minister drew the attention of the House of Commons to the review "Canada at the Half-way Mark of the Twentieth Century," which had been circulated among members of Parliament. This review included pertinent data on past and anticipated capital expenditures. See Supplement to the February 1950 issue of *Canadian Statistical Review*, Dominion Bureau of Statistics, pp. 14-15.) Statements by the Minister of Reconstruction and Supply, later the Minister of Trade and Commerce: *House of Commons Debates*, February 23, 1948, pp. 1492 and 1495; *ibid.*, June 25, 1948, p. 5845; *ibid.*, March 1, 1949, p. 1014; *ibid.*, March 31, 1950, p. 1431; *ibid.*, September 8, 1950, p. 445; *ibid.*, February 8, 1951, p. 184; *ibid.*, June 28, 1951, p. 4817. References by opposition members include: *ibid.*, June 27, 1946, p. 3230; *ibid.*, May 6, 1947, p. 2811; *ibid.*, February 23, 1948, p. 1495; *ibid.*, June 25, 1948, p. 5847; *ibid.*, March 22, 1950, p. 1003.

[13] 1946 Budget (*House of Commons Debates*, June 27, 1946, pp. 2902-2903);

The occasions where advance knowledge of investment plans has affected government thinking are too numerous to be listed in detail. The following few examples, however, may illustrate the uses which government has been able to make of the results of investment-forecasting work.

As the White Paper on employment and income to which reference has been made indicates, the Canadian government was much concerned with the problems of adjustment and adaptation of the economy that would follow the end of World War II. There was a prominent school of thought in Canada, and this school apparently had followers in most Allied countries including the United States, which believed that the reconversion might bring in its wake a sharp recession somewhat akin to the experience after World War I. In fact many of the policies proposed were of a type that might assist in coping with such a situation should it arise. But by early 1946 it became apparent that there were many sectors in Canada, of which capital expenditures were one, in which forces of expansion appeared to be stronger than forces of contraction. Investment forecasts in particular indicated an increasing volume of business capital expansion in this country that would in large part offset declining military expenditures. As reports of rising actual capital expenditures and the mounting pressure on the capital goods market with its associated inflationary tendencies made it apparent that a period of expansion was ahead, the government was able to shift from its earlier emphasis on possible anti-recession policies to economic policies designed to cope with physical bottlenecks, manpower adjustment, and rising prices.[14]

1947 Budget (*ibid.*, April 29, 1947, p. 2543); 1948 Budget (*ibid.*, May 18, 1948, p. 4056); 1949 Budget (*ibid.*, March 22, 1949, p. 1789—in this statement the Minister of Finance referred to the "informative facts and forecasts . . . relating particularly to the prospects for capital expenditure and the supplies available for construction"); 1950 Budget (*ibid.*, March 28, 1950, pp. 1289-1290); 1951 Budget (*ibid.*, April 10, 1951, p. 1802 and p. 13 of the budget paper dealing with economic indicators). In the 1950 and 1951 Budgets the results of investment-intention surveys were shown in summary tabular form in an appendix.

[14] A number of fiscal and economic policies were introduced in 1944 and 1945 to provide for and encourage peacetime industrial expansion. For a summary see Department of Reconstruction and Supply, *Encouragement to Industrial Expansion in Canada* (1948), pp. 17-18. But as the dimensions of business capital expansion became apparent, in the spring of 1946 the Minister of Reconstruction and Supply found it necessary to report to Parliament: "For a time I was pleased with the rate of expansion. Today I am rather alarmed by it. It seems to me that the expansion is coming too rapidly and that we shall face an insoluble problem of shortages of material as well as shortages

By the end of 1947, with most of the bottlenecks arising out of postwar reconversion eliminated, a major problem facing Canada was the severe shortage of United States dollars arising in part out of heavy loans and gifts to overseas countries, in part out of the inability to convert soft currencies earned into dollars, and in part out of a substantial increase in imports from the United States which was not accompanied by a corresponding increase in exports. Emergency exchange restrictions followed, covering the import of both consumer and capital goods. The continuing large volume of investment, as indicated by surveys of capital expenditure intentions, suggested the need for an extension of import restrictions in the capital goods field, even though Canadians appeared anxious to continue with rapid capital expansion.[15]

The following extract from a letter sent to 13,000 business firms by the Minister of Reconstruction and Supply (later the Minister of Trade and Commerce), who was responsible for the administration of controls of capital goods imports, indicates one of the uses to which investment-intentions surveys were put: "The outstanding result of the survey is the fact that Canada is experiencing the great-

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of manpower when the program now under way comes into full production." *House of Commons Debates*, March 20, 1946, p. 115. In the summer of 1946 the Minister of Reconstruction, in reviewing the need for changing the Government's policy toward encouraging industrial expansion through the granting of double depreciation rates, explained: "The need for housing is so great that it is desirable that industrial projects should be limited to those which are urgent from the point of view of employment. The action referred to removes the possibility that industrial projects will be rushed forward to qualify for the double depreciation privilege. It is hoped that this will permit the postponement of some projects which involve extensive construction until the supply situation is less acute." *House of Commons Debates*, July 22, 1946, p. 3674. See also *Encouragement to Industrial Expansion in Canada*, pp. 30-32.

[15] "The need for this is underlined by the magnitude of new capital investment intentions in 1948. On top of an investment boom in 1947 in which the all-time record, in peace or war, of $2.4 billion was spent on new construction, machinery and equipment in Canada, an increase of 17 per cent, or $400 million, is planned for 1948. For the purposes of this discussion it is the United States dollar aspect of this really staggering amount—$2.8 billion—which concerns us. But I would like in passing also to draw attention to the disturbing inflationary possibilities inherent in such a program. Some postponement of the less essential expenditures in this program will be far from harmful. It will not cause any unemployment in the construction or capital goods industries. In fact our capacity in a number of key instances, such as steel supply, will be strained to the limit to provide for essential construction. Additional demand in the market will simply bid up prices, intensify shortages, interrupt necessary work and generally add to costs. On the other hand, projects postponed now will prove useful in maintaining employment and income in the future." Statement by the Minister of Trade and Commerce, *House of Commons Debates*, February 23, 1948, pp. 1492-1493.

est investment boom in her history. Total private and public investment contemplated for 1948 is likely to amount to some $2.8 billion, exceeding the 1947 peak of $2.4 billion, thus contributing further to inflationary pressures. While the value increase over last year is expected to be 17 per cent, in terms of volume it will probably be less than 5 per cent. Such a large investment program, however, means a heavy drain on our limited United States dollar holdings. Out of every dollar spent on investment in Canada, some thirty cents go to the United States. As you know, the government has embarked on a United States dollar conservation program, and to this end is soliciting the cooperation of business and all other groups in Canada. It is recognized that circumstances will vary widely, but where a construction project or the purchase of machinery and equipment can be postponed without affecting essential operations and production it will be helpful in our United States dollar conservation program. If you believe that it is necessary to carry out your construction project or purchase machinery and equipment this year, you might find it useful to ascertain whether any of the materials, machinery and equipment to be imported from abroad fall under Schedule III of the Emergency Exchange Conservation Bill, presently before Parliament. If the purchases which you contemplate either directly by yourself or through a dealer come from abroad, you are advised to write to the Director of the Capital Goods Import Permits Division and obtain assurance that import of the items which you require will be permitted."[16]

Other government policies, formulated as soon as expanded investment plans of business for 1948 became known, included a tightening of credit, as is indicated by the following extract from the Bank of Canada *Annual Report*: "Early in 1948 it became apparent that business intended to make even larger capital expenditures and that this might mean increased pressure on available labour and materials. Accordingly, the bank in February 1948 suggested to the chartered banks that conditions prevailing at that time made it undesirable for capital expenditures to be financed through expansion of bank credit."[17]

Another concern of the Canadian government at that time was the need to keep public capital outlay to a minimum so that it would compete as little as possible with private investment under-

[16] Letter by the Minister of Reconstruction and Supply, March 22, 1948.

[17] *Annual Report of the Bank of Canada to the Minister of Finance for the Year 1948* (February 11, 1949), p. 7.

takings, thus reducing the pressure on rising prices.[18] Extracts from two letters written by the Minister of Reconstruction and Supply to Provincial Premiers in connection with the 1947 and 1948 surveys of capital expenditure intentions are illuminating on this point. On March 26, 1947, the Minister wrote: "You will note that Canadian business intends to spend some 50 per cent more in 1947 on capital projects than it did in 1946. While an improvement in the supply situation of basic and building materials is expected, varying for most items between 10 and 30 per cent, the available supplies are not likely to meet all the demands that housing construction and private business are likely to make. This information is brought to your attention so that your government may be in a position to review the provincial and municipal capital expenditures with which you may wish to proceed during 1947." On March 19, 1948, the Minister wrote: "This report indicates for 1948 a capital program of $2.8 billion, or 17 per cent higher than the $2.4 billion spent in 1947. This rise is mainly due to increases of capital expenditures by business, institutions and for housing. Direct government capital expenditures show only an increase of 8 per cent, mainly due to increased investment outlay by municipalities. It is gratifying to note that provincial governments as a whole are pursuing a similar policy to that of the Dominion Government by keeping their capital expenditures at moderate levels and postponing a number of projects, the execution of which may be very useful at a later date."

Changes in the economic situation in 1949 brought different problems to the fore. Although Canada did not experience a business recession in that year, as did the United States, developments in the latter country as well as the weakening of overseas export markets were not without impact on Canada[19] (see also section C 1). The main development was that the economy did not fully absorb new entrants to the labor force, and local unemployment pockets oc-

[18] "This government has, of course, been deliberately restricting its own expenditures on construction and equipment during the last two years, partly because of the high cost of such work under current conditions but more fundamentally because of its desire to keep excessive national expenditure within bounds and to defer wherever possible the construction of useful projects until the time when private expenditure will be lower and additional government work will help to maintain employment and income." Budget Address by the Minister of Finance, *House of Commons Debates*, May 18, 1948, p. 4056.

[19] For a summary of the changing influences upon the domestic economy see "Canadian Economic Developments 1949-50," *Canada Year Book, 1950*, p. xxxiii.

curred even though national levels of employment and income continued to rise. As a result the pressure for government action increased, with opposition parties in Parliament and many groups outside Parliament proposing the greater use of public investment projects to cope with local unemployment.[20]

In summarizing the Canadian government's attitude to these requests the Minister of Finance pointed out the willingness of federal authorities to cooperate with provincial and municipal governments in meeting local problems of unemployment.[21] In fact, in planning its own construction program for 1949 and 1950, while continuing the general policy of not raising significantly the overall program in spite of mounting pressures,[22] the government applied less rigorous yardsticks for investment projects in areas or localities where a high proportion of construction workers were unemployed and investment-intentions surveys and other sources indicated a falling off of private capital spending.[23]

[20] For example, see statement by the Leader of the Opposition, *House of Commons Debates*, February 20, 1950, p. 45.

[21] "I want to make it clear, however, that the central government cannot and should not attempt to assume responsibility for all these regional problems. In my mind the proper role of the central government in our federal state is fourfold. First, through its fiscal and general policies it should endeavour to create a favourable climate for healthy economic expansion and development. Second, it should have careful regard in planning its own operations for the best timing and the best placing of its capital and developmental expenditures. Third, it should recognize a special responsibility for the promotion and development of our basic primary industries and other industries of a national significance. Fourth, it should be ready to cooperate actively with provincial governments, and through the provincial governments with municipalities, in meeting regional problems that threaten nation-wide economic repercussions." Statement by the Minister of Finance in his Budget Address, *House of Commons Debates*, March 28, 1950, p. 1210.

[22] "I continue to believe that all construction work under the control of the government which it is practicable to postpone should be postponed, except in those few areas where there may be some local unemployment. That has been the approach of the government in the formulation of its expenditure program for the year. I must say that it gets progressively more difficult to apply this policy from year to year, as really important requirements for construction of all kinds keep accumulating—some of them repeatedly deferred since long before the war. Other needs, too, are constantly arising—some of them from the necessary expansion in the defence program, others from more constructive developments, such as the need to provide improved airport runways and related equipment to accommodate the bigger and better planes now available." Statement by the Minister of Finance in his Budget Address, *House of Commons Debates*, March 22, 1949, p. 1789.

[23] "With particular reference to the current situation I should remind the house that in preparing our estimates for construction projects we have deliberately been severe in cutting down requests for new construction because in most parts of Canada building labour is fully employed on private projects.

In the field of private investment, steps taken a year earlier to tighten credit were withdrawn to allow business capital expansion to the full extent of available resources. "Indications are that the extreme pressures which were generally present in the business capital investment field may abate somewhat in 1949. The Bank of Canada therefore feels that the suggestion [to restrict bank credit for capital expansion] which it made a year ago is no longer necessary or appropriate."[24]

In 1951 the outlook for increased capital outlay by business, in addition to large military expenditures necessitated by events following aggression in Korea, led the government to embark on a number of fiscal and direct-control policies designed primarily to facilitate the carrying out of high-priority types of investment projects and to encourage the postponement of capital expenditures of lesser priority.[25]

The above examples are a selection of the many occasions when the availability of forward-looking information on capital expenditures (and other economic flows) has been found helpful by the Canadian government. Thus investment forecasts have gradually become one of the accepted means of providing government with background knowledge about current and foreseeable economic developments, which are taken into account when economic policies are formulated.

7. Investment forecasting and business policy

One of the most remarkable developments in Canada over the last decade, as far as formulation of business policies of major corporations is concerned, is the growing realization of the close relationship between the success of an individual enterprise and general prosperity in the country. Thus businessmen have become increasingly conscious of the need for appraising the strengths and weaknesses not only of the market for the specific commodities they may be producing and/or selling, but also of the Canadian market as a

But where we have evidence that building labour will be available we have applied less severe tests to departmental requests for new construction." Statement by the Minister of Finance in his Budget Address, *House of Commons Debates*, March 28, 1950, p. 1210.

[24] Statement issued by the Governor of the Bank of Canada at a press conference, February 14, 1949.

[25] For a summary of policies pursued see the Budget Address by the Minister of Finance, *House of Commons Debates*, April 10, 1951, pp. 1800ff.

whole and the markets of those other countries with which they trade.

In this decade business executives in Canada and their counterparts in the United States have acquired much greater knowledge of the working of the economy and have become familiar with some of the aggregate concepts economists are using. Such terms as gross national product or gross national expenditure, national income, investment, and balance of payments can frequently be heard at directors' meetings, in businessmen's clubs, and at annual conventions of business organizations. Similarly, trade-unions and farm organizations have come to use regularly macro-economic concepts to support their various demands, ranging from wage increases based on a productivity rise to floor prices for agricultural products.

As a result the demand for forward-looking economic information has come also from sectors other than government. These demands have been met in various ways, one of which is the publication over a period of years of the results of the investment-intentions surveys. Some of the uses to which business has been able to put these surveys are summarized below.

Surveys of capital expenditure intentions provide estimates of the dimensions and composition of demand for capital goods. The industrial detail and regional and local data also give an indication of what kind of capital equipment is in demand and where the demand originates. Thus in periods when demand is the guiding principle in planning production, domestic manufacturers of machinery and equipment and of building materials have at their disposal a readily available market appraisal. Foreign sellers of machinery and equipment, particularly those coming from western European countries which were seeking a return to or a new entry into the Canadian capital goods market after World War II, turned to investment-intentions surveys as a source of information, and used them in planning export drives. In construction many of the large companies are able to ascertain, by comparing their volume in a region or city with total construction carried out in these areas, whether their share of business is declining, remaining the same, or increasing. This knowledge in turn may influence their organizational and pricing policies. Similarly, organizations producing and selling large machinery and equipment in Canada can assess their relative position in the market and formulate plans accordingly.

Besides the material and capital-goods-supplying industries, some of the service industries have found it possible to put the results of

investment-intentions surveys to good use. For example, a firm of insurance brokers embarked on an advertising campaign early in 1951 to encourage increased business insurance coverage. It pointed in its advertisements to a 14 per cent increase in anticipated capital expenditures in 1951 over 1950, and it posed the question whether many business firms had raised their insurance coverage in line with the expansion in plant facilities that might take place.[26]

In deciding on a short- or long-term investment program since the end of the war many companies have found that they have been underestimating the rate of expansion in the country as a whole or in their particular industries. Increasing attention is now being paid to long-term growth factors as well as to the capital expansion that is being undertaken by competitors in the field. Reference to industrial investment totals, past, present, and future, may give businessmen a lead in assessing realistically the rate of capital expansion that has taken place or is taking place.

By tying in information on anticipated investment with other relevant data, business executives may be aided in their appraisal of the general economic outlook as well as of the specific commodity markets in which they are interested. They are assisted in their endeavors by business economists in their employ and the various market research organizations or economic consultants whose services they use from time to time. These professional groups in turn have become users of anticipatory data collected by government and are thus equipped to interpret such information to the business community.

Although the interchange of economic information between the government and the business community has been increasing and improving in quality, requests are received from time to time for more forward-looking information than is currently released by the government.[27] The reply usually given is that the results of forward-looking economic surveys, when these are based on information obtained from the business community, are made public regularly. Furthermore, general statements about the economic outlook are made from time to time by members of the Cabinet in Parliament and on other occasions. Also, a number of annual reports by govern-

[26] See, for example, advertisement in *Time* (Canadian edition), September 17, 1951, p. 78.

[27] For example, a resolution of the Chatham (Ontario) Board of Trade suggested that the Canadian government publish reports similar to those issued in the United States by the Council of Economic Advisers. "Finance at Large," *The Globe and Mail*, Toronto, March 2, 1949.

ment departments and agencies contain forward-looking economic appraisals. The question of whether the Canadian government should issue reports on the economic situation in a form similar to the President's reports to Congress in the United States (together with the report of the Council of Economic Advisers) or to the economic surveys of the United Kingdom government has remained open.

8. Tie-in with other economic forecasting

It has been stressed several times in this paper that investment forecasting is not a process carried on in isolation. Investment forecasting in Canada is conceived as one of the means contributing to an overall appraisal of economic conditions and prospects in the country.

Since the end of World War II forward-looking economic analyses have been prepared in a central unit of government on a regular basis. This appraisal has taken the form of the national economic forecast, which is a statement on the economic outlook, presented within the framework of the national accounts and showing separately the various components of the gross national product and gross national expenditure. The national forecast is arrived at to a large extent by direct-survey methods. On the demand side such direct surveys cover canvasses of capital expenditure plans and of export prospects, the latter based largely on returns of Canadian Trade Commissioners abroad and on informed business opinion in Canada. On the supply side, surveys include the anticipated production, exports, and imports of basic and building materials, and general imports covering broad commodity groups. A great deal of the information is obtained directly from industry and supplemented by the specialized knowledge of commodity officers of the Department of Trade and Commerce. A large amount of information is collected from sources both inside and outside the government on such items as the labor force, immigration and emigration, strikes, government expenditures, invisible exports and imports (tourism, shipping, and so forth), saving habits, productivity changes, consumer behavior, inventory changes, profits, floating of securities, and last but not least the "mood" of the business community. Since this information comes from sources of varying degrees of reliability, the material is surveyed and weighed carefully in the process of fitting it into the familiar concept of the national accounts. Components arrived at by the direct-survey method are supplemented by derived estimates

for other components, for example, consumer expenditures, wages, salaries, and supplementary labor income. The national forecast is then supported and checked by two supplementary forecasts, one regional and the other industrial. The regional forecast examines the national forecast in terms of what it would mean for the five major economic regions in Canada and whether these five regions have the resources and can count on the demand to make their contributions to the gross national product foreseen for the coming year. A similar job is done for the major types of industry in Canada, covering wood and paper products, mining and mineral products, iron and steel and their products, construction materials, fuel and power, and consumer goods. Because of the importance of primary commodities for the Canadian economy, special attention is also paid to agriculture and fisheries.[28]

National economic forecasts are prepared in draft form in the Department of Trade and Commerce, drawing on the best knowledge available within and outside the government. They are usually prepared twice a year—at the beginning and in the middle of the year. Intermediate changes are also kept under review. Information presented in the form of the national economic forecast is prepared for government use, and statements on the economic outlook in general are made from time to time by the Prime Minister and other members of his Cabinet.[29] For example, in the debate on the Speech from the Throne early in 1950, the Prime Minister made the following general statement which summarized the government's attitude toward the economic forecasting work carried on by its officials: "The economic outlook for 1950 is one of continuing general buoyancy, but with an increasing number of special industrial and associated area problems. Forecasts of the economic outlook are made by the economic research and development branch of the Department of Trade and Commerce for the use of the government. They provide us with a scientific and complete economic appraisal of the foreign trade and domestic business outlook, and of the trends of

[28] Firestone, *op.cit.*, p. 9.

[29] Other examples include: statement by the Prime Minister, *House of Commons Debates*, January 28, 1949, p. 63; statements by the Minister of Finance included in his Budget Addresses, e.g., *ibid.*, April 29, 1947, p. 2545, and *ibid.*, April 10, 1951, p. 1798; and statements by the Minister of Trade and Commerce, *ibid.*, March 1, 1949, p. 1014, *ibid.*, March 31, 1950, p. 1430, and *ibid.*, February 8, 1951, p. 183. For an example of questions raised by the leader of one of the opposing parties in Parliament about observations made by the Prime Minister on the economic outlook see *ibid.*, February 23, 1949, p. 817.

other significant factors, which is helpful to us in formation of policy. They are not made for publicity purposes, but are made to advise us what we have to expect, so that we may attempt to shape our policies accordingly."[30]

9. Techniques of investment forecasting

The techniques of investment forecasting cover the collection of data and qualitative information and the weighing of the evidence.

Among the many ways in which estimates of future capital outlays can be obtained, four have become especially common in recent years: (1) surveying intentions of buyers of capital goods, (2) surveying sales and production expectations of sellers of capital equipment, (3) making estimates based on qualitative reports reflecting economic expectations in industry and in other sectors, and (4) making estimates based on the projection of past trends (with allowance for growth and cyclical factors) or a study of the interrelationship of different economic flows or financial data—profits, depreciation reserves, borrowing, and so forth.

All four methods have been tried in Canada. The most satisfactory results have been achieved by use of the direct surveys of purchase intentions of buyers of capital equipment. However, where information has not been obtainable in this way or where additional data have been required as a test of or check on capital expenditure intentions as reported, the other three techniques have been used.

The most direct method is simply asking people who are in a position to make capital expenditures what they are likely to spend in a given period. This is done in Canada by means of annual investment-intentions, or capital expenditure anticipation, surveys covering the business sector, institutions, and governments. These surveys are then followed by others to determine capital expenditures actually made, and the resulting differences yield an indication of the closeness with which business, institutions, and governments have been able to approximate in aggregate their future capital outlay. These capital expenditure surveys, which form the substance of Canadian data on investment intentions, are discussed in more detail in section B 10.

The second type of survey consists of asking the people who supply capital goods whether they expect changes in production and sales for the coming year and if so what they expect. This approach shifts the burden of assessing the strength of the capital goods mar-

[30] *ibid.*, February 20, 1950, p. 55.

ket onto the shoulders of the supplier. A justification for doing this is the intimate understanding of the operations of the market which producers and sellers of capital equipment must have if they are to succeed in business. Businessmen are assisted in making their own appraisals in two ways. First, they can gauge the short-term situation fairly well from the rate at which forward orders are being placed. Secondly, they are constantly reappraising the market prospects in the light of direct contact with buyers. Thus their judgment is frequently based on first-hand knowledge that enables them to detect new opportunities or warning signals of market weaknesses.

This is not to say that businessmen do not make mistakes or on occasion substantially misjudge the situation. But the penalty for errors is great, frequently business failure, so that on the whole the business community can be relied upon to be fair judges of their own spheres of activity. But since specific fields of business activity may be significantly affected by major economic events or government policies, sellers of capital goods cannot always be relied upon as investment forecasters. However, there will be special circumstances where they are in a good position to anticipate sales. An example of this is a period when demand presses heavily on supply, and prices are rising, with the producer being fairly sure that he can sell almost everything he is likely to turn out even at higher prices. At such a time adequate knowledge of the availability of supplies (materials, labor, and equipment) may assist in coming reasonably close to the amount of capital goods the nation or an industry will acquire in a future period.

From the end of the war until about 1948 supply problems significantly affected the formulation and realization of capital expenditure plans, and they have done so again since mid-1950. During the whole period the availability of basic and building materials has been continuously reviewed in this country, with the results published in the form of White Papers since 1947. These documents have been accompanying the White Papers on private and public investment prospects discussed annually in the Canadian Parliament.

Papers on the basic and building material outlook provide information on production, sales, inventories, exports, and imports of a number of commodities, including where possible an estimate of the supply situation for a year ahead. For 1951 the following principal basic and building materials were covered: iron and steel products, lumber, cement and cement products, clay products, mineral wool products, gypsum products, roofing products, and a number of mis-

cellaneous commodities, including paints, pigments, varnishes, insulating board, and nonmetallic sheathed cable. The survey covered a total of thirty-two items.[31] This information is obtained partly through a questionnaire survey conducted by the Dominion Bureau of Statistics and partly through personal interviews by commodity officers of the Department of Trade and Commerce (for a time also by officials of the Department of Defense Production in such fields as steel and steel products). Both departments also keep under surveillance the supply situation of the more important machinery and equipment items going into domestic investment.

There are two other sectors in Canada in which estimates of prospective capital expenditures are based on a survey of production and sales targets of sellers: agriculture and home-building.

In agriculture it is mainly the Canadian farm machinery producers who are canvassed by field interview methods. The returns are then reviewed in the light of information on farm income, prospects for prices and markets for agricultural produce, stock of available equipment, the rate of obsolescence, and so forth. While estimates of suppliers of farm machinery and equipment are not necessarily fully accepted, because of the impact of some of the other influences mentioned, their judgment represents a fairly important factor in arriving at the final estimate of future capital expenditures by farmers. Such estimates are also checked with other organizations which keep in close touch with agricultural conditions in Canada, such as the Federal Department of Agriculture.

Housing is the other field in which considerable effort is expended to arrive at estimates of likely capital expenditures through surveys of the supply side. Central Mortgage and Housing Corporation, the national housing agency of the Canadian government, annually conducts surveys of the number of houses likely to be started, completed, and under construction for a year ahead in all cities and towns with a population of 5,000 or more. This involves a canvass by branch and other field staff members in over 130 communities. These officers consult local officials, builders, contractors, architects, supply firms, mortgage-lending companies, and other individuals and firms concerned with the building of houses in each community. Using the information obtained from these sources and their own knowledge, representatives of Central Mortgage and Housing Corporation prepare estimates of the likely volume of house-building in

[31] Department of Trade and Commerce, *Supply of Basic and Building Materials in Canada, Outlook 1951*, p. 16.

each of the localities surveyed. In 1950 about three-quarters of total new residential construction was undertaken in these cities and towns. Estimates by the field staff are then checked separately for each locality by the five regional offices of Central Mortgage and Housing Corporation, using information at the disposal of regional offices that might not have been available in the localities, for example, information on the future building material supply situation and availability of credit. Where the judgment of regional officers differs from the findings of field representatives, the reasons for the differences are given when the local returns are forwarded to the Head Office. The supply of and demand for housing are reviewed by regional officers in smaller communities with a population of less than 5,000, and without any claim to numerical precision a rough indication is given whether the volume of house-building in these localities as a whole is likely to continue at the current level, rise above it, or fall below it.

Regional officers also prepare estimates of prospective changes in construction costs—separately for building materials and construction wage rates—based on discussions with builders, contractors, supply houses, and construction trade-unions. Field reports, regional comments on the volume of local and regional house-building activity, and estimates of construction cost trends are then reviewed by the Head Office of Central Mortgage and Housing Corporation. This office also prepares estimates of the likely volume of publicly built housing based on the government's proposed program. Estimates of the number of starts and completions and carryover are then translated into dollar totals by means of estimates of average construction cost per house (varying for nonfarm, farm, and converted units), and allowance is made for changes in building costs as indicated by the cost survey. Separate allowances are also made for major improvements and alterations, and finally there results an estimate of the total amount of new residential construction work likely to be carried out in the following year.

The technique of making estimates in fields not covered by surveys, involving the use of general information about conditions in the industry, is employed in Canada in four comparatively small sectors—fishing, individual retailers, and the residual groups in finance and commercial services.

These three methods yield the totals of what is covered in this country as capital expenditure intentions by all private and public sectors. Estimates of anticipated investment as defined in the na-

tional accounts are also made, based mainly on a study of the interrelationship of economic stocks and flows. This is part of the econometric research work undertaken in Canada.[32]

In appraising the data, field reports, and general comments thus collected, several points are borne in mind. Although investment decisions are largely endogenous in character, there are many general economic, political, and international circumstances that may affect them, for to a substantial extent business capital expenditure plans are conditioned by the climate in which they are formulated. It is therefore necessary, in arriving at a judgment of what the likely volume of investment will be in a subsequent year, to take account of the resources available in the country, the different demands that are made on these resources, the competitive strengths of the various sectors endeavoring to carry out their plans,[33] and the effect of public policies and changing international circumstances[34] on proposed capital projects. This balancing of the various claims on the resources of a country in times of full employment throws light on the question of whether investment intentions as stated can be realized. Different problems would be faced in times of generally declining economic conditions.[35] The kinds of questions that would come to the fore then would be cancellations of investment intentions, the possibility of alternative programs, and the dimensions of resources likely to be unused and their possible transfer to other tasks.

Another important point which the investment forecaster must bear in mind arises out of recognition of the principle that closeness of investment intentions to realization does not necessarily come about because everybody's report turned out to be right. Although

[32] For a report on the progress of this work see the paper on "Canadian Experience in Forecasting from Econometric Models," by T. M. Brown, presented at the Econometric Society meeting in Boston, December 28, 1951. See also T. M. Brown, "Habit Persistence and Lags in Consumer Behaviour," *Econometrica*, Vol. 20, No. 3 (July 1952), pp. 355-371.

[33] For example, when available construction resources are insufficient to meet all the demands, industrial construction usually is in a position to secure a larger share than economically weaker sectors, e.g. residential construction. See Central Mortgage and Housing Corporation, *Annual Report for the Year 1950* (1951), pp. 5-6.

[34] This is a particularly important factor for Canada, where the degree of prosperity and a rise in the standard of living are greatly affected by levels and terms of trade. In 1950, for example, exports of goods *and* services amounted to $4.2 billion, or 23 per cent of the gross national product of $18 billion.

[35] Not experienced in Canada between the end of World War II and the outbreak of the war in Korea.

the analyst welcomes having at his disposal a reliable estimate of investment for the coming year as a tool for an appraisal of national aggregates, he must recognize that the plans of business may change or be frustrated for many reasons. Modification of the general business outlook, changing price trends, shortages of some materials and skilled labor may result in postponement or other changes in investment plans. Individual businesses have different planning periods, and in some, changes in plans are kept flexible as a matter of policy. But on the whole, as the evidence in section C suggests, there are likely to become apparent definite upward or downward trends, as the case may be, in major sectors, with many of the variations in each sector, either up or down, being cancelled out. Although differences between intentions and realization as reported by individual companies or groups of firms may often be great (see section C 5), the overall results of the intentions surveys may be close enough to be of assistance to the decision-making process of either business or government.

The collection of data for the two annual White Papers on the investment outlook and the basic and building material outlook is to a large extent in the hands of the Dominion Bureau of Statistics. Only in such cases as housing and provincial and municipal government investment are the data largely collected by other agencies, such as Central Mortgage and Housing Corporation and provincial authorities. Qualitative information from the field is obtained through personal interviews by representatives of a number of administering federal departments, and the information is collated when the analysis of the investment outlook and the basic and building material outlook is made. These two papers are prepared by the Department of Trade and Commerce jointly with the Dominion Bureau of Statistics.

10. Capital expenditure surveys

Currently, four types of capital expenditure surveys are undertaken annually in Canada. Two of these are intentions surveys, the other two aim at measuring actual capital outlay.

An intentions survey is conducted at the end of the year for the year ahead, the results being summarized and released early in the new year. This year-end survey is made with as full a coverage as appears feasible and economical. Subsequently, in May of the year to which investment intentions apply, a follow-up survey based on a sampling technique is used to detect any changes that might have

taken place in capital expenditure intentions in the intervening six months and to establish the reasons for such changes.[36]

The year-end survey of capital expenditure intentions is accompanied by a survey of preliminary estimates of actual capital expenditures in the current year. In the 1950 and 1951 surveys one form was used to elicit both types of data (see Appendix B). This survey yields preliminary estimates of capital expenditures made[37] and provides the basis for gauging investment intentions for the subsequent year. There are two advantages in this approach. First, the most recent estimates by business of actual capital expenditures become available when investment intentions are reviewed. Secondly, figures reported for both years come from the same firms, and, with no change in estimating technique, percentage variations by firms, industries, regions, and in the aggregate for all establishments reporting, can be obtained.

Another capital expenditure survey, designed to yield final totals of actual outlay, follows early in the year, covering the year just past. The results of this survey become available in the course of the year and are incorporated in the subsequent White Paper on the investment outlook. Thus the 1951 document included revised estimates of actual capital expenditures made for 1949, preliminary estimates of actual capital expenditures for 1950, and investment intentions for 1951. All three sets of data are shown in the detailed tables contained in the White Paper.[38]

Information on capital expenditures is obtained separately for new building and other structures and the purchase of new machinery and equipment. The following instruction is provided for new construction in the schedule: "Show expenditures on all new construction, including buildings of all types, mine shafts, tracks, roads, transmission lines, blast furnaces, docks, aerial towers, etc. Exclude the value of land purchased but include the cost of land improvements. Exclude expenditures for the purchase of previously existing buildings and other structures." For machinery and equipment the following instructions are given: "Show the installed cost of all new machinery and the delivered cost of movable equipment such as new motor cars, trucks, railway rolling stock, office furniture and

[36] The first midyear survey was undertaken in 1947.

[37] The data are preliminary because they are generally obtained before the end of the current year and involve the respondents' estimating expenditures still to be made.

[38] Department of Trade and Commerce, *Private and Public Investment in Canada, Outlook 1951*, pp. 10-36.

appliances, etc., whether for your own use or for rent to others. Exclude expenditures on used machinery and equipment" (see Appendix B). The capital expenditure schedule also asks for information on repair and maintenance outlay for buildings and other structures and for machinery and equipment. The results of the last two questions are tabulated, and estimates of total repair and maintenance outlay are included in the White Papers on the investment outlook. Repair and maintenance data, however, have been omitted from the review in this paper, which is concerned with new investment only.

The direct-survey technique of collecting capital expenditure data, in regard to both plans and realization, is used in Canada for business, institutions, and governments. There are some minor variations, which are summarized below.

Capital expenditure intentions of business are surveyed on an establishment basis covering in general all enterprises with an annual gross value of production (or its equivalent) of $100,000 or more. A 3 per cent sample is taken of the smaller companies where this is considered advisable; for example, in manufacturing a 3 per cent sample is used. Some variation in this technique occurs in five of the sectors surveyed.

In wholesale trade, establishments with sales of $1 million or over are fully canvassed, and a sample survey is conducted for the remainder. In the Canadian automotive trade, where no sales data are available, firms with fifteen or more employees are surveyed. In the case of theaters all chain theaters are covered, and that includes theaters having three or more outlets. For hotels all enterprises with 100 rooms or more are canvassed, and a sample of the remainder is taken. Allowance for nonreporting or noncoverage is made on the basis of the gross value of production (or its equivalent). Where such data are not available, adjustments are made on the basis of supplementary information, for example, employment in the automotive trade and the number of rooms in hotels. As the data in Appendix A show, the coverage of and response to surveys of capital expenditures are high, 81 per cent in 1951 for all business groups surveyed, although there are significant variations among sectors. In terms of numbers of firms, questionnaires were mailed to about 17,000 business establishments in connection with the 1951 investment-intentions survey and approximately 11,000 replies were received by the cut-off date at the middle of January 1951.

The midyear investment survey is a sample survey which covers

about 10 per cent of the firms canvassed in the year-end survey and about 50 per cent of the capital expenditures planned (see section C 2).

The end-of-year preliminary survey of capital expenditures made follows the same approach and has substantially the same coverage as the year-end survey covering investment intentions for the following year.[39]

The second capital expenditure survey asking for revised data for the year past also follows broadly the techniques of the year-end investment-intentions surveys. However, there is not the same urgency for early publication of results of this survey, and it is possible to conduct a much more intensive follow-up procedure. As a result, the proportion of those reporting to those canvassed is usually somewhat higher than in the other surveys.

Capital expenditure intentions by institutions cover four major groups: churches, hospitals, universities, and schools.

The individual dioceses of three major churches are covered in Canada by means of direct surveys. These are the Roman Catholic, Anglican, and United churches, whose adherents comprise about 80 per cent of the Canadian population with religion stated. For dioceses not reporting, allowances are made on the basis of revenues collected and the number of adherents. For churches not covered, estimates are made on a population basis.

All private and publicly owned hospitals with 100 or more beds are canvassed. For the small hospitals a sample is selected on a provincial basis designed to yield a fairly representative coverage. Hospital bed capacity, that is, the rated ability of hospitals to accommodate patients (and not necessarily the number of beds actually placed in the hospital), is used to make allowances for nonreporting or to blow up sample returns.

All universities in Canada are canvassed with respect to their capital expenditures. An allowance for nonrespondents is made on the basis of the number of students enrolled.

All schools, including day and night schools and technical and commercial institutions, are covered. Reports are obtained mainly through the provincial departments of education, which in turn canvass individual establishments and use other information avail-

[39] There will be some differences between the results of intentions as stated and preliminary reports of actual expenditures covering the *same* year because the response varies a little from year to year. Also, new companies are added each year, and some firms go out of business.

able regionally. Where reports are incomplete, estimates are made on the basis of supplementary data, for example, school debentures approved by provincial authorities.

Capital expenditure intentions by governments cover three levels in Canada: federal, provincial, and municipal governments. Since publicly owned enterprises and institutions are covered by the business and institutional surveys, the data listed under governments substantially cover capital expenditures made by government departments operating under a vote system. Since the information on capital expenditure intentions and actual outlay is obtained separately for private and publicly owned business establishments, for institutions, and for the housing sector, it is possible in Canada to separate investment intentions into those made by private individuals, firms, and agencies and those made by all public authorities. The breakdown is shown in the investment-outlook documents in addition to the customary classification of business and other sectors. This information is of particular importance at a time when investment decisions of private groups and public authorities may show a different trend. To illustrate the quantitative significance of the difference between government and total public investment, in 1950 investment by governments (mainly departments operating under the vote system) comprised 13 per cent of total private and public investment of $3.8 billion, but public investment (including also public business enterprises, institutions, and housing) comprised 26 per cent.[40]

In the case of the federal government, information on capital expenditure plans and actual outlay is obtained from departmental submissions, estimates as approved by Parliament, and Treasury records of the Department of Finance.

For provincial governments the information is obtained in some provinces from one government department which acts as the central collecting agency for that government; in other provinces the arrangement is for the Dominion Bureau of Statistics to send separate questionnaires to individual government departments most likely to make capital expenditures, for example, departments of public works, highways, and agriculture.

For municipal governments and other local bodies capital expenditure data are obtained in most instances through provincial departments of municipal affairs or corresponding provincial agencies. In some cases, at the request of the provincial government

[40] *ibid.*, p. 5.

separate questionnaires are mailed directly by the Dominion Bureau of Statistics, and the corresponding estimates are then prepared in Ottawa rather than in the provincial capitals.

11. Cooperation of respondents

Obtaining cooperation from business and other sectors canvassed by means of direct surveys of capital expenditure intentions has been a gradual process spread over a period of seven years. Eight factors which have contributed to an improvement in the quality and timing of returns received are listed below. There has been little need to increase coverage in terms of numbers, for the response has continued to be high over the whole period. In fact, in recent years it was found desirable to reduce somewhat the number of firms surveyed by using a sample of small firms.

1. In approaching business firms for information on their investment intentions, great stress has been laid on explaining to them why the surveys are being undertaken and to what use the results are being put by government.

2. Each participating firm has been assured that the information would be kept confidential and that only group totals would be published, so that the plans or records of any one company would not become known to competitors.

3. On several occasions the Minister of Reconstruction and Supply (now the Minister of Trade and Commerce) communicated with all firms participating in the investment-intentions survey, thanking them for their cooperation and sending them a summary of the results of the survey. He advised participating firms that those wishing to receive copies of the investment-outlook White Papers, which provided more detail, could obtain these free of charge by writing to his department. Many firms asked for their copies and continue to receive them.

4. The Minister also approached a number of business organizations, such as the Canadian Manufacturers' Association and Canadian Chamber of Commerce, asking them to impress upon their membership how important it was not only to participate in the investment-forecast surveys, but also to use their best judgment concerning the likely amount of capital expenditures they would be making a year hence. This was considered important in order to reduce the filling out of questionnaires by junior officers of the larger corporations who might not be sufficiently familiar with top-management decisions and general business policies.

5. Follow-up correspondence, telephone calls, and personal visits by government officials—the latter perhaps not as frequent as might be desirable—have helped business firms overcome some difficulties arising out of the differences in definition of capital expenditures as used in the intentions questionnaire and those available in the firms' own records. Other problems came from the timing of the survey, because many companies had not fully formulated their capital expenditure plans when the survey was undertaken. In such cases it was emphasized that what was wanted was the "best estimate" at this time rather than information on a more definitive program available at a later date. (The latter would in many cases be covered in the midyear review of investment intentions.)

6. A group of some two dozen business economists associated with large corporations, including firms in primary and secondary industries, finance, and trade, are meeting two or three times a year with government officials concerned with the appraisal of the economic outlook. At such meetings the results of the investment-intentions surveys are generally discussed, and the advice of business economists is sought on such questions as the likely realization of the intentions as stated and qualitative considerations that bear on survey results. Business economists are also being consulted on questions relating to improvement of investment-forecasting methods and reporting by the business community. Business economists in turn have been educating their own firms and many other companies with which they are in contact about what these investment forecasts mean, how business can use them to its advantage, and how important it is for businessmen to cooperate to obtain the best possible information on the subject.

7. As indicated earlier, the investment forecasts have been presented in the House of Commons as White Papers, to emphasize the importance which the government attaches to the information as an aid in appraising the economic outlook and formulating economic policies. As a result a great deal of publicity has been given to this material. Newspapermen have been reporting widely the results of the investment forecasts. In fact some of them have become so interested in the material that they have on occasion sought information in advance of publication of the document. From time to time guesses appear in some of the papers. The publicity given to investment forecasts has aroused general interest and greater awareness of the usefulness of the data.

8. Perhaps the two most important factors contributing to an

improvement in the quality of anticipatory capital expenditure data as reported by business have been the growing public understanding of the impact of investment on the economy as a whole and on industry in particular, and the generally friendly and cooperative relations in Canada between business and government, which make it easier to obtain and share increasing knowledge about business behavior.[41]

Similar techniques have been employed in the capital expenditure surveys, which cover sectors other than business, for example, institutions and governments. Good results have been obtained by decentralizing the data-collection process where this has appeared practical. This is the case with regard to data on provincial and municipal government investment, which for the most part are collected by the respective provincial agencies and then transmitted to the Dominion Bureau of Statistics, the Canadian government data-collecting agency.

12. Investment forecasting in other countries

In the United States, investment forecasting is based primarily on surveys of capital expenditure intentions by businesses canvassed quarterly and annually. The techniques employed are similar to those used in Canada, with a few exceptions. The United States survey is based on a small sample and is taken more frequently than its Canadian counterpart. The Canadian survey covers more business firms and also covers the residential, institutional, and government sectors, not surveyed in the United States. Also, the Canadian survey places a great deal more emphasis on detailed industrial classification and regional and city breakdowns than does the American survey (see section C 8).

A number of other countries have recognized the importance of assessing in advance the dimensions and the composition of the investment program that might be desirable or that could be implemented in the light of available resources and foreign exchange reserves and earnings. The preparation of such material has been given added importance by the requirements of such international organi-

[41] The cooperative attitude of business has been emphasized by the Minister of Trade and Commerce on a number of occasions. For example: "It [the survey of capital expenditure intentions] is a type of survey that has been made for the past several years which has proven to be remarkably accurate. Its importance has been recognized by business, and each year we are getting better cooperation from business in working out that survey." *House of Commons Debates*, March 1, 1949, p. 1014.

zations as the Organization for European Economic Cooperation.[42] It was recommended that all countries participating in OEEC "study all methods of coordinating their investment plans and programmes by mutual consultation for the purpose of encouraging additional investment which would contribute towards European viability, and of discouraging unnecessary expenditures in other fields."[43] Carrying out this recommendation required the preparation of some type of investment forecast in the countries concerned.

The way in which investment forecasts are presented and the technique by which they are prepared vary from country to country, depending upon the purpose for which the material is destined and on available sources of information. In most western European countries the estimate of future capital expenditures is an integral part of the national budget. As such it is an estimate of how much investment is likely to take place. In most of the European countries which experienced heavy war damage the volume of capital outlay is conditioned more by government policies than by businessmen's intentions, for governments are making every effort to restore and improve the countries' productive facilities. In countries in which war damage was of less importance the investment outlook may depend more on businessmen's intentions, and overall investment plans may be more like the type formulated in the United States and Canada. To illustrate the differences a brief summary is given below of the methods employed in estimating future investment in six countries.

The United Kingdom, Norway, and the Netherlands are representative of countries which, in order to restore their productive facilities, maintained fairly extensive controls over the extent and direction of investment expenditures in the immediate postwar period. In these countries the investment forecast has represented a statement of the amount of investment that is likely to take place, as conditioned by government planning.

[42] Cf. also discussions of the United Nations Economic and Social Council on the subject of full employment, particularly at its 11th Session in Geneva, July 3 to August 16, 1950, which had before it a report prepared by a group of experts on "National and International Measures for Full Employment" (United Nations, New York, December 22, 1949, E/1584). The following quotation is an example of the emphasis which this report placed on the need for forward-looking investment surveys: "This [policy to influence the timing of private investment] would require that the government obtain information on the investment plans of the individual firms for a sufficient time ahead to be able to exert an influence on the actual timing of their execution" (p. 34).

[43] *European Recovery Programme, Second Report of the O.E.E.C.* (1950), p. 236.

In the United Kingdom a forecast of investment is prepared covering all parts of the economy, including both the private and the public sector. The forecast for the private sector is apparently prepared after consultation with large industrial organizations. It is based on information obtained from business firms, the value of building that the government is prepared to authorize, the likely production in the building materials and producers' durable goods industries, the trade outlook, and a blending of resources allocated to investment with those allocated for other purposes.[44] Similar techniques are used in Norway[45] and the Netherlands.[46] These two countries are more heavily dependent than the United Kingdom upon imports of machinery and equipment. Thus the fact that governments in these two countries control imports makes it possible for them to determine how much foreign exchange will be made available for the purchase of machinery and equipment. Variations between forecasts and realization in these countries may result not only from unforeseen changes in the price and supply situation, particularly in North America, but also from changes in the government's investment policies during the year; for example, a strong popular demand for more housing may influence the government to divert resources from the industrial to the housing sector, or defense demands may necessitate a cutback in certain civilian programs.

In Belgium[47] and Sweden the capital stock was little affected by ravages of war. Investment expenditures in these countries represent a modernization and expansion of the productive facilities. Here the investment forecasts are based largely on businessmen's intentions. In Sweden an annual survey of investment intentions is taken, covering about 4,000 industrial enterprises.[48] In that country, however, foreign exchange difficulties have been a more serious problem in recent years, and the government has attempted to control the volume of investment through a building-permit policy.

In countries outside Europe investment forecasting follows more along the Canadian and American lines, with published statements

[44] See *Economic Survey*, an annual report presented to the British Parliament by the Chancellor of the Exchequer (H.M. Stationery Office).

[45] See *The Norwegian National Budget*, an annual report prepared by the Royal Norwegian Ministry of Commerce.

[46] Economic Cooperation Administration, *European Recovery Program, The Netherlands Country Study* (February 1949).

[47] See Economic Cooperation Administration, *European Recovery Program: Belgium and Luxembourg Country Study* (February 1949).

[48] See Swedish-International Press Bureau, *Latest Economic News from Sweden*, March 21, 1949.

on the value of investment intentions of business. Australia has made considerable progress in this regard, making public reports on business investment intentions semiannually. These reports are based on a survey of approximately 30 per cent (in terms of salaries and wages paid) of Australian business enterprises.[49]

C. Results of Investment Forecasts

1. Aggregate business investment intentions and realization

Surveys of annual business[50] investment intentions in Canada have in the last five years proven to be remarkably close to the amounts reported spent by industry on capital equipment, differences varying from 2 to 8 per cent. In the follow-up surveys, usually undertaken in May of the year to which the investment intentions apply, even closer results have been achieved, with variations of less than 1 per cent to 6 per cent being indicated. In the first two years of operation of the survey, 1945 and 1946, the results were less close.

Capital expenditure intentions and realization by business for the years 1945 to 1951 are summarized in table 1. Several sets of data are used and their different meanings should be kept in mind in proceeding with the appraisal.

A distinction is made between the series described as "varying coverage" and the series called "full coverage." The sets of data shown under varying coverage are fully comparable with one another for any one year. They are not comparable with data for other years because of increases in coverage. The series under full coverage are comparable over the period shown.

Varying coverage refers to changes in coverage of groups of industries surveyed as the scope of the capital expenditure intentions survey expanded from year to year. For example, in 1945 the survey covered manufacturing, mining, central electric stations, and telephones. In 1946 woods operations, broadcasting, steam railways and telegraphs, electric railways, air and water transportation, and motor carriers were added. By 1951 all industrial sectors for which the direct-survey method appeared practical and economical were being covered in this way.[51]

[49] See Commonwealth Bureau of Census and Statistics, *Quarterly Business Survey.*

[50] In 1950, capital expenditures made by business comprised three-fifths of total private and public new investment in Canada; the remaining two-fifths represented residential, institutional, and government investment.

[51] As the data in Appendix A indicate, 79 per cent of the total estimated value of business investment in 1951 was covered by direct surveys of capital expenditure intentions.

TABLE 1

Business Investment Intentions and Realization, Canada, 1945-1951

Year	*Varying Coverage*[a]					*Full Coverage*			
		Realization		*Percentage Difference between Realization and Intentions*		*Realization in Current Dollars*	*Realization in Constant*[b] *Dollars*	*Annual Percentage Increase*	
	Intentions (millions of current dollars)	*Preliminary Estimate*	*Revised Estimate*	*Preliminary Estimate*	*Revised Estimate*	*(millions)*		*Volume of Total Business Investment*	*Prices of Capital Goods*
		(millions of current dollars)							
1945	324	239	241	+35.6	+34.4	747	530	0.6	1.3
1946	678	552	584	+22.8	+16.1	992	668	26.0	6.8
1947	1,034	1,010	1,083	+2.4	—4.5	1,569	929	39.1	19.1
1948	1,731	1,786	1,948	—3.1	—11.1	1,969	1,011	8.8	16.7
1949	1,903	1,960	2,086	—2.9	—8.8	2,130	1,049	3.8	4.4
1950	2,026	2,212	[c]	—8.4	[c]	2,293	1,057	0.8	6.9
1951	2,635	2,855[d]	[c]	—7.7	[c]	2,855[d]	1,189[e]	12.5[e]	12.0[e]

[a] Covers in 1945 manufacturing, mining, central electric stations, and telephones. In 1946 woods operations, banks, broadcasting, steam railways and telegraphs, electric railways, air and water transportation, and motor carriers were added. In 1947 the construction industry, warehousing, wholesale establishments, general and department stores, laundries and dry cleaners, and theaters were added. In 1948 agriculture, fishing, insurance companies, independent stores, hotels, and other financial and other commercial establishments were added. An allowance was also made for capital items charged to operating expenses for manufacturing, utilities, and trade. In 1949 grain elevators and automotive trade were added. In 1950 oil pipelines were added. In 1951 municipal waterworks were added.

[b] In 1935-1939 dollars.

[c] Not available.

[d] Midyear survey.

[e] A 12 per cent annual average increase in prices of capital goods is assumed.

Source: Canadian government data.

Under varying coverage three sets of data are included: (1) Investment intentions which indicate amounts of anticipated capital expenditures as reported by business. (2) Preliminary estimates of realization of investment intentions, that is, actual capital expenditures made, based in large part on preliminary returns of capital expenditures reported by industry toward the end of the year to which the estimates apply. In some cases the data shown in table 1 differ from those published annually in the Canadian government White Papers on the investment outlook because of adjustments made to facilitate comparability for this appraisal, such adjustments involving use of exactly the same estimating methods in arriving at the preliminary data of actual expenditures as had been used in compiling the data on investment intentions. By this process differences between investment intentions and realization which are due solely to changes in estimating techniques have been eliminated. For example, in 1947, investment intentions as published include no allowance for capital items charged to operating expenses, while the published figures on preliminary estimates of actual expenditures included such an allowance. (3) Revised estimates of actual capital expenditures based usually on the final capital schedules completed by business firms early in the following year. Revised estimates include any changes in estimating techniques that were developed subsequent to making estimates of investment intentions.

If a comparison is wanted between planned business capital expenditures as they became known to the decision-makers and actual investment expenditures as they are now estimated, the series under (1) and (3) should be used. If, on the other hand, the appraisal is concerned with the ability of the business community to anticipate the extent of capital expenditures a year ahead, the use of the series under (1) and (2) appears to be more appropriate. Since this paper is concerned with an assessment of the second problem, the series of revised estimates of actual expenditure is omitted from subsequent tables except tables 21 and 22.

The full-coverage series includes realization of business investment in current and constant dollars to reflect both value and volume changes of business investment actually carried out.[52] It also shows changes in the prices of capital goods in Canada between 1945 and 1951.

There are many factors that bear on the differences between in-

[52] Department of Trade and Commerce, *Private and Public Investment in Canada, 1926-1951* (November 1951).

vestment intentions and realization. Some concern reporting and statistical problems (see section C 7). Others involve differences between industries, regions, and firms (see sections C 3-5). Still others, and these are most important for aggregate economic analysis, involve the reaction of the business community as a whole to certain technological and market conditions as well as to supply and price problems. This last phase of business investment intentions and realization is reviewed in the paragraphs that follow.

In 1945 and 1946, surveys of business investment intentions and preliminary estimates of realization show differences of 36 per cent and 23 per cent respectively (see chart 1). The newness of the survey presented a number of difficulties to respondents, not all of

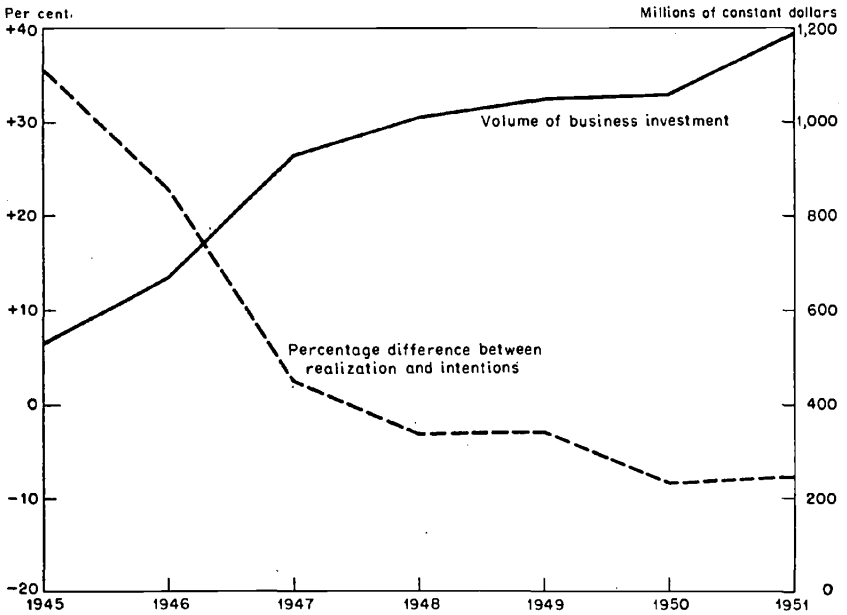

Chart 1. Volume of Business Investment and Percentage Difference between Business Investment Realization and Intentions, Canada, 1945-1951

which were consistently solved. However, the basic problems that industry was facing in the two years were the need to reconvert business facilities to peacetime uses as rapidly as possible, the desire to modernize and reequip plants (involving many undertakings postponed during the depressed thirties and the war years), and the need to erect business premises and to purchase equip-

ment for turning out new products and employing newly developed processes and production techniques. All this business expansion was facilitated by greatly increased managerial competence as a result of extensive experience gained during the war years, and by ample financial resources.

In attempting to expand their productive facilities rapidly, Canadian businessmen were faced with a number of difficulties peculiar to the immediate postwar years. The domestic producers of both construction materials and machinery and equipment found that increased production must await the expansion of their own productive facilities. Competing demands from other sectors of the economy for materials, particularly steel and coal, and for labor accentuated the supply problem. The demands of the export industries, which were faced with heavy orders from war-devastated countries for raw materials and manufactured products, were of particular importance. The existence of a set of wartime controls of allocation and prices, the relaxation and removal of which took several years, and the time required to demobilize men returning from overseas and to reorient war workers seeking peacetime jobs further added to the difficulties. Superimposed on these conditions was the disruption in production that followed in the wake of a large number of strikes when organized labor was again able to resort to this means of improving its bargaining position.

Thus business investment intentions in 1945 and 1946 as gathered from these surveys largely reflected what industry hoped it could achieve. But as the rush of orders for capital equipment led to supply bottlenecks, only a portion of what business had hoped for could be realized. That this was the situation appeared to be quite clear at the time the results of the investment-intentions surveys were analyzed. For example, in 1946: "But not all of these investment plans are likely to be realized this year. Although a number of industrial bottlenecks have been overcome, manpower and material shortages, particularly coal, steel and building materials, and strikes hold back a full realization of these intentions of industry, business and consumer."[53] Taking account of these supply difficulties, the conclusion was then reached that total anticipated capital expenditures were likely to fall short by about 16 per cent of what appeared to be the investment intentions of business, institutions, and home owners.[54] Even though the difference between

[53] Department of Reconstruction and Supply, *Capital, Repair and Maintenance Expenditures of Business Enterprises in Canada, Forecast 1946*, p. 14.
[54] *ibid.*

business investment realization and intentions was of the order of 23 per cent, estimates based on an analysis of the physical limitations came within 7 per cent of the actual capital expenditures made in 1946.

This need for matching supply of and demand for capital goods in connection with the appraisal of investment intentions, particularly in periods when demand is pressing heavily on supply, led in Canada to surveys of the likely output and domestic disappearance of basic and building materials, the results of which have been published regularly since 1947 in companion documents to the White Papers on investment outlook.

For 1947 the supply appraisal indicated substantial increases in the availability of basic and building materials, suggesting that a considerably larger investment program was possible.[55] This is in fact what happened. As the data in table 1 show, the largest volume increase in new investment in the postwar period occurred in 1947. In that year business came within about 2 per cent of realizing its capital expenditure intentions, perhaps an even better performance than had been expected at the beginning of the year.[56] However, since prices of capital goods rose rapidly during this year (see table 1), "higher prices than expected meant that a slightly smaller volume of capital expansion than planned was completed."[57]

In 1948 a further improvement in the supply situation appeared in prospect, while the rate of capital expansion was slackening (see table 1). In appraising both the supply and the demand outlook it was therefore possible to say, for the first time since the end of the war, "that it is reasonable to expect virtually full realization of the investment program contemplated."[58] In November 1947 the government announced a number of exchange restrictions to cope with the decrease in Canada's foreign exchange reserves.[59] The major impact of these provisions was to affect the composition of the investment program and to delay the execution of some parts of it,

[55] Department of Reconstruction and Supply, *Forecast of 1947 Investment by Canadian Business*, p. 6.

[56] "In spite of promised improvements in the supply of building materials, business is likely to experience in 1947, as in the previous year, some difficulties in carrying out its investment plans." *ibid.*, p. 1.

[57] Department of Reconstruction and Supply, *Private and Public Investment in Canada, Outlook 1948*, p. 2.

[58] *ibid.*

[59] For the impact of these provisions on capital goods imports, see the statement by the Rt. Hon. C. D. Howe, Minister of Trade and Commerce, *House of Commons Debates*, February 23, 1948, pp. 1492-1494.

but they had little effect on capital expenditures in the aggregate.[60] Thus business was in a position to carry out most of its plans for expansion, and actual capital expenditures in 1948 exceeded investment intentions by 3 per cent.

By 1949 the supply and demand situation had become fairly well balanced.[61] Again business investment came very close to estimates of anticipated capital expenditures, with realization exceeding intentions by about 3 per cent. In appraising the investment outlook for 1949 the point was made that "with increased availability of supplies in prospect, it is possible that larger programmes may be achieved in some economic sectors than anticipated."[62] Recessionary influences in the United States, declining overseas markets for Canadian produce because of exchange difficulties, and the completion of large expansion programs since the end of the war brought these words of caution for 1949: "Less firmness should be attached to the present forecast than in any previous post-war year. . . . Backlogs of investment requirements though still in existence have been narrowed to fewer fields. . . . Under these circumstances the investment programme, particularly in some business segments, appears more vulnerable than has been the case in recent years when the major uncertainties related almost entirely to questions of supply."[63]

While the record of the business community in estimating its prospective capital outlay had been particularly good from 1947 to 1949, with differences of 2 and 3 per cent being too small to matter for the present purpose, industry faced a more difficult task in 1950 and 1951.

When investment intentions for 1950 were surveyed, the economic situation in the United States was improving. Increasing quantities of basic materials were being exported to that country, creating some material shortages in Canada (particularly of lumber). Doubt about the strength of the United States recovery con-

[60] "The primary effect of this policy appears more likely to concern the composition of the investment programme than its size." Department of Reconstruction and Supply, *Private and Public Investment in Canada, Outlook 1948*, p. 2.

[61] "With respect to likely realization of intentions in 1949, physical limitations to the achievement of the investment programme should be of lesser importance. . . . Furthermore, the general business outlook does not suggest the likelihood of any widespread cancellation of intentions. These considerations suggest that it is reasonable to expect full realization of the investment programme contemplated." Department of Trade and Commerce, *Private and Public Investment in Canada, Outlook 1949*, p. 2.

[62] *ibid.*

[63] *ibid.*, p. 2.

tinued to be widely debated in the States, and this discussion was not without influence on Canadian thinking. The outlook for exports to overseas markets continued dim, domestic production in a number of fields either had leveled off or was declining, and the economy was not taking up fully the additions to its labor force.[64] International relations continued to be strained, but there were few signs that war in Korea was in prospect. In this situation the moderate increases in business investment expenditures in Canada anticipated for the year appeared reasonable and in fact, in view of the many national and international uncertainties, proved reassuring to the government, which was faced with a barrage of criticism for not taking sufficiently comprehensive measures in coping with local pockets of unemployment. In appraising the investment outlook the 1950 White Paper observed: "In general, the domestic market for 1950 appears firm and, as a large part of the investment programme is related to domestic needs, particularly those segments where increased outlays are indicated, it follows that a large proportion of the programme is to some extent insulated from outside influences. In addition, the difficulties which exist in overseas markets were apparent at the time when most firms made their forecast for 1950, and it seems probable that these were taken into account. However, for that part of the programme related to United States demand it should be kept in mind that the forecasts were made during a period when business was on the up-swing in the United States and any significant change in this trend would undoubtedly have some effect on the investment programme. It should also be kept in mind that with a large part of the post-war backlog made up there is less likelihood this year of substitute programmes taking the place of those that might be cancelled or deferred."[65]

In May 1950—that is, before the Korean incident—investment intentions for the year were reviewed, and a further firming of business capital expenditure intentions was indicated. The midyear survey suggested an increase in business investment of 5 per cent above what had been anticipated some six months earlier. What is perhaps even more notable is the fact that surveys of capital expenditure intentions appear to be able to take in their stride such

[64] See the statement of the economic situation in 1949 and 1950 by the Rt. Hon. C. D. Howe, Minister of Trade and Commerce, *House of Commons Debates*, March 31, 1950, pp. 1427ff.

[65] Department of Trade and Commerce, *Private and Public Investment in Canada, Outlook 1950*, p. 11.

major events as aggression in Korea. Although such an occurrence may bring a great deal of reorientation in national thinking as to the type and magnitude of defense and defense-supporting expansion, the *immediate* influence of this reorientation may, as far as new investment is concerned, turn out to be of comparatively minor importance. This is indicated by the Canadian experience in 1950. Year-end (1949) investment intentions were a little over 8 per cent lower, while the succeeding midyear survey was 4 per cent lower than a preliminary estimate of capital expenditures based on reports of business firms for 1950. Apparently—and this is also borne out by experiences during World War II—it takes time to reach agreement on the extent and type of military expansion most urgently required, to draw up plans and specifications, to place orders for equipment, to convert existing capacity, and to build new plants where existing facilities are either not available or not fitted for the purpose required. Therefore, months may pass before ideas are translated into brick and mortar or complicated machinery and equipment. In the interim, capital expenditures are rising gradually, not abruptly.

When the investment intentions of business for 1951 were surveyed at the end of 1950, the country's need to devote increasing efforts to defense production and military preparedness had become apparent, although the overall magnitude of defense expenditures contemplated for the next few years was not as yet known. There were many unanswered questions. In what fields would defense expansion concentrate? Canada, it was felt, could make a greater contribution to the cause of the United Nations by concentrating on the production of indigenous strategic materials and selected types of military equipment than by endeavoring, like the United States, to expand on all fronts simultaneously. Canada's small population and limited production facilities would have made the second course largely uneconomic. Other uncertainties existed. What would be the allocation of essential materials? What type of civilian activity would be either reduced or prohibited? What would be the taxation, credit, and monetary policies of the government in its effort to cope with the economic adjustments the country would have to make in order to devote an increasing proportion of its resources to defense efforts? How far would direct controls go?

It was in this economic and political climate that business firms were asked for their capital expenditure intentions for 1951. They reported plans for large increases over 1950. This rise reflected in

part further increases in prices of capital goods, which had been going up notably in the second half of 1950, in part an increase in the volume of planned capital expenditures. Accompanying this growing demand for capital goods, basic and building material industries anticipated an expansion in output.

The feasibility of realizing investment intentions for 1951 was appraised in these terms: "In aggregate, supply of both materials and labour should be somewhat greater in 1951 than in the year previous. However, in addition to the increased demands being made on these supplies by the investment programme, additional demands will be made by a defence programme expected to be more than twice that of last year. Requirements for defence equipment, which are not included in the data on investment intentions, may be three to four times those of 1950 and in value terms will represent about one-third of the total of such purchases for civilian purposes in that year. However, defence equipment will be in part imported and that produced domestically may require less steel than will an equivalent value of machinery used for civilian purposes. Thus, defence demands on the available supply of materials may not be as great as the dollar figures might indicate. Nevertheless, the demands of the defence programme will serve to limit both the materials and labour available for other purposes. On balance, it would appear that the investment programme planned for 1950 will put a considerable strain on the available supply of labour and materials."[66]

The conclusion reached for 1951 was that in spite of expanded demands for materials and manpower from the defense sector it should be possible for the economy to repeat the record volume of investment of 1950, and that this volume would involve increased dollar expenditures on new investment because of rising prices of capital goods. The following point was stressed: "Significant changes from the stated intentions will take place in individual sectors of the programme. The statement of investment intentions was made at a time when the extent of the defence requirements were unknown and before government attitude towards controls had been announced. The degree to which individual projects will be realized will probably depend to a large extent on how important they are considered in relation to the national well-being. As more defence contracts are let requiring increased productive facilities and as

[66] Department of Trade and Commerce, *Private and Public Investment in Canada, Outlook 1951*, p. 8.

plans for improved facilities for other essential purposes are expanded, more of the available resources will be channelled to these projects and less will be available for other types of investment. Already the use of steel for many types of construction has been placed under permit. This will mean that many plans for construction projects in the trade, finance and commercial services group and in such manufacturing industries as beverages and printing and publishing will be cut back, enabling programmes in other sectors to be expanded."[67] This is, in fact, what has been happening, if the mid-1951 survey can be taken as an indication.

So far the appraisal has been related to the economic situation and the conditions which have governed business investment intentions and the possibility of their realization. There are two other related aspects. Capital expenditures by business, as defined in this paper, include outlay on new construction and the purchase of new machinery and equipment. They exclude the acquisition of existing property, the payment for which represents a transfer transaction to other persons or firms and therefore does not have the same economic impact as outlay on new capital goods. One question is: Have construction expenditures been anticipated more closely than machinery and equipment purchases? The other is: What has been the effect of price changes on investment intentions?

The seasonality of construction has previously been mentioned as one of the factors aiding the business community in making

TABLE 2

New Construction Intentions of Business and Realization, Canada, 1945-1951

Year	*Intentions*	*Preliminary Estimate of Realization*	*Percentage Difference between Realization and Intentions*
	(millions of dollars)		
1945	114	117	−2.6
1946	290	220	+31.8
1947	365	404	−9.7
1948	620	639	−3.0
1949	695	750	−7.3
1950	892	909	−1.9
1951	1,059	1,106[a]	−4.2

[a] Midyear survey.
Source: Canadian government data.
For coverage see table 1, footnote a.

[67] *ibid.*

reasonably firm estimates of construction intentions a year ahead. Greater difficulties are encountered in making estimates of machinery and equipment purchases. One of the reasons for this is that Canadian firms rely heavily on imports of machinery and equipment from abroad, particularly from the United States. Thus the task of Canadian businessmen includes sizing up the market and price trends for machinery and equipment both at home and abroad, with judgment of the foreign situation likely to be subject to greater error.

The evidence assembled in tables 2 and 3 suggests that construction expenditure intentions have on the whole been a little closer to subsequent realization than plans for the purchase of machinery and equipment. In the seven annual surveys made, construction intentions show a smaller margin of difference between anticipation and execution in four years, little or no difference in one year, and a greater margin in the remaining two years (see chart 2).[68]

TABLE 3

Machinery and Equipment Purchase Intentions of Business and Realization, Canada, 1945-1951

Year	*Intentions* (*millions of dollars*)	*Preliminary Estimate of Realization*	*Percentage Difference between Realization and Intentions*
1945	210	122	+72.1
1946	388	332	+16.9
1947	669	606	+10.4
1948	1,111	1,147	−3.1
1949	1,208	1,210	−0.2
1950	1,134	1,303	−13.0
1951	1,576	1,749[a]	−9.9

[a] Midyear survey.
Source: Canadian government data.
For coverage see table 1, footnote a.

When businessmen are asked what amounts they will spend in the forthcoming year on plant and equipment, the presumption is that the estimates are expressed in the prices of the year to which

[68] This experience differs from that reported for the United States. "The anticipations as to expenditure for plant are definitely less accurate than for equipment in spite of the fact that construction requires relatively firm commitments for a considerable period in advance of expenditure." Irwin Friend and Jean Bronfenbrenner, "Business Investment Programs and Their Realization," *Survey of Current Business* (U.S. Department of Commerce), December 1950, p. 16.

the intentions apply. This means that a businessman has to decide not only what projects he will be embarking upon in the forthcoming year, what portion of the program is likely to be accomplished and what carryovers from the preceding year will be completed,

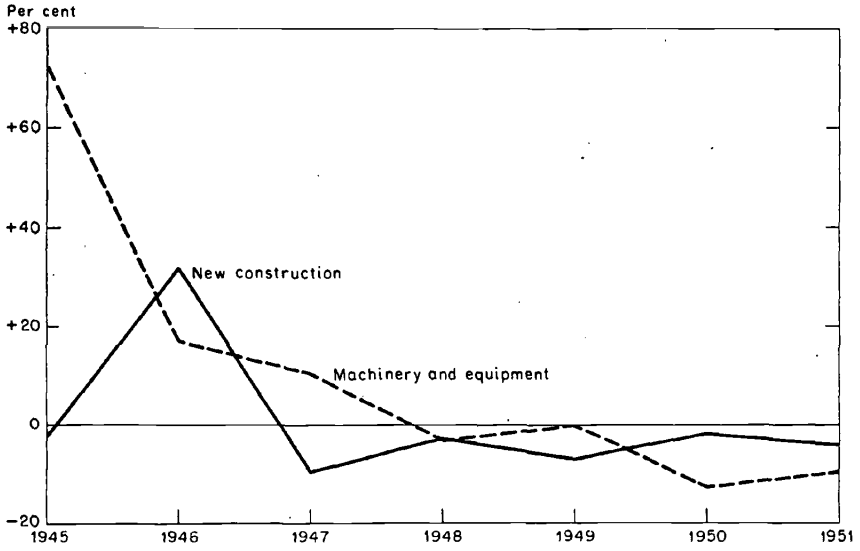

Chart 2. Percentage Difference between Realization and Intentions for New Business Construction and for Business Machinery and Equipment, Canada, 1945-1951

what equipment will be purchased, and what these undertakings might cost in current prices, but also what might happen to prices of capital goods. Thus his investment intentions involve both a tentative decision as to the volume of work he intends to proceed with and his "best" estimate of price trends.

Pricing some types of capital undertakings is not very difficult. When there is a firm contract price for the construction of a plant, the problem is to estimate the work that is likely to be completed.[69] When equipment is ordered without an escalator clause, delivery and payment estimates are needed, and few problems of pricing arise. But when cost-plus construction contracts are frequent and escalator clauses become common for long-term orders of machinery and equipment, when costs of capital goods are rising rapidly and allowances have to be made for contingencies, or when there is

[69] For some of the technical problems faced see footnote 97.

little basis for estimating the final cost for nonstandard structures or machinery and equipment, the businessman's judgment on prices is important.

In examining business capital expenditures anticipated in the United States, the observation has been made, based mainly on quarterly surveys, that "businessmen fairly consistently overestimated their outlays during the few periods in which prices declined and generally underestimated their outlays in other periods. It is quite possible, therefore, that anticipated outlays to a considerable extent reflect a planned physical volume of investment valued at prevailing prices, and hence do not sufficiently take account of price factors."[70]

In Canada, prices of capital goods have risen almost continuously in the postwar period although at times leveling off and at other times recording substantial increases. Prices rose most in 1947—19.1 per cent—and least in 1945 and 1949—1.3 per cent and 4.4 per cent respectively (see table 1). While it is not possible to test the above observation about declining capital-cost prices against the Canadian experience, Canadian data do allow an examination of the point that businessmen usually express their investment intentions in current prices rather than in future prices.

One way of testing this explanation statistically is to assume that businessmen have expressed their capital expenditure plans in prices prevailing at the time they were formulating their programs (taken as the last quarter of the year), and then to inflate the intentions by the price increases that took place between the average of the last quarter and the average for the succeeding year. Preliminary estimates of realization have been deducted from business investment intentions thus adjusted, and the percentage differences between realization and intentions are summarized in table 4.

From 1945 to 1948 the margin between anticipation and execution increased, while during 1949 and 1950 it decreased if compared with unadjusted data (see chart 3). One possible explanation is that in the early years, when supply bottlenecks were the rule and escalator clauses and cost-plus contracts were frequent, businessmen made allowances for price increases and therefore substantially expressed their capital expenditure intentions in future rather than in current prices. In more recent years, particularly when the investment intentions for 1949 and 1950 were formulated, the business community as a whole appears to have assumed fairly stable

[70] Friend and Bronfenbrenner, *op.cit.*, p. 13.

TABLE 4

Percentage Differences between Business Investment Realization and Intentions Assumed in Current Prices, Canada, 1945-1951

Year	*Construction*	*Machinery and Equipment*	*Total New Investment*
1945	−0.9	+73.0	+41.0
1946	+39.5	+20.3	+28.1
1947	+2.2	+25.4	+16.1
1948	+3.8	+4.7	+4.4
1949	−6.0	+0.2	−2.2
1950	+5.5	−10.1	−3.7
1951[a]	+6.0	−4.1	−0.2

[a] On the assumption of an annual average increase of 12 per cent in prices of capital goods in 1951.

Source: Canadian government data.

For coverage see table 1, footnote a. Current prices are taken as the average price prevailing during the last three months preceding the year to which *intentions* apply.

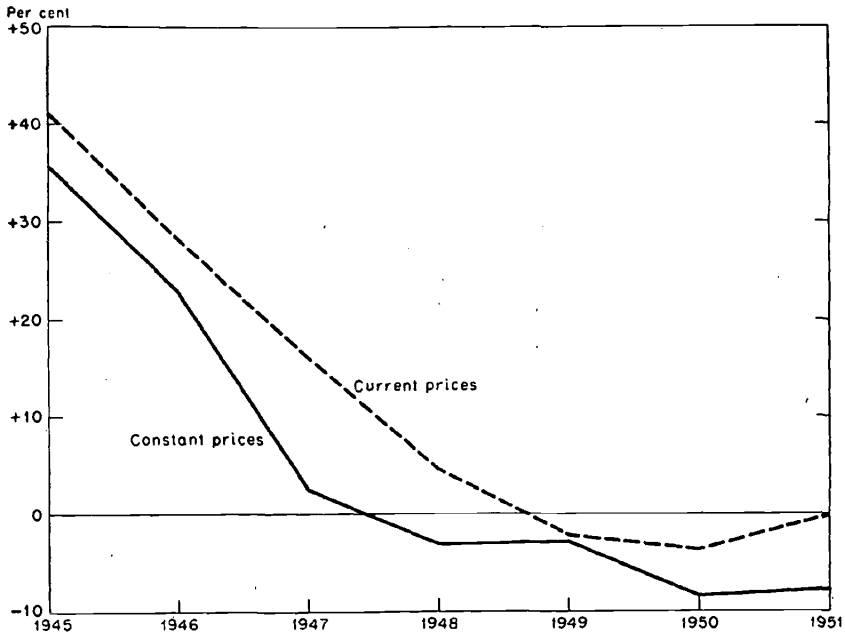

Chart 3. Percentage Differences between Business Investment Realization and Intentions, in Current and in Constant Prices, Canada, 1945-1951

prices and, encouraged by firm construction contracts and delivery quotations of machinery and equipment, appears to have made little or no allowance for price increases. As the data in table 1 show, however, prices of capital goods rose moderately during these two years. The 1951 business investment intentions appear to have been guided by price considerations not unlike those prevailing in the earlier postwar years, with supply bottlenecks, particularly for steel, and substantial price increases again in sight.

The tentative nature of the conclusions based on this test should be emphasized. Even though the majority of businessmen probably have made allowances for price increases in the early postwar years and again more recently, it cannot be said definitely whether these allowances have been adequate.[71] But the Canadian experience implies that in times of rapidly rising prices the business community as a whole may be making allowances for increases, while in periods of little price change it may not. Or putting it in statistical terms, investment intentions appear more likely to be expressed in future prices in times of rapid price movements and in current prices when there is relative price stability. In the latter case there appears to be little harm done, since price differences from year to year will be small enough not to affect significantly the general usefulness of the results of business investment-intentions surveys.

The variety of explanations offered above of why in some years capital expenditure plans of business have come closer to realization than in others suggests caution in making categorical statements about the continuing ability of businessmen to anticipate their capital outlay correctly regardless of circumstances. The Canadian experience so far suggests that under *foreseeable* conditions businessmen can be expected to estimate their future capital expenditures reasonably closely.

The reasons why business investment intentions come close to realization will vary from time to time. For example, in 1947, investment intentions appear to have come close to realization not so much because business was able to complete the volume of work that it anticipated, but because rising prices may have made up for deficiencies in volume. Similarly, the reasons why investment intentions may understate realization will vary over time. For example, in 1948 and 1949, investment intentions were moderately below actual capital expenditures apparently because insufficient allowances had

[71] It has been suggested that in 1947 they may have been inadequate.

been made for price increases of capital goods. In 1950 and 1951 a somewhat wider margin is explained to an important extent by the effect of the rearmament program, which turned out to be greater than anticipated.

2. Year-end and midyear business investment intentions

Since 1947, investment intentions of business have been reviewed at midyear, reflecting usually the situation in May of the year, and the results made public in the form of departmental releases in June.[72] To obtain speedy results the midyear investment review is based on a sample survey.[73]

The midyear review of capital expenditures is undertaken for two reasons: first, to verify investment intentions at a time when work is well under way and management is in a much better position to make firm estimates; secondly, to establish whether a change in the trend of investment intentions is taking place either in the aggregate or in the composition of the program, and if so to discover the reasons for this change.

Annual forecasts are useful to the policy-maker because they may give him a warning of things to come and enable him to take appropriate and timely action. As an annual statement the outlook appraisal can take account of changes anticipated later in the year by the respondent, but it does not allow for alterations in plans that take place during the year for reasons which the respondent could not or did not anticipate. In Canada, where, as distinct from the United States, no quarterly surveys of capital expenditure intentions are undertaken, the midyear investment survey is designed to detect in broad outline changes that may be taking place in investment intentions. This check-up on the previous year-end investment forecast is supplemented throughout the year by reviewing current quarterly information on investment realization.[74]

[72] See, for example, Department of Trade and Commerce, *Private and Public Investment in Canada, Mid-year Survey 1951*, Release No. 20/51 (June 22, 1951).

[73] The sample used in the midyear survey is a random sample chosen from all firms reporting in the year-end survey and stratified by industry according to the amounts of anticipated capital expenditures. The sampling ratio used is greater in the strata involving larger investment outlays. This sample gives a coverage of approximately 10 per cent in terms of number of establishments and 50 per cent in terms of total investment intentions.

[74] Quarterly data are provided for investment in construction, in machinery and equipment, and in the aggregate. Monthly data are provided for certain sectors. See Department of Trade and Commerce Release No. 49/50 (November 22, 1950), containing quarterly investment figures for 1949 and 1950, including

In Canada this technique has been considered preferable to the institution of quarterly investment-forecast surveys for a number of reasons. Construction, which is responsible for a large proportion of total capital expenditures, is subject to substantial seasonal fluctuations in Canada, where cold winters and wet springs restrict outdoor work, on occasion very substantially. Further, business firms trying to forecast quarterly investment expenditures frequently run into difficulties in estimating, with the accounting system to which they are accustomed, actual work put in place. Payments for construction work put in place or machinery and equipment delivered are frequently not made until toward the end of the year.[75]

The midyear investment survey enables business enterprises to make firmer estimates because, first, they are able to include an allowance for actual capital expenditures made during the early part of the year; secondly, most cancellations or additions of projects, particularly of a construction type, are well established by that time; and thirdly, the respondent is in a much better position to size up the state of the capital goods market. In the postwar years this market has been somewhat volatile, and significant changes have taken place within the course of a year. For example, in the first half of 1951, prices of capital goods rose rapidly, frequently necessitating an upward revision of investment intentions without involving any change in volume.[76] In addition a number of new projects were initiated, mainly in defense and defense-supporting industries.[77]

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an estimate of anticipated realization for the fourth quarter of 1950. For additional quarterly and monthly data see Central Mortgage and Housing Corporation, *Housing in Canada, Second Quarter 1951*, pp. 34 and 38.

[75] "The inaccuracies involved in the quarterly anticipations . . . are probably to a considerable extent due to the difficulties in programming the deliveries of, and consequently the outlays on, capital goods already on order. . . . There is one systematic quarterly discrepancy between actual and anticipated expenditures which is worthy of note. Actual expenditures as reported for the fourth quarter were regularly higher than anticipated outlays, apparently reflecting the concentration of certain charges to capital accounts in the end-of-year statements." Friend and Bronfenbrenner, *op.cit.*, p. 13.

[76] "The new figure of total capital expenditure for 1951 is 20 per cent above that for last year. However, at least half of this increase may be attributed to higher prices." Department of Trade and Commerce, *Private and Public Investment in Canada, Mid-year Survey 1951*, p. 1.

[77] "Many of the changes in the revised estimate for 1951 are due to the initiation of entirely new projects on which information was not available when the first estimate was made. . . . The upward revision in the overall program has taken place concurrent with the implementation of government measures to discourage the use of resources for non-essential investment. Reduction in out-

The results of the midyear investment surveys for the years 1947 to 1951 are summarized in table 5, together with a comparison of investment intentions as canvassed at the end of the preceding

TABLE 5

Midyear and Year-End Business Investment Intentions and Realization, Canada, 1947-1951

Year	*Midyear Investment Intentions (millions of dollars)*	*Percentage Difference between:*	
		Year-End and Midyear Investment Intentions	*Preliminary Estimate of Realization and Midyear Investment Intentions*
1947	1,004	−2.9	−0.6
1948	1,887	+9.0	+5.7
1949	1,976	+3.8	+0.8
1950	2,121	+4.7	−4.1
1951	2,855	+8.3	[a]

[a] Not available.

Source: Canadian government data.

For coverage see table 1, footnote a.

year and preliminary estimates of realization. In all years except one (1948) the midyear surveys yielded improved results over the corresponding previous year-end surveys (see also table 1).

In two years, 1947 and 1949, the differences between the preliminary estimates of realization and the midyear surveys were less than 1 per cent (see chart 4). While capital expansion in Canada continued its upward trend in 1949,[78] in spite of the presence of recessionary influences in the United States,[79] the recovery that set in in the United States in the summer of the year[80] provided further

lays for relatively less essential purposes have been more than offset by the expanding program of industries which are essentially defence-supporting in nature. On the whole, the changing pattern of investment plans indicates a redirection of productive resources toward a broadening of Canada's industrial base and a strengthening of the nation's defence potential." *ibid.*, pp. 2 and 3.

[78] With declines in some sectors, e.g. manufacturing, being offset by increases in other sectors, e.g. primary industries and utilities (see table 6).

[79] In spite of recessionary movements in the United States in 1949, commodity exports from Canada to the United States remained about the same as in 1948, around $1.5 billion, or about one-half of total Canadian sales abroad. This was of particular importance for the continuation of a feeling of business confidence in Canada, since at the same time exports of nondollar countries declined somewhat.

[80] The Federal Reserve Board Index (seasonally adjusted) declined from 195 in October 1948 to 161 in July 1949, a drop of 17 per cent, turned upward in the following months, and reached 199 in June 1950, when the Korean

incentives for Canadian industry to expand, in part to cater to the expected increase in demand for Canadian products in the United States,[81] in part because of a feeling of buoyancy associated with

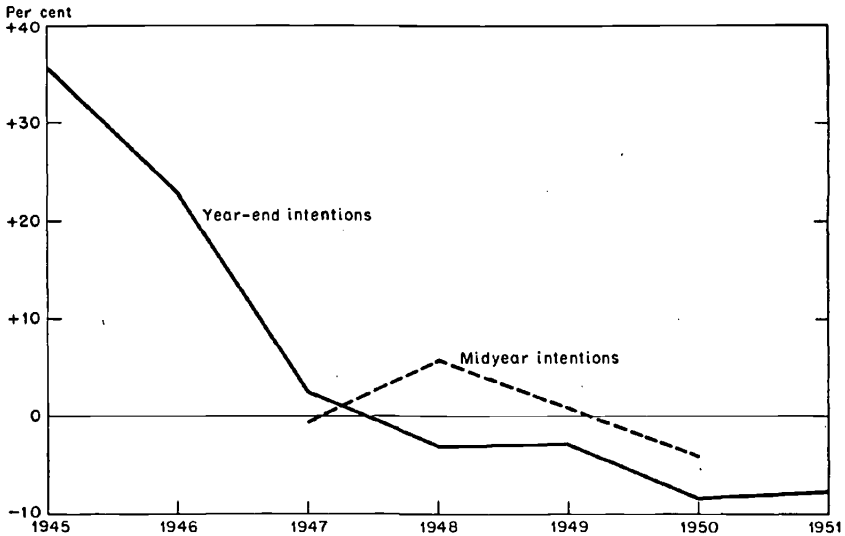

Chart 4. Percentage Difference between Business Investment Realization and Midyear and Year-End Intentions, Canada, 1945-1951

American expansion. In 1950, even though the midyear survey had been undertaken before the Korean incident, increased capital expenditures by business were indicated for the year, mainly the result of further expansion in mining, logging, and manufacturing.

In 1951 the midyear survey showed substantial increases in the capital expenditure plans of primary and manufacturing industries. This reflected to some extent the addition of new projects of a defense-supporting nature that had become necessary as the full extent and the rate of expansion of the rearmament program became known.

Only in 1948 did the midyear investment survey yield results of

incident occurred. This was a recovery of 24 per cent and exceeded the postwar peak of October 1948. See also "Production and Prices in the Latter Part of 1949," *Federal Reserve Bulletin*, January 1950, pp. 1-13.

[81] Canadian exports to the United States amounted to $905 million in the first half of 1950, or 31 per cent in value terms above the first half of 1949. The increase in volume was almost as large, since export prices changed little in that period.

a somewhat different order. The survey of investment intentions at the end of 1947 indicated capital expenditure plans for the following year of $1,731 million, or 3.1 per cent *below* the preliminary estimate of realization of $1,786 million. The midyear survey yielded an estimated $1,887 million, or 5.7 per cent *above* the amount realized. It will be recalled that from 1945 to 1947 investment-intentions surveys had consistently overstated capital expenditures which industry had found it possible to make, mainly because supply bottlenecks made full realization of plans difficult. In response to persistent demands, production and supply of capital goods rose rapidly in the immediate postwar years, making possible an increasing realization of investment plans. By mid-1948 the supply situation had improved sufficiently to make a number of firms, particularly those in some primary industries, utilities, and commercial, finance, and service enterprises, believe that an expansion beyond what they had planned six months earlier was feasible.[82] As it turned out, the supply situation did improve during 1948,[83] even though it fell short of what industry had expected. Nevertheless, business investment plans at mid-1948 pointed to the fact that a somewhat larger program could be realized than had been anticipated six months earlier.[84]

The reasons for discrepancies between investment intentions and realization vary significantly between companies, and these are reviewed later (see section C 6).

To conclude, in considering percentage differences between the

[82] "The majority of business enterprises participating in the mid-year survey reported increases in returns: (*a*) that construction costs and purchase prices of machinery and equipment were higher than anticipated; (*b*) that building materials, machinery, and in some instances labour, were in better supply, making it possible to proceed with projects which had hitherto been in a doubtful category; and (*c*) that plans of projects and estimates of cost had become firmer, making it possible to make a more definite statement as to the likely volume of capital expenditures." Department of Reconstruction and Supply, Release No. 112 (June 30, 1948).

[83] Between 1947 and 1948 the index of the volume of domestic disappearance of building materials in Canada rose by 14 per cent, and the number of persons employed in the construction industry rose by 15 per cent. Central Mortgage and Housing Corporation, *Housing in Canada, Second Quarter 1951*, pp. 64 and 83.

[84] The working of the Canadian government's capital goods import policies probably contributed to an improvement in the balance between supply of and demand for capital goods. New regulations made it necessary for industry to obtain import permits for a variety of capital goods. Permits were granted where the necessity for the imported item could be established and no satisfactory domestic source existed. This procedure slowed down, for a time, the rate at which business was able to acquire equipment.

results of midyear investment surveys, year-end investment-intentions surveys, and actual capital expenditure surveys, it must be remembered that the first are sample surveys while the second and third are made on as full an industrial coverage as is considered practical and economical. Therefore, small variations between the surveys may be due to a sampling error associated with the midyear surveys. It is believed that this error may be as much as 5 per cent in either direction.

3. Investment intentions of industry

The effect of changes in the volume of investment on the level of economic activity has been emphasized in section B. In this connection one of the crucial tests of the usefulness of surveys of capital expenditure intentions as tools for forward-looking economic analysis is their reliability in indicating a change in trend. In other words, is there any evidence as yet in Canada that investment intentions of business indicate possible turning points in the economic situation, either the turning down after a high point has been reached or the recovery after a decline?

Since capital expenditures in Canada have risen continuously since the end of World War II, the surveys of business investment intentions have so far not been subjected to the full test of whether they will continue to yield as close results as they have in the past when the present phase of continuing expansion is followed by a period of contraction. However, there are some preliminary indications on an *industry* basis that business firms can anticipate a change in trend not only in timing but also in approximate extent.

Capital expenditure intentions and preliminary estimates of realization are summarized for industry groups in table 6. In Canada as in the United States the standard industrial classification is employed in tabulating the results of capital expenditure surveys, although the broad groups published regularly in Canada differ somewhat from those released in the United States by the Securities Exchange Commission and the Department of Commerce. In the following table, industries have been rearranged to conform as closely as possible to the grouping used in the United States.

The Canadian industry that called a turning point in the trend of capital expenditures from 1948 to 1949 was manufacturing. Preliminary estimates of realization in 1948 put capital expenditures at $564 million and investment intentions for 1949 at $522 million, a decline of 7 per cent. Preliminary estimates of realization in 1949

TABLE 6

Business Investment Intentions and Realization, by Industry, Canada, 1945-1951

Year and Industry[a]		*Year-End Intentions* (*millions of dollars*)	*Preliminary Estimate of Realization*	*Percentage Difference between Realization and Intentions*
1945	Manufacturing	244	167	+46.1
	Mining	19	16	+18.8
	Railroads	. . .	. . .	. . .
	Other transportation	. . .	. . .	. . .
	Electric and gas utilities	36	31	+16.1
	Commercial and miscellaneous[b]	25	25	0.0
	Subtotal[c]	324	239	+35.6
	Other primary industries[d]	. . .	. . .	. . .
	Total	324	239	+35.6
1946	Manufacturing	360	300	+20.0
	Mining	25	14	+78.6
	Railroads	71	48	+47.9
	Other transportation	76	66	+15.2
	Electric and gas utilities	83	57	+45.6
	Commercial and miscellaneous[b]	54	46	+17.4
	Subtotal[c]	669	531	+26.0
	Other primary industries[d]	9	21	−57.1
	Total	678	552	+22.8
1947	Manufacturing	443	467	−5.1
	Mining	47	50	−6.0
	Railroads	147	76	+93.4
	Other transportation	79	80	−1.2
	Electric and gas utilities	124	127	−2.4
	Commercial and miscellaneous[b]	177	187	−5.3
	Subtotal[c]	1,017	987	+3.0
	Other primary industries[d]	17	23	−26.1
	Total	1,034	1,010	+2.4
1948	Manufacturing	554	564	−1.8
	Mining	77	79	−2.5
	Railroads	112	135	−17.0
	Other transportation	70	70	0.0
	Electric and gas utilities	182	200	−9.0
	Commercial and miscellaneous[b]	401	406	−1.2
	Subtotal[c]	1,396	1,454	−4.0
	Other primary industries[d]	335	332	+0.9
	Total	1,731	1,786	−3.1

TABLE 6 (continued)

Year	and Industry[a]	Year-End Intentions (millions of dollars)	Preliminary Estimate of Realization (millions of dollars)	Percentage Difference between Realization and Intentions
1949	Manufacturing	522	515	+1.4
	Mining	121	124	−2.4
	Railroads	164	135	+21.5
	Other transportation	69	69	0.0
	Electric and gas utilities	254	291	−12.7
	Commercial and miscellaneous[b]	409	429	−4.7
	Subtotal[c]	1,539	1,563	−1.5
	Other primary industries[d]	364	397	−8.3
	Total	1,903	1,960	−2.9
1950	Manufacturing	496	519	−4.4
	Mining	142	134	+6.0
	Railroads	150	121	+24.0
	Other transportation	55	67	−17.9
	Electric and gas utilities	305	345	−11.6
	Commercial and miscellaneous[b]	513	561	−8.6
	Subtotal[c]	1,661	1,747	−4.9
	Other primary industries[d]	365	465	−21.5
	Total	2,026	2,212	−8.4
1951	Manufacturing	716	847[e]	−15.5
	Mining	164	176[e]	−6.8
	Railroads	205	172[e]	+19.2
	Other transportation	85	95[e]	−10.5
	Electric and gas utilities	388	404[e]	−4.0
	Commercial and miscellaneous[b]	623	653[e]	−4.6
	Subtotal[c]	2,181	2,347[e]	−7.1
	Other primary industries[d]	454	508[e]	−10.6
	Total	2,635	2,855[e]	−7.7

[a] Grouping of industries rearranged to conform as closely as possible to industry classification used in surveys of anticipated capital expenditures on plant and equipment undertaken in the United States by the Securities and Exchange Commission and the Department of Commerce.

[b] Includes trade, service, communications, construction, and finance.

[c] Roughly comparable to totals shown in SEC and Department of Commerce surveys.

[d] Covers agriculture, fishing, and woods operations.

[e] Midyear survey.

Source: Canadian government data.

For coverage see table 1, footnote a.

put capital expenditures made at $515 million, or close to what had been anticipated. Among the reasons for this decline were: the ending of reconversion of plant facilities following World War II; the fact that many projects for industrial modernization, postponed during the thirties and the war years, had been completed between 1946 and 1948; and the outlook for the lower sales abroad for manufactured products, particularly in nondollar areas where Canada had well established markets. This was mainly because of import restrictions imposed by a large number of countries as a result of foreign exchange difficulties.

By turning down in 1949, manufacturing investment in Canada followed a course similar to that of capital expenditures by the manufacturing sector in the United States. But the basic difference between the trends of capital expenditures in the two countries in these two years was that in Canada a decline in investment by manufacturing firms was largely offset by increased capital expenditures associated with the continuing resources-development and utility-expansion program, while in the United States the rally of some industries was insufficient to make up for a decline in other industries, particularly manufacturing. One of the reasons for this is that manufacturing enterprises in the United States spend proportionately larger sums on plant and equipment than are spent in Canada.[85]

Having called the turn in 1949, end-of-the-year (1949) investment intentions suggested a continuation of this trend in 1950. However, by mid-1950, with greater buoyancy prevailing, manufacturing enterprises revised their earlier intentions and indicated that capital expenditures for the year as a whole would be above those of 1949. The speed-up of industrialization as increased rearmament orders began to make their appearance in the second half of 1950 was another reason why plant and equipment expenditures by Canadian manufacturing in 1950 exceeded those made in 1949.

While it cannot be said with any assurance from the limited Canadian experience that business firms can forecast their investment intentions sufficiently accurately to call a turn in economic events, it is reassuring to know that in the case of Canada's most important industry[86] business firms have been able to indicate a

[85] In 1949, for example, investment by manufacturing contributed 40 per cent to total business expenditures on plant and equipment in the United States, as compared with 33 per cent in Canada.

[86] Manufacturing is Canada's most important single field of employment and income. It provided jobs for 26 per cent of all persons in civilian employment

turning point in the trend of investment at a time when the economic outlook was in considerable doubt, and when conflicting trends were becoming apparent both at home and abroad.

Another point of interest to the policy-maker is the assessment of the effectiveness of broad economic policies designed either to encourage or to discourage investment in a particular sector. For example, late in 1950 and continuing into early 1951 a number of restrictive measures were adopted in Canada to induce industry to postpone capital projects of low priority. The effectiveness of such measures—to which reference has been made earlier—was indicated by the changing composition of investment plans revealed by the mid-1951 survey. Declines of capital outlay varying from 3 to over 20 per cent were indicated for wholesale trade, commercial services, finance, insurance and real estate, and the construction industry. Since prices of capital goods in 1951 exceeded by over 10 per cent those of 1950, an even larger decline in the volume of investment undertaken by these industries was indicated. At the same time capital expenditures in other industries and on defense construction rose, suggesting that the government's economic policies aimed at a redirection of the investment program were meeting with some measure of success.

Insofar as surveys of investment intentions can be considered indicators of the ability to anticipate future capital expenditures, the data in table 6 suggest that manufacturing enterprises are among the best informed in Canada. In every year since 1945, except 1947, manufacturing firms came closer to estimating their prospective outlay in plant, machinery, and equipment than did the business community as a whole (see chart 5). Variations of about 1 per cent for 1949, 2 per cent for 1948, and about 4 per cent for 1950 are indications of a particularly good record. Midyear investment intentions for 1951 suggest that manufacturing industries substantially understated their capital plans for the year, probably because they may have taken inadequate account of expansion necessitated by the growing defense program. However, since full results for 1951 are not available as this paper is being prepared, it is too early to say whether the forecasting record of manufacturing enterprises will continue to be as good as that for the business community as a whole.

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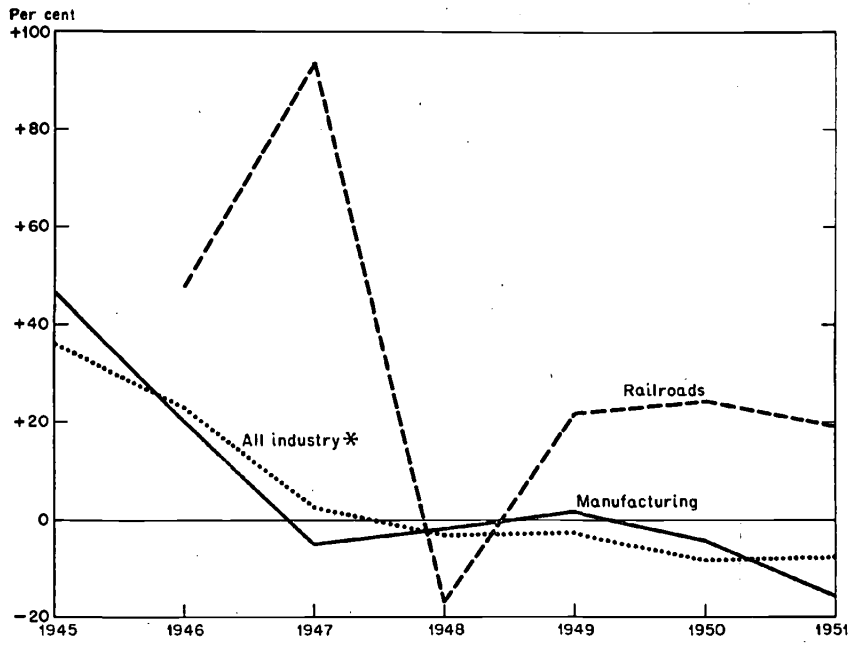
in June 1950, and it contributed 31 per cent to total national income for the year as a whole. In contrast, the corresponding proportions for agriculture are 21 and 11 per cent.

The railroads are among the sectors showing fairly wide differences between investment intentions and realization. One reason for this has been the railroads' practice of describing as their investment intentions the capital expenditure target some of the companies have set. In practice, targets have been found difficult to realize fully. This was the case in the early postwar years because of supply bottlenecks. In more recent years it appeared easier to set a mone-



* Covers manufacturing, mining, railroads, other transportation, electric and gas utilities, commercial, and miscellaneous.

Chart 5. Percentage Difference between Business Investment Realization and Intentions, by Industry, Canada, 1945-1951

tary target than to overcome the engineering and organizational problems involved in realizing the objective. A narrowing of the difference between investment intentions and realization could presumably be achieved if instead of using only data on the maximum amounts that the railroads may be spending on capital equipment, investment intentions were to take account also of some of the technical and other difficulties faced by the industry.

In practice, understatement of proposed capital outlays by some industries has been offset by overstatement by other industries. Thus

the variations between investment intentions and realization are larger for individual industries than for business expenditures on plant, machinery, and equipment taken as a whole. However, it should not be assumed that the degree of accuracy attained in surveys of business investment intentions is purely fortuitous in this respect. In periods when the demand for capital goods exceeds the supply, as in the early postwar years, the possible realization of investment intentions must be premised on a given supply situation. If the supply situation eases because of reduction in capital spending by some sectors, this will enable other sectors to increase their outlay. In 1949, when the supply and demand situation was reasonably in balance, variations among industries were not as pronounced as in other years. But even in years in which the divergencies among industries are more substantial, the resulting error may not preclude the use of industrial information. As indicated earlier, broad trends rather than pinpoint precision are required in formulating policies to deal with a particular problem affecting one industry or group of industries.

4. Business investment intentions by region

Since industries report their capital expenditure plans with varying degrees of accuracy, this itself affects regional data on projected investment outlay; for industries are widely dispersed in Canada, and the industrial bases of the regions vary greatly.

Manufacturing is most heavily concentrated in Ontario and Quebec, while primary industries are relatively more important in the other regions. But in the last decade these other areas have been making great strides toward industrialization and diversification, so that some of the differences that existed before the war have been reduced.

Another factor accentuating the differences that arise from concentration of manufacturing in particular regions is the great variation in the types of manufacturing. The very large steel, textile, and chemical companies are concentrated in Ontario and Quebec. In the Maritimes small-scale fish processing and milling of lumber are of particular importance. Manufacturing in the Prairie Provinces has consisted in the past largely of enterprises engaged in processing agricultural products—in flour-milling, meat-packing, etc. In recent years oil-refining has assumed considerable importance. In British Columbia the processing of forest products both in large-scale saw-

mills and in pulp and paper plants is, along with fish-processing, the major manufacturing activity.

Some indications of the differences that may exist regionally between investment intentions and realization may be obtained by using reports covering the following industries, which have been surveyed continuously since 1945: manufacturing, mining, primary woods operations, and central electric stations and gas works.[87] This group of industries is responsible for close to one-half of total business investment and over one-quarter of total private and public investment made in Canada. As table 7 indicates, manufacturing investment is a major factor in Quebec and Ontario, with British Columbia third. In the Maritimes and the Prairie Provinces, capital outlay by manufacturing firms is less important (see chart 6).

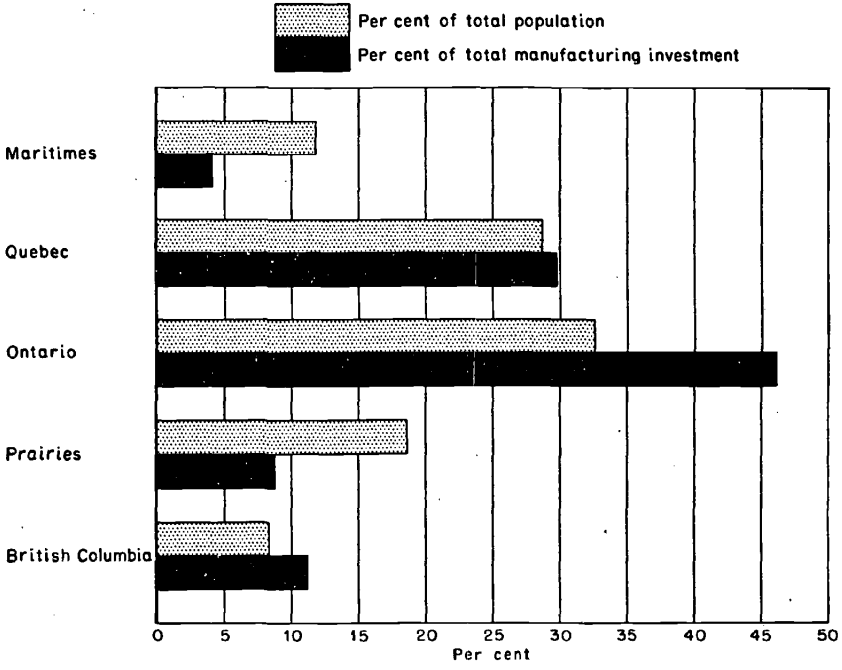


Chart 6. Manufacturing Investment and Population, by Region, Canada, 1950

Investment intentions and realization for the selected industry groups mentioned earlier are summarized in table 8. In the past five years capital expenditure plans appear to have come closest to realization in Ontario, Quebec, and British Columbia. This may be

[87] Except woods operations, where surveys commenced in 1946.

TABLE 7

Business and Other Investment, and Population, by Region, Canada, 1950

Region	Population[a] (thousands)	Total Private and Public Investment[b] (millions of dollars)	Percentage of Total Private and Public Investment					
			Manufacturing	Mining, Woods Operations, and Central Electric Stations and Gas Works	Subtotal	Other Business	Total Business	Residential, Institutions, and Government Departments
Maritimes	1,631	276	7.6	10.2	17.8	28.6	46.4	53.6
Quebec	3,976	845	18.3	10.3	28.6	26.9	55.5	44.5
Ontario	4,512	1,430	16.7	16.0	32.7	30.7	63.4	36.6
Prairies[c]	2,580	863	5.3	13.6	18.9	46.1	65.0	35.0
British Columbia[d]	1,146	409	14.2	12.0	26.2	29.5	55.7	44.3
Total	13,845	3,823	13.6	13.3	26.9	33.1	60.0	40.0

[a] As of June 1950.
[b] First estimate on full-coverage basis.
[c] Includes the Northwest Territories.
[d] Includes the Yukon.
Source: Canadian government data.

explained to some extent by the concentration of large companies in these provinces; such firms, as has been mentioned earlier, have a

TABLE 8

Business Investment Intentions and Realization, by Region, Canada, 1945-1951

Year and Region		*Year-End Intentions* (*millions of dollars*)	*Preliminary Estimate of Realization*	*Percentage Difference between Realization and Intentions*
1945	Maritimes	13.3	9.8	+35.7
	Quebec	87.5	61.7	+41.8
	Ontario	143.5	100.6	+42.6
	Prairies	28.5	22.0	+29.5
	British Columbia	27.0	20.0	+35.0
	Total[a]	299.8	214.1	+40.0
1946	Maritimes	23.4	15.8	+48.1
	Quebec	137.9	120.5	+14.4
	Ontario	232.0	185.6	+25.0
	Prairies	38.2	23.7	+61.2
	British Columbia	48.0	45.8	+4.8
	Total[a]	479.5	391.4	+22.5
1947	Maritimes	28.1	34.1	−17.6
	Quebec	175.6	204.5	−14.1
	Ontario	310.7	314.0	−1.1
	Prairies	43.7	39.9	+9.5
	British Columbia	72.7	75.1	−3.2
	Total[a]	630.8	667.6	−5.5
1948	Maritimes	34.8	46.5	−25.2
	Quebec	239.0	221.6	+7.9
	Ontario	444.6	421.0	+5.6
	Prairies	49.6	80.9	−38.7
	British Columbia	70.2	102.8	−31.7
	Total[a]	838.2	872.8	−4.0
1949	Maritimes	36.9	40.4	−8.7
	Quebec	232.6	229.7	+1.3
	Ontario	432.1	441.3	−2.1
	Prairies	104.8	126.4	−17.1
	British Columbia	110.5	111.2	−0.6
	Total	916.9	949.0	−3.4
1950	Maritimes	43.3	47.5	−8.8
	Quebec	224.0	240.4	−6.8
	Ontario	470.3	466.1	+0.9
	Prairies	122.2	163.9	−25.4
	British Columbia	95.5	103.5	−7.7
	Total	955.3	1,021.4	−6.5

TABLE 8 (continued)

Year and Region		Year-End Intentions (millions of dollars)	Preliminary Estimate of Realization (millions of dollars)	Percentage Difference between Realization and Intentions
1951	Maritimes	72.6	82.4[b]	−11.9
	Quebec	292.0	332.8[b]	−12.3
	Ontario	656.5	745.1[b]	−11.9
	Prairies	181.8	200.3[b]	−9.2
	British Columbia	99.1	114.5[b]	−13.4
	Total	1,302.0	1,475.1[b]	−11.7

[a] These totals for the years 1945 to 1948 differ slightly from the national totals shown in the White Papers on the investment outlook because the latter were arrived at by blowing up the Canada total for noncoverage rather than by deriving the Canada total by summation of regional totals. Since 1949 national totals have been the sum of regional totals.

[b] Midyear intentions.

Source: Canadian government data.

These figures cover manufacturing, mining, woods operations, and central electric stations and gas works for all years except 1945, when woods operations were not surveyed.

better record in estimating future capital outlay. However, where a region depends substantially on a few types of industry, a change through the year in the outlook for any one of these industries may result in large differences between intentions and realization for that region. This is illustrated by the unusually large variation shown for British Columbia in 1948, when the demand for lumber rose substantially through the year because of a greatly increased domestic housing program.[88]

The Maritime Provinces appear to have been consistently on the conservative side, underestimating their capital outlay in every year from 1947 to 1951. In addition to the fact that smaller companies, which are numerous in this region, are usually less accurate in their estimates, a psychological factor probably also exists. In comparison with the rest of Canada the Maritime economy has been growing more slowly. This tends to give the businessman a more conservative outlook than in more rapidly developing regions.

The largest differences between intentions and realization appear for the Prairie Provinces and are principally on the pessimistic side. This cannot be ascribed entirely to errors in judgment made by

[88] Starts of all types in Canada rose from 74,300 in 1947 to 90,200 in 1948, or by 21 per cent. Central Mortgage and Housing Corporation, *Housing in Canada, Second Quarter 1951*, p. 34.

businessmen in formulating and reporting their intentions. In this area industrial development, particularly in the fields of oil and natural gas, has proceeded at a rapid rate in recent years. This has involved the establishment of many new companies, some of which, in each year, came into existence after the survey of intentions was made. While allowance for new entrants was made in the published estimates, these do not appear to have taken full account of the rapid development in this region. However, a fuller coverage would be reflected in the preliminary estimates of realization, thus adding to the differences that show up. In this environment the businessman, too, faced difficulties in planning his capital expansion. While large increases in capital expenditures were projected, it was frequently found that plans made toward the end of one year proved to be inadequate before the succeeding year was well on its way (see chart 7).

Within regions greater variations between intentions and realization are indicated for large cities than for smaller communities. In 1950, for example, investment intentions by manufacturing enterprises differed from the actual amounts spent by 9 per cent in thirteen metropolitan cities and by only 2 per cent in the rest of the country (see table 9). One possible explanation for this is the greater volatility of decision-making in large urban centers and the greater possibility of projects being canceled and of new ventures being initiated.

Among the cities the two largest, Montreal and Toronto, came closer to foreseeing the capital outlay to be made by manufacturing firms than all other cities except Windsor, whose forecasting record was about as good as that of Montreal (see chart 8). The fact that differences between intentions and realization are much larger in the smaller metropolitan centers than in the larger ones does not necessarily mean that all businessmen in the big cities are better forecasters. It does mean, however, that there is less likelihood in the smaller places that overstatements will be canceled out by understatements. Also, as pointed out in section C 7, the estimating technique deteriorates in effectiveness as it is applied to either industries or areas involving only a small number of firms.

5. Individual company forecasts: size and other characteristics

This section is concerned with five questions: Are large companies in a better position to estimate in advance their capital expenditures than medium-sized or small companies? Are estimates of projected

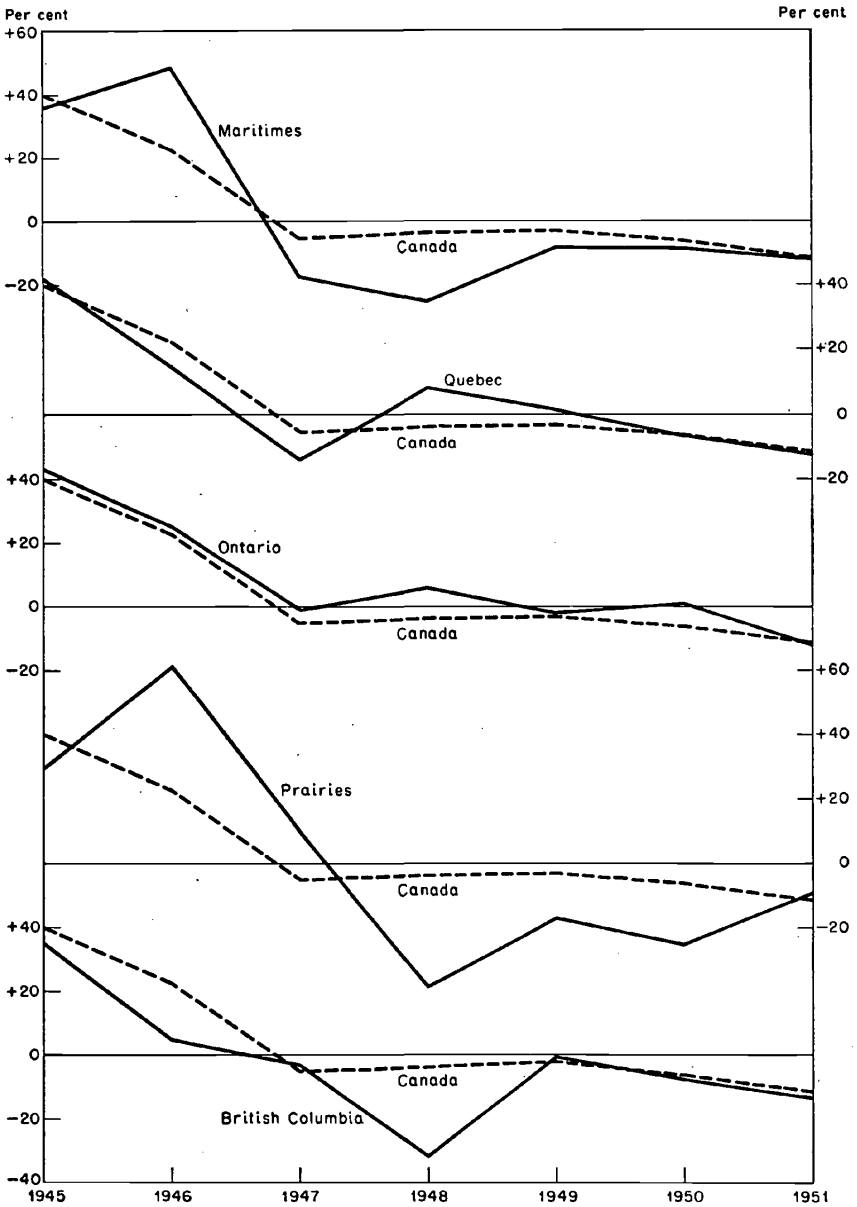


Chart 7. Percentage Difference between Business Investment Realization and Intentions, by Region, Canada, 1945-1951

TABLE 9

Manufacturing Investment Intentions and Realization, and Population, Metropolitan Cities, Canada, 1950

Metropolitan City	*Population (thousands)*	*Year-End Intentions*	*Preliminary Estimate of Realization*	*Percentage Difference between Realization and Intentions*
		(millions of dollars)		
Montreal	1,505	73.1	66.5	+9.9
Toronto	1,064	57.1	53.9	+5.9
Vancouver	558	10.9	13.8	−21.0
Winnipeg	338	6.5	12.0	−45.8
Quebec	270	2.9	6.3	−54.0
Ottawa	258	4.5	6.1	−26.2
Hamilton	217	14.8	16.7	−11.4
Windsor	159	13.6	12.4	+9.7
Halifax	134	1.7	2.6	−34.6
London	118	7.7	19.0	−59.5
Victoria	109	1.5	1.3	+15.4
Saint John	72	0.7	1.1	−36.4
St. John's	57	0.4	2.1	−81.0
Subtotal	4,859	195.4	213.8	−8.6
Rest of Canada	8,986	300.2	305.6	−1.8
Total	13,845	495.6	519.4	−4.6

Source: Canadian government data.

investment involving substantial expenditures more accurate than estimates involving smaller outlays?[89] How successful can one expect individual firms to be in forecasting the direction of future capital expenditures, even though they may over- or underestimate significantly the absolute amounts involved? Can companies which have a reasonably good record in estimating their future capital outlay in one year be relied upon to be good forecasters the next year? What are some of the differences in the accuracy of anticipated investment plans as reported by company officers at various levels in the business hierarchy?

To throw light on these questions a sample of 814 virtually identical companies reporting investment intentions and realization in 1949 and 1950 was chosen. The size of the sample for each of the five size groups selected is shown in table 10.

Large companies, that is, those with a gross value of business of $1 million or more annually, appear to be able to anticipate their capital outlay more closely than medium-sized or small companies.

[89] It should be remembered that not every large company makes large capital expenditures each year.

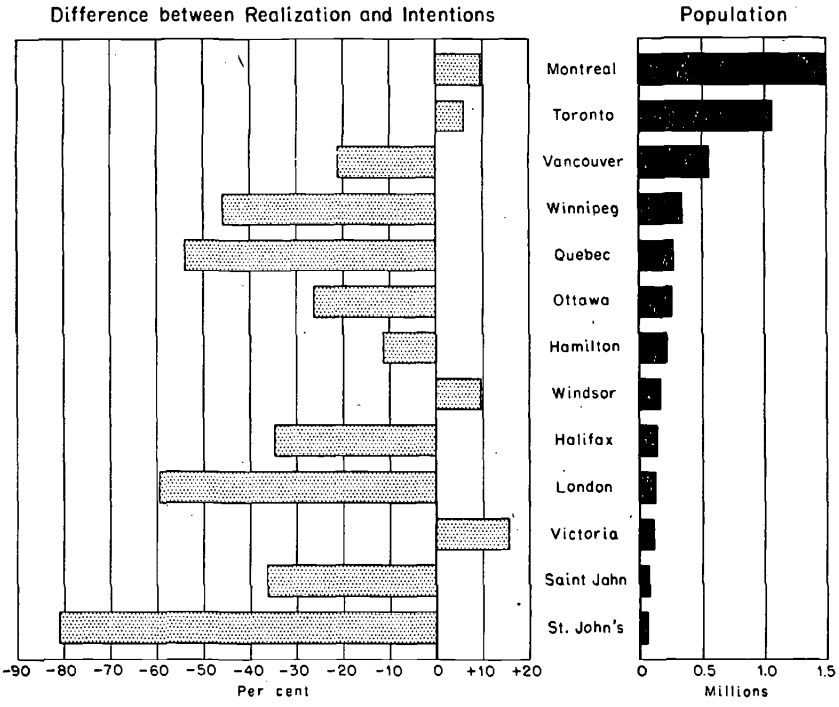


Chart 8. Percentage Difference between Manufacturing Investment Realization and Intentions, and Population, Metropolitan Cities, Canada, 1950

In 1949, firms in the $1,000,000 to $4,999,999 group came closest to estimating their actual investment outlay; in 1950 it was the $5,000,000 and over group. Small and medium-sized firms seem to have greater difficulty in estimating closely their prospective capital outlay. In 1949, firms doing a business of less than $100,000 a year indicated the most substantial differences between investment intentions and realization, with the latter falling short by 44 per cent. In 1950 it was the $500,000 to $999,999 group that showed most marked variation, with actual expenditures exceeding anticipated capital outlay by 96 per cent (see chart 9).

The finding that large firms can approximate their future expenditures on plant and equipment more closely than small and medium-sized firms also holds for the United States. Some of the reasons for this have been thus stated for the United States surveys, and they are in substance also applicable to Canadian surveys: "In the first place the expenditure plans of a large firm ordinarily involve a num-

TABLE 10

Sample of Manufacturing Firms Reporting Investment Intentions and Realization, by Gross Value of Production, Canada, 1949 and 1950

Gross Value of Production (thousands of dollars)	*Number of Firms*	*1949*			*1950*		
		Year-End Intentions (millions of dollars)	*Preliminary Estimate of Realization*	*Percentage Difference between Intentions and Realization*	*Year-End Intentions (millions of dollars)*	*Preliminary Estimate of Realization*	*Percentage Difference between Intentions and Realization*
99 or less	54	0.32	0.18	−43.8	0.13	0.19	+46.2
100 to 499	279	2.32	2.82	+21.6	2.08	3.08	+48.1
500 to 999	82	1.96	2.03	+3.6	0.90	1.76	+95.6
1,000 to 4,999	195	14.22	14.07	−1.1	10.86	13.87	+27.7
5,000 and over	204	112.81	104.36	−7.5	108.95	104.25	−4.3
Total							
Unweighted	814	131.63	123.46	−6.2[a]	122.92	123.15	+0.2[b]
Weighted		441.36	413.10	−6.4[a]	354.76	413.94	+16.7[b]

[a] The percentage differences between realization and intentions comparable to those shown in table 6 are +6.6 and +6.8 respectively.

[b] The percentage differences between realization and intentions comparable to those shown in table 6 are −0.2 and −14.3 respectively.

Source: Canadian government data.

ber of separate projects. To the extent that the discrepancies between expenditures and anticipations for these individual projects are random in nature there will already be cancellation of positive against negative discrepancies within the firm.[90] Second, there are

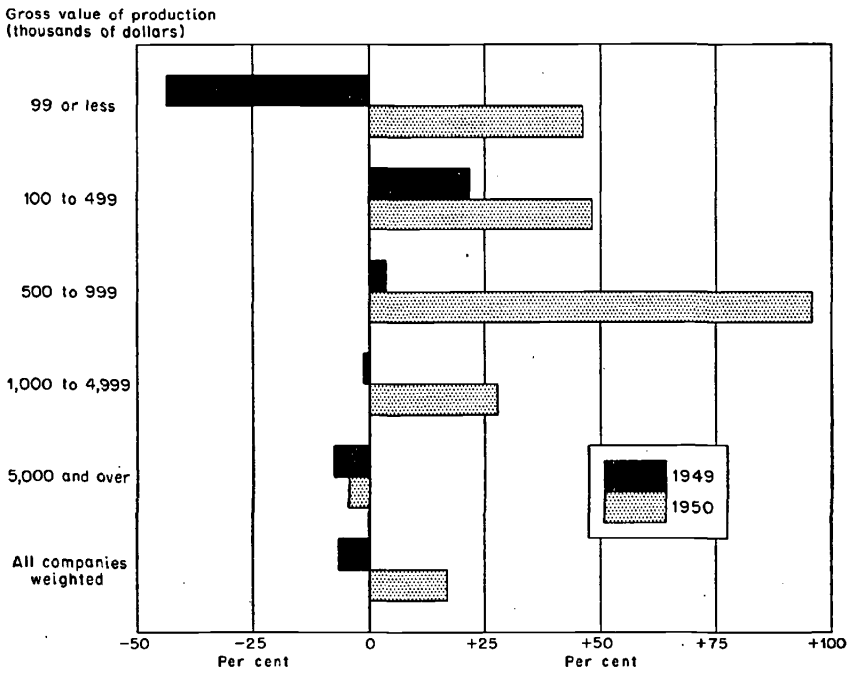


Chart 9. Percentage Difference between Investment Intentions and Realization of a Sample of Manufacturing Firms, by Gross Value of Production, Canada, 1949 and 1950

certain expenditures which occur from time to time but which cannot be specifically foreseen in advance—for example, the unexpected breakdown of a piece of machinery. The large firm will experience a number of such incidents in any given year and will be in a position to make some blanket allowance for them in advance, although un-

[90] This is also true for Canada in terms of the amount of capital expenditures made by firms. But since in this country establishments rather than companies are surveyed, cancellations on an establishment basis will not be offset to the same extent by additions, particularly as far as new projects are concerned. The Canadian procedure therefore causes greater variations in terms of numbers between investment intentions and realization for establishments operated by multiplant companies than for firms operating a single establishment or for comparable data in the United States, which treat all the plants operated by one company as one unit.

able to predict what the individual items of expenditure will be. The small firm, which experiences few such expenditures in a single year, will frequently not attempt to allow for them in advance, giving rise to a definite bias in the direction of underestimation. . . . Third, a large organization must make its plans further in advance than would be necessary for a smaller firm. The decision-making process is more formalized; a capital budget is more likely to exist. The number of administrative levels which must give approval is larger. These factors contribute not only to the making of decisions well in advance of actual expenditure but also to the inflexibility of plans when made; and the effect is to reduce the likelihood of large discrepancies from anticipations."[91]

Other reasons include the following: Large companies with greater financial resources at their disposal have better facilities to plan new projects and they can usually complete their undertakings. Small companies with inadequate financial backing may have greater difficulty. They are more likely to find themselves in the position of not being able to complete some of their projects as planned, or they may find it necessary to spread them over a longer period, cancel them, or go out of business in the case of failure. Further, most new companies starting in business in Canada are small or medium-sized enterprises. Many of these companies, being new in the field, are likely to err substantially in estimating their initial capital outlay. Also, in times of supply difficulties the well-established firm is likely to be better able to get supplies than the newcomer in the industry.

There are two secondary aspects apparent from table 10 that may be worth noting. First, serious as the understatements and overstatements of capital expenditures for certain size groups are, their importance for the estimate of investment intentions by an industry as a whole diminishes considerably because most of the pluses are offset by minuses.

Secondly, by use of sampling techniques and after weighting the results by size groups, investment intentions for manufacturing as a whole in 1950 come within 14.3 per cent of realization estimated on the same basis.[92] The use of the more complete coverage of the

[91] Friend and Bronfenbrenner, *op.cit.*, pp. 15-16.

[92] The percentage data of differences shown in tables 10 to 12 relate to the difference between intentions and realization. In all other tables the percentage differences are between realization and intentions. This has been done in order to ensure comparability between table 11 in this paper and table 2 in Friend and Bronfenbrenner, *op.cit.*, covering the United States surveys. Difference

investment-intentions survey, as shown in table 6, indicates a difference of 4.4 per cent. For 1949 the corresponding percentages are 6.8 and 1.4 per cent. These variations illustrate some of the differences associated with the use of sampling techniques.

In table 11 (see also chart 10) the data for the same sample of manufacturing establishments were rearranged to obtain a frequency distribution of the variations between investment intentions and realization. In both years the largest number of companies is to be found in the group reporting underestimates of actual capital outlay by 200 per cent or more, and the second largest number in the group in which statements of intentions and realization were the same. These two groups comprise over one-third of the total number of firms in 1949 and over two-fifths in 1950. But on examination it appears that neither the gross understatement nor the perfect score has much impact on the accuracy of the investment-intentions surveys, for the group with the largest percentage differences between intentions and realization recorded the smallest expenditures per company, with one exception. In 1949 the average investment intentions per company for this group comprised only 8 per cent of the average for all groups, and in 1950 the proportion continued to be small (13 per cent). The "perfect score" group was composed mainly of firms that said they would make no capital expenditures and included a few that indicated they would make very small outlays.

What does matter, however, is the performance of companies which indicated large capital expenditures. The data show that it is precisely these firms which had the best record in reporting their investment plans. Companies undertaking large projects and making outlays of between three and six times the average of the manufacturing industry were able to estimate their investment expenditures a year ahead within a margin of less than 10 per cent (see table 11). This suggests that not only are large companies likely to be able to estimate their future capital outlay more closely than small or medium-sized companies, but the advance preparation, planning, and consultation that go into large projects usually pay off, with the estimates of costs coming close to actual costs. Of course, there may be projects of a nonstandard type in which wide differences are more likely, or there may be periods of supply bottlenecks and rising prices in which even the greater facilities of

figures for table 10 comparable with those in table 6 in this paper are given in footnotes a and b to table 10.

TABLE 11

Sample of Manufacturing Firms Reporting Investment Intentions and Realization, Distributed by Variation between Intentions and Realization, Canada, 1949 and 1950

Percentage Difference between Intentions and Realization	*1949*				*1950*			
	Companies		*Average Gross Value of Production per Company for Each Group*	*Average Investment Intentions per Company for Each Group*	*Companies*		*Average Gross Value of Production per Company for Each Group*	*Average Investment Intentions per Company for Each Group*
	Number	*Per Cent*	*(thousands of dollars)*		*Number*	*Per Cent*	*(thousands of dollars)*	
−100 to −80	78	9.6	2,337	185	80	9.8	1,817	111
−79.9 to −60	53	6.5	4,162	161	44	5.4	4,751	228
−59.9 to −40	59	7.2	6,477	477	60	7.4	9,088	394
−39.9 to −20	56	6.9	5,714	246	52	6.4	9,469	419
−19.9 to −10	23	2.8	5,591	204	17	2.1	5,867	272
−9.9 to 0	25	3.1	11,850	661	12	1.5	15,655	910
No change	119	14.6	625	2	135	16.6	801	1
0 to 9.9	21	2.6	8,567	401	23	2.8	7,747	783
10 to 19.9	29	3.6	9,485	185	13	1.6	3,045	88
20 to 39.9	46	5.6	10,756	271	39	4.8	7,402	152
40 to 59.9	34	4.2	7,679	196	35	4.3	10,870	147
60 to 79.9	27	3.3	5,739	95	21	2.6	5,228	77
80 to 99.9	18	2.2	5,783	155	14	1.7	9,979	141
100 to 119.9	27	3.3	4,622	86	23	2.8	1,623	35
120 to 139.9	13	1.6	4,325	88	14	1.7	2,725	90
140 to 159.9	7	0.9	11,427	17	13	1.6	5,398	46
160 to 179.9	12	1.5	10,234	105	11	1.4	9,187	83
180 to 199.9	3	0.4	6,318	24	6	0.7	5,609	241
200 and over	164	20.1	1,965	3	202	24.8	2,943	20
Total	814	100.0	4,667	162	814	100.0	4,667	151

Source: Canadian government data.

large companies may not prove fully adequate to the task of pricing new ventures.

The question arises: How successful can one expect individual firms to be in forecasting the direction of capital expenditures even though there may be significant differences in absolute terms between investment plans and actual expenditures? To throw light on

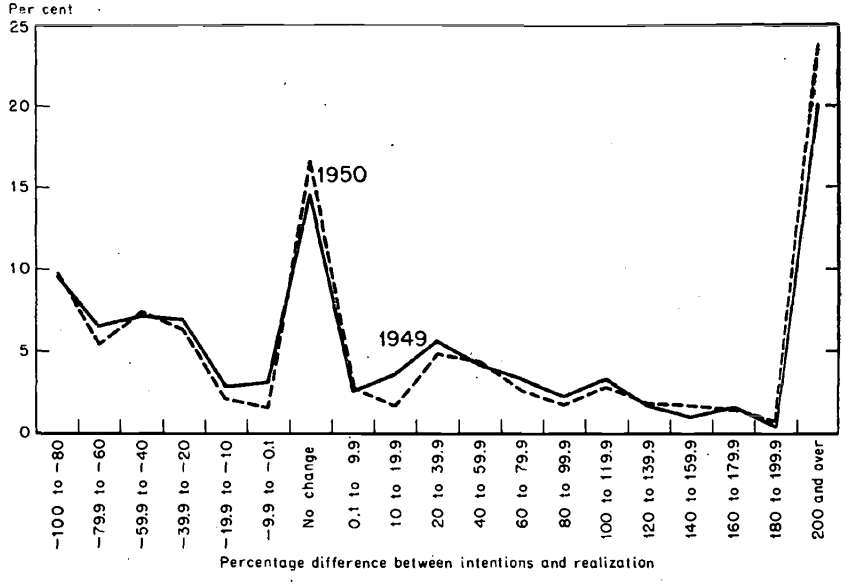


Chart 10. Frequency Distribution of Percentage Difference between Investment Intentions and Realization of a Sample of Manufacturing Firms, Canada, 1949 and 1950

this question the returns of the 814 sample manufacturing companies were arranged into three groups: those expecting a decline of capital expenditures in 1950 from 1949, those expecting no change, and those expecting an increase. The first and the third groups, covering firms expecting a change, were then each divided into four sectors depending on the percentage differences between realization in 1949 and intentions reported for 1950.

It is noteworthy that firms in seven out of the eight sectors correctly anticipated a decline or an increase in their capital expenditure, the only exception being the 9.9 per cent and under sector. These firms had expected to increase their investment outlay by 5 per cent, but in fact spent 6 per cent less than in the preceding year (see table 12).

TABLE 12

Sample of Manufacturing Firms Reporting Investment Intentions and Realization, Distributed by Percentage Differences between Realization 1949 and Intentions 1950, Canada, 1949 and 1950

Percentage Difference between Realization 1949 and Intentions 1950	Companies		Total for Each Group			Percentage Difference between:			Average per Company in Each Group		
	Number	Per Cent of Total	Realization 1949 (thousands of dollars)	Intentions 1950 (thousands of dollars)	Realization 1950 (thousands of dollars)	Realization 1949 and Intentions 1950	Realization 1949 and Realization 1950	Realization and Intentions 1950	Realization 1949 (thousands of dollars)	Intentions 1950 (thousands of dollars)	Realization 1950 (thousands of dollars)
—40 and under	323	39.7	51,770	13,954	29,623	—73.0	—42.8	—52.9	160	43	92
—39.9 to —20	69	8.5	21,046	14,783	10,007	—29.8	—52.5	+47.7	305	214	145
—19.9 to —10	31	3.8	8,481	7,084	5,892	—16.5	—30.5	+20.2	274	229	190
—9.9 to 0	15	1.8	6,228	6,011	4,595	—3.5	—26.2	+30.8	415	401	306
Subtotal, all minus companies	438	53.8	87,525	41,832	50,117	—52.2	—42.7	—16.5	200	96	114
No change	119	14.6	151	151	451	0.0	+198.7	—66.5	1	1	4
0 to 9.9	11	1.4	4,571	4,785	4,293	+4.7	—6.1	+11.5	416	435	390
10 to 19.9	15	1.8	2,510	2,882	2,543	+14.8	+1.3	+13.3	167	192	170
20 to 39.9	26	3.2	7,246	9,213	10,527	+27.1	+45.3	—12.5	279	354	405
40 and over	205	25.2	21,458	64,064	55,220	+198.6	+157.3	+16.0	105	313	269
Subtotal, all plus companies	257	31.6	35,785	80,944	72,583	+126.2	+102.8	+11.5	139	315	282
Total	814	100.0	123,461	122,927	123,151	—0.4	—0.3	—0.2	152	151	151

Source: Canadian government data.

Having anticipated fairly well the direction of capital expenditures, those that had forecast a decline turned out to be too pessimistic and those that had forecast an increase turned out to be too optimistic. Companies with declining capital expenditures anticipated a drop of 52 per cent, but it turned out to be only 43 per cent. Companies making larger investment outlays had counted on increasing their capital expenditures over 1949 by 126 per cent, but actual realization was up somewhat below that figure, 103 per cent.

The "no change" group showed a substantial percentage difference between realization and intentions, but in practice this had little significance for total investment plans and actual expenditures because of the small absolute amounts involved.

We turn now to a test of the reliability of individual companies as investment forecasters. Of the 814 manufacturing companies sampled 319 were chosen because their statements of investment intentions and realization showed differences of 40 per cent or less in 1949. The forecasting record of these companies was checked for 1950. Of 119 companies that had a perfect score in 1949, 61 repeated it in 1950. Of 46 companies recording a difference of less than 10 per cent in 1949 (either up or down) only 8 could make similarly close estimates in 1950. Of 52 firms estimating actual capital expenditures within a range of 10 to 19.9 per cent in 1949, 23 were able to do as well in 1950 (see table 13).

A related question concerns the accuracy of capital expenditure plans as reported by company officers at various levels in the business hierarchy. Table 14 summarizes percentage differences between investment intentions and realization for the 814 sample manufacturing companies in 1950 by status of the respondent.

Apparently, reports by owners and secretaries of companies about future capital expenditures were much closer to actual realization than reports by any other group of company officers reporting. The data suggest that company employees far removed from policy formulation and management are apt to make the least accurate estimates. For example, as table 14 shows, bookkeepers and clerical staff members entrusted in some of the smaller firms with the completion of capital-forecast questionnaires reported investment plans which turned out to differ from actual expenditures by 50 per cent or more.

Another noteworthy feature suggested by the data is the greater conservatism of company officers concerned with the financial as-

TABLE 13

Sample of Manufacturing Firms Reporting Investment Intentions and Realization: Reliability Test of Individual Companies, Canada, 1949 and 1950

Percentage Difference between Intentions and Realization, 1949	*Number of Companies, 1949*	*Number and Percentage Difference between Intentions and Realization of the Same Companies in 1950*							
		—20 and Over	*—19.9 to —10*	*—9.9 to 0*	*No Change*	*0 to 9.9*	*10 to 19.9*	*20 and Over*	*Total*
—39.9 to —20	56	18	5	2	3	1	2	25	56
—19.9 to —10	23	4	0	1	17	0	1	0	23
—9.9 to 0	25	8	0	1	0	3	0	13	25
No change	119	24	0	0	61	1	0	33	119
0 to 9.9	21	6	1	1	1	2	0	10	21
10 to 19.9	29	9	1	0	0	2	1	16	29
20 to 39.9	46	14	2	1	2	2	0	25	46
Total	319	83	9	6	84	11	4	122	319

Source: Canadian government data.

TABLE 14

Sample of Manufacturing Firms Reporting Investment Intentions and Realization, by Status of Respondent, Canada, 1950

Status of Respondent	Companies		Total for Each Group		Percentage Difference between Realization and Intentions	Average per Company in Each Group	
	Number	Per Cent	Intentions (thousands of dollars)	Realization (thousands of dollars)		Intentions (thousands of dollars)	Realization (thousands of dollars)
Owner, part owner, etc.	38	4.7	185	194	−4.6	5	5
President	46	5.6	606	820	−26.1	13	18
Vice-president	26	3.2	5,599	6,487	−13.7	215	249
Director	10	1.2	290	228	+27.2	29	23
Comptroller, controller, etc.	53	6.5	33,162	22,335	+48.5	626	421
Manager	131	16.1	13,743	12,034	+14.2	105	92
Secretary	68	8.3	10,285	10,675	−3.7	151	157
Treasurer, secretary-treasurer, etc.	156	19.2	21,105	25,190	−16.2	135	161
Auditor, accountant, etc.	194	23.8	33,010	40,566	−18.6	170	209
Attorney, statistician, work analyst	3	0.4	1,592	1,430	+11.3	531	477
Bookkeeper, cashier	33	4.1	110	200	−45.0	3	6
Chief clerk, clerk	9	1.1	80	260	−69.2	9	29
Superintendent, chief engineer, etc.	9	1.1	1,138	993	+14.6	126	110
Not stated	38	4.7	2,022	1,739	+16.3	53	46
Total	814	100.0	122,927	123,151	−0.2	151	151

Source: Canadian government data.

pects of business operations. Executive officers and management, on the other hand, are frequently apt to overstate capital outlay.

This brief review of the hazards of the individual business forecaster implies that making a successful company investment forecast means hard work, full knowledge of the projects involved and of the supply situation and price trends in the capital goods market, and an adequate understanding of the various contingencies which may cause projects to be canceled, deferred, reduced, or expanded, or new undertakings to be initiated. The accuracy with which any given firm assesses all these factors may vary greatly from one year to the next depending upon the size and type of its investment program and the effect that a changing economic climate may have on a particular industry. Thus the fact that a company or a group of firms was successful in any one year in estimating its capital outlay closely does not necessarily mean that it will be similarly successful in the next year.

6. Individual company forecasts: reasons for variations

In conjunction with the midyear review of investment intentions, companies reporting a change in their intentions are asked to give the major reasons for this change. A special tabulation of the reasons given by manufacturing firms has been made for 1950, and the reasons are summarized in tables 15 to 17.

The year 1950 was chosen because by May of that year the supply situation was reasonably well in balance and prices were moving only slowly. Many of the special circumstances prevailing in the earlier postwar period had passed, and the new strain to be imposed by a speed-up in armaments had not, as yet, affected business thinking. Thus the months preceding mid-1950 perhaps come as close to a "normal" peacetime period of moderate business optimism and the working of open-market forces as can be found in Canada since the end of the war. To indicate the change in the factors influencing the possible realization of planned capital outlay, similar data on reasons for changes in investment intentions as given at mid-1951 are summarized in abbreviated form in table 18.

Of a total of 773 manufacturing firms reporting in the mid-1950 survey 451 indicated variations between their midyear and year-end investment intentions, and the remaining 322 stated "no change." Of those reporting a change about half[93] explained why they found

[93] In the United States a follow-up technique brought a higher response, 84 per cent, Friend and Bronfenbrenner, *op.cit.*, p. 17. Since Canadian industry

it necessary by May to revise their earlier intentions (see table 15).

Since some of the companies gave more than one reason, 218 firms presented a total of 236 replies. Of these replies, 167 were reasons why firms had revised their investment intentions upward and 69 were reasons why they had adjusted them downward. Companies giving reasons were most numerous in cases where the percentage change between the two estimates was 20 per cent or more

TABLE 15

Midyear Survey of Manufacturing Firms Changing Their Year-End Investment Intentions, Giving Reasons and Giving No Reasons for Change, Canada, 1950

Percentage Difference between Year-End and Midyear Investment Intentions	*Number of Companies*			*Average Gross Value of Production per Company in Each Group (millions of dollars)*	*Average Investment Intentions per Company in Each Group*
	Giving Reasons	*Giving No Reasons*	*Total*		
—20 and under	55	81	136	5.45	0.29
—19.9 to —10	7	17	24	13.56	0.84
—9.9 to 0	6	10	16	25.04	1.93
0 to 9.9	8	11	19	10.89	0.50
10 to 19.9	19	22	41	8.77	0.59
20 and over	123	92	215	7.03	0.16
Total	218	233	451	7.86	0.35

Source: Canadian government data.

(up or down). But again the amounts involved were much smaller than those reported by companies indicating changes of less than 20 per cent (see table 15).

Before reviewing the frequency with which the reasons for changing investment intentions were given by manufacturing firms at mid-1950, a brief statement of what the various reasons mean may be helpful. The reasons given have been arranged in twelve groups for upward adjustments and into nine groups for downward revisions. Where possible the reasons have been grouped in a manner

has been very cooperative in participating in capital expenditure surveys, one explanation for this variation in the percentage response might possibly be the difference in techniques. The special follow-up used in the United States appears to be a more effective method of achieving replies from respondents than an apparently routine question attached to a general-purpose questionnaire. Also, the fact that the United States survey used a check list of reasons in addition to an invitation for supplementary comments, while the Canadian survey only posed an open question, is likely to have had some influence on the degree of response.

similar to that shown in table 6 in the United States appraisal of business capital expenditure surveys.[94] The first seven reasons for the upward revisions as given in table 16 and the first five reasons for the downward revisions as given in table 17 are identical with

TABLE 16

Midyear Survey of Reasons Given by Manufacturing Firms for Upward Revisions of Their Investment Intentions, Canada, 1950

Reason	Companies		Average Gross Value of Production per Company in Each Group (millions of dollars)	Average Investment Intentions per Company in Each Group (millions of dollars)
	Number	Per Cent		
1. Sales outlook	9	5.4	4.99	0.28
2. Plant and equipment supply situation	3	1.8	1.63	0.12
3. Plant and equipment costs	13	7.8	2.88	0.16
4. Competitive conditions	6	3.6	8.64	2.41
5. New products	11	6.6	7.85	0.42
6. Technology	11	6.6	4.60	0.16
7. Routine underestimate	24	14.3	4.83	0.15
8. Inadequacy of storage facilities	21	12.6	10.65	0.19
9. Carryover from previous year	7	4.2	1.75	0.04
10. Projects added	47	28.1	14.10	0.24
11. Firmer estimate	11	6.6	7.89	0.34
12. Miscellaneous[a]	4	2.4	5.46	0.13
Total	167[b]	100.0	8.38	0.29

[a] For description see p. 220.

[b] Total number of companies giving reasons in tables 16 and 17 is higher than that shown in table 15 because some firms gave more than one reason.

Source: Canadian government data.

the American classification. Some of the reasons given in the United States survey (covering 1949) were not applicable to Canadian conditions (as they prevailed in May 1950), for example, "availability of labor and materials."[95] Other reasons differed in substance; for example, a boxcar shortage in Canada necessitated the expansion of storage facilities by a number of firms which had not foreseen the need for this. To list the reasons:[96]

[94] *ibid.*, p. 19.

[95] This factor, however, was mentioned in similar surveys undertaken in Canada in 1949 and 1951.

[96] See also check list of reasons and other explanatory factors as given in Friend and Bronfenbrenner, *op. cit.*, pp. 17 and 18.

1. Sales outlook. When this reason is given it reflects mainly a change in market prospects for the commodities for the production of which new capital expenditures were planned. In the case of upward adjustments it may have been the judgment of the firms

TABLE 17

Midyear Survey of Reasons Given by Manufacturing Firms for Downward Revisions of Their Investment Intentions, Canada, 1950

Reason	Companies		Average Gross Value of Production per Company in Each Group (millions of dollars)	Average Investment Intentions per Company in Each Group (millions of dollars)
	Number	Per Cent		
1. Sales outlook	12	17.4	2.09	0.17
2. Plant and equipment supply situation	5	7.2	45.43	2.03
3. Plant and equipment costs	6	8.7	1.92	0.20
4. New products	2	2.9	2.45	0.81
5. Routine overestimate	5	7.2	18.90	0.76
6. Carryover from preceding year	2	2.9	12.70	0.38
7. Projects canceled or deferred	24	34.8	10.28	0.70
8. Firmer estimate	2	2.9	2.67	0.36
9. Miscellaneous[a]	11	16.0	8.22	0.33
Total	69[b]	100.0	10.67	0.59

[a] For description see p. 220.

[b] Total number of companies giving reasons in tables 16 and 17 is higher than that shown in table 15 because some firms gave more than one reason.

Source: Canadian government data.

either that long-term prospects were more favorable than had been anticipated or that a special opportunity existed which would warrant making the expenditures *now* and writing off the capital outlay in a comparatively short period. Excluded from this grouping, even though the reasons have some bearing on market prospects, are changes in competitive conditions, the introduction of new products, or a change in the distribution of the production schedule of different commodities. These reasons are listed separately under 4 and 5.

2. Plant and equipment supply situation. This reason covers two types of cases. Where upward adjustments were involved, they were facilitated by easier supply conditions than had been expected. These new projects or the expansion of existing projects might have been decided upon, or added machinery and equipment orders might

have been made, in order to take advantage of favorable delivery dates. Where downward adjustments were indicated, they frequently involved delays in delivery of equipment or a lengthening of the period of construction beyond that anticipated.

3. Plant and equipment costs. Several types of cases are covered. First, rising capital costs applied to the same volume of work were responsible for larger dollar expenditures. This would cover cases where no allowance or only insufficient allowance had been made for price rises. Secondly, higher anticipated costs led to cancellations of projected capital oulay. Thirdly, lower anticipated costs encouraged making additional expenditures. In the first case no change in the volume of investment would have been involved, but it would have followed in the last two cases.

4. Change in competitive conditions. Reasons in this category cover changes in investment intentions because of the endeavor of a number of companies either to better the quality or the delivery dates of their products, or to lower their current prices, prevent them from rising further, or slow down any anticipated rise. The objective was to obtain a larger share of the market, regain a position lost, or just hold a position vis-à-vis rivals in the trade. Of special importance for Canada was the continuing attempt of manufacturers to replace imports with domestic products where this could be done economically.

5. New products. This reason usually explains additional expenditures made to produce entirely new products or expand the output of newly introduced articles or made because of a change in the distribution of the current output pattern. "New" products cover articles new to the company, as well as items not previously produced in Canada. The shift in production pattern frequently results from changing market conditions, with some items becoming more fashionable and others declining in saleability. In addition the appearance of new materials may make it possible to turn out customary products in a new form which will appeal to the consuming public, leading to the discontinuation or reduction in use of older types of materials. For example, the increasing usage of nylon required substantial capital expenditures for new fabricating equipment.

6. Technology. This category covers a variety of reasons for making capital outlays: new processes, new techniques, more efficient equipment replacing less efficient equipment even before it had

reached complete obsolescence or had been fully written off, the introduction of assembly lines, and so forth.

7. Routine under- or overestimates. By midyear many firms were able to say whether they had made insufficient or too large allowances for incidental capital expenditures which could not be estimated with accuracy earlier.

8. Inadequate storage facilities. A number of companies reported as the reason for changing their investment intentions that their storage facilities for both end products and raw materials had proved less adequate than they had expected. This was due partly to their need to carry larger inventories in a peacetime period, and partly to uncertainties in transportation when shortages of boxcars at times made it difficult to procure raw materials promptly or to move all the finished products turned out by the plant.

9. Carryover from previous year. In some cases explanations offered under this grouping referred to deliveries of equipment that had been anticipated for late in the preceding year, usually December, but that had arrived early in the new year. In other cases payments on machinery and equipment that had been delivered in the preceding year had been delayed and were made in the new year. Similar cases were reported for construction projects, because of either a last-minute physical carryover or the postponement of payments for work already done.[97]

10. Projects added, deferred, or canceled. Some of the companies specifically stated that their investment intentions were up because they had decided to embark upon a particular project, for example, the addition of another wing to the plant, an office building, or a garage. Others gave as reasons for scaling down their projected capital outlay that they had either abandoned a project or deferred it—in some cases for a year, in other cases indefinitely. Still others reported the replacement of one project of one type or in one locality by a project of another type or in another locality. In the

[97] The questionnaire (see Appendix B) specifically asks a firm to "report construction in the year in which carried out and equipment in the year in which acquired, irrespective of the time payment is made." Some firms consider that equipment is acquired at the time payment is made. The legal or taxation concept of "acquisition" will therefore on occasion vary from business interpretation. For the purpose of economic analysis, information on the time equipment is produced and subsequently acquired by the final user is preferable to information on when payment for the equipment is made. But in practice there are differences in the way business firms interpret acquisition and consequently in what they report as capital expenditures to be made (see also section 8).

latter case the projected capital outlay might change only a little because for the firm as a whole new projects would largely offset the cancellations or even exceed them. However, because capital expenditure intentions are surveyed in Canada on an establishment basis, this would have the effect of increasing the *number* of new projects added or canceled, although the net increase or net decrease in capital outlay may have been only minor. In the cases listed in this group no further reasons were given by reporting companies as to why this decision was taken. Many of the cases of deferment or abandonment involved projects planned by small and medium-sized companies which might have been facing difficulties in securing the necessary funds to carry out their plans. Although the companies did not say so, some of the firms in this category belong to industries that faced uncertain short-term market prospects at mid-1950; for example, the food-processing and textile fields.

11. Firmer estimates. In this category were companies which were able to make more definite estimates at midyear for a variety of reasons. The capital budgets of a number of large companies had been firmed and approved by the board of directors only after the year-end investment intentions had been reported. Some firms were able to revise their original, tentative estimates in the light of construction contracts actually let and machinery and equipment orders placed at a definite price. There were a number of cases in which, as a result of actual progress made in the early part of the year, firms were able to appraise with greater assurance the progress that was likely to be made during the remainder of the year on projects already under way.

12. Miscellaneous. These reasons covered, in the main, five types of cases: new expenditures made to facilitate the sale of a business or the cancellation of capital expenditures planned in the case of closing out a business or its disposition; unexpected capital expenditures to make good losses resulting from natural causes such as fire, floods, storms, and so forth; the decision to buy (or lease) equipment instead of leasing (or buying) it; accounting decisions, for example, to charge a specific item to capital account rather than to operating expenses or vice versa; reporting errors due to misinterpretation of managerial decisions or just clerical mistakes.

We turn now to the quantitative evidence.

The largest number of companies reporting upward revisions of their investment intentions at mid-1950 were firms that had decided to embark on new projects. In forty-seven cases, comprising 28 per

cent of the total, this was given as the main reason. But on the whole, new projects developed after the program for the year had been formulated were small. Capital outlays of this group of firms were below the amounts which the average company in the sample intended to spend (see table 16). As suggested earlier, the quantitative impact of these changes, numerous as they were, on investment intentions for manufacturing as a whole was even less than the data indicate, because in cases of multiplant firms the addition of one project might be offset by the withdrawal of another, making the net change in amounts considerably smaller than the gross change. In an examination of the individual reports of establishments operated by multiplant firms, it was found that a number of companies that had made plans to expand in one community seemed suddenly to decide to locate in another place. Municipal taxes and local concessions, availability of labor, wage rates, closeness to markets and sources of materials and power, or just the desire for greater centralization or decentralization, as the case might be, were all factors in inducing firms to alter initial decisions which may have been tentative at the time they were first reported.

On the other end of the scale were companies, few in number but making the largest capital expenditures, which gave competitive conditions as the main reason for upward adjustment of their plans. Although these reasons were given in only six instances, or 4 per cent of the total, the average capital outlay per establishment involved about $2.5 million in 1950.

The group with the next largest capital outlay, although considerably below the $2.5 million figure, offered new products and a change in the production pattern as the main reasons. There were eleven cases, or 7 per cent, in this category.

Among the twelve groups the sales outlook ranked only eighth in importance, and capital expenditure intentions per company were just below the average for all companies. This suggests that there were not many opportunities manufacturing firms had overlooked six months earlier that suddenly seemed important enough to induce them to go ahead and expand their plant facilities in a hurry. In a way this reflects the economic conditions at the time the sample survey was undertaken, which have been described as reflecting moderate business optimism.[98]

Another notable feature is that although costs were rising only

[98] A year later, by mid-1951, the situation was quite different, with changes in the sales outlook given as a leading reason (see table 18).

slowly in the first half of 1950, in thirteen cases, or 8 per cent, costs were mentioned as a factor in the upward revisions in capital expenditures.

Two other groups were relatively important in terms of the number of cases involved, although not in terms of the amount of capital expenditures: routine underestimate, twenty-four cases or 14 per cent, and inadequacy of storage facilities, twenty-one cases or 13 per cent.

The remaining reasons were less frequently mentioned: firmer estimates, 7 per cent; technology, 6 per cent; carryover from previous year, 4 per cent; and plant and equipment supply situation and miscellaneous, each 2 per cent. In terms of the amount of capital expenditures involved, the two leading reasons were plant and equipment supply situation and new products.

A similar survey undertaken in the United States covering the situation in 1949 lists as six principal forces motivating upward revisions in capital expenditure plans by business (in order of importance): plant and equipment supply situation; routine underestimates; miscellaneous influences, including the initiation of substantial new projects; plant and equipment costs; sales outlook; and competitive conditions.[99] These reasons were mentioned by 77 per cent of the firms reporting. In Canada the six most frequent replies given included (again in order of importance): projects added, routine underestimates, inadequacy of storage facilities, plant and equipment costs, new products, and changes in technology. These reasons were responsible for 76 per cent of all the replies received. In both countries four of the reasons were substantially the same. There was greater emphasis on technology and storage facilities in Canada, while supply factors and competition were more frequently mentioned in the United States.[100]

In a period of comparative economic stability such as prevailed in mid-1950, the reasons given for downward revisions of investment plans were considerably fewer than those given for upward revisions. Of the sixty-nine replies received 35 per cent mentioned projects canceled or deferred. These cases cover, in the main, two types: plans by small or medium-sized firms with limited financial backing in industries with uncertain market prospects; and those by large firms which in their continuing review of capital expendi-

[99] Friend and Bronfenbrenner, *op.cit.*, p. 19.

[100] In part these variations are explained by different economic conditions in the two countries when the respective surveys were undertaken.

ture programs attached greater priorities to certain projects and regions, thus canceling some undertakings and substituting others. Other significant reasons for downward adjustments of investment plans were the sales outlook, 17 per cent; miscellaneous, 16 per cent; plant and equipment costs, 9 per cent; and plant and equipment supply situation, 7 per cent. These five groups were responsible for 84 per cent of the total (see table 17). The corresponding five leading reasons given in the United States accounted for 75 per cent of the total and included the following (in order of importance): sales outlook; net earnings; plant and equipment supply situation; miscellaneous, including the cancellation of new projects; and working capital requirements.[101]

In the United States greater emphasis was placed specifically on the sales outlook than in Canada, 34 as against 17 per cent. Again, the fact that the surveys were taken at different times would have a bearing on the results. Support for these conclusions is obtained from Canadian data on intercountry comparisons; they reveal that the reasons for changes in investment plans are governed largely by a revision in the appraisal by the business community of the economic situation and prospects for the future. This is illustrated by table 18, which compares the frequency distribution of explanatory factors for upward and downward revisions of investment plans in mid-1950 and mid-1951[102] (see also chart 11).

7. Response and statistical factors

Two sets of factors which bear on the reasons why realization may differ from investment intentions as reported by business have so far been examined. These are conditions arising out of the present state of the economy and the economic outlook, and differences affecting the operations or prospects of individual firms. But in addition to these macro-economic and micro-economic influences there is a third set that may be described as covering response and statistical factors. Only the response factor contributes to the differences between businessmen's stated intentions and their realization. The statistical factor is associated with the making of estimates of both intentions and realization. While it contributes to variations between *total* estimates of intentions and realization, the resulting

[101] *ibid.*, p. 19.

[102] For a summary of possible reasons for deviation of investment intentions from realization in the United States in 1951, see Lawrence Bridge, "Business Investment and Sales Expectations in 1951," *Survey of Current Business* (U.S. Department of Commerce), April 1951, pp. 12 and 13.

TABLE 18

Percentage Frequency Distribution of Explanatory Factors for Upward and Downward Revisions of Investment Plans by Manufacturing Firms, Canada, 1950 and 1951

Reason	1950			1951		
	Upward Revisions	*Downward Revisions*	*Total*	*Upward Revisions*	*Downward Revisions*	*Total*
1. Sales outlook	5.4	17.4	8.9	18.5	6.7	14.7
2. Plant and equipment supply situation	1.8	7.2	3.4	3.8	13.3	6.8
3. Plant and equipment costs	7.8	8.7	8.0	20.8	3.3	15.3
4. Competitive conditions	3.6	0.0	2.5	0.0	0.0	0.0
5. New products	6.6	2.9	5.5	3.8	0.0	2.6
6. Technology	6.6	0.0	4.7	3.8	0.0	2.6
7. Routine under- or overestimate	14.3	7.2	12.3	18.5	1.7	13.2
8. Inadequacy of storage facilities	12.6	0.0	8.9	5.4	0.0	3.7
9. Carryover from preceding year	4.2	2.9	3.8	3.8	5.0	4.2
10. Projects added, canceled, or deferred	28.1	34.8	30.1	16.9	18.3	17.4
11. Firmer estimate	6.6	2.9	5.5	3.1	1.7	2.6
12. Miscellaneous[a]	2.4	16.0	6.4	1.6	50.0[b]	16.9
Total	100.0	100.0	100.0	100.0	100.0	100.0

[a] For description see p. 220.

[b] Ten per cent of the 50 per cent covers the reasons corresponding to those given in the preceding upward-revisions column and referred to in footnote a. The remaining 40 per cent includes other reasons, as follows: 16.7 per cent, availability of labor and materials; 13.3 per cent, the effect of government fiscal policies; 6.7 per cent, availability and cost of debt financing; and 3.3 per cent, timing.

Source: Canadian government data.

error is to be ascribed to the statistician and not to the businessman.

In general the response by Canadian businessmen to surveys of capital expenditure intentions has been good. In quantitative terms the coverage for most industries is high (see Appendix A). The quality of the reporting has been improving over the seven-year period in which surveys of capital expenditure intentions have been conducted in Canada, partly because of the generally cooperative attitude of the business community and partly because of the continuous endeavor to spread an understanding of how important these surveys are for improving economic analysis and contributing to knowledge of business prospects.

Some differences in the quality of investment-intention returns continue, and these are conditioned by the type of response which is obtained from firms participating in the surveys. If, for example, a firm has two estimates, one representing the maximum amount it would be in a position to spend on capital outlay within the fol-

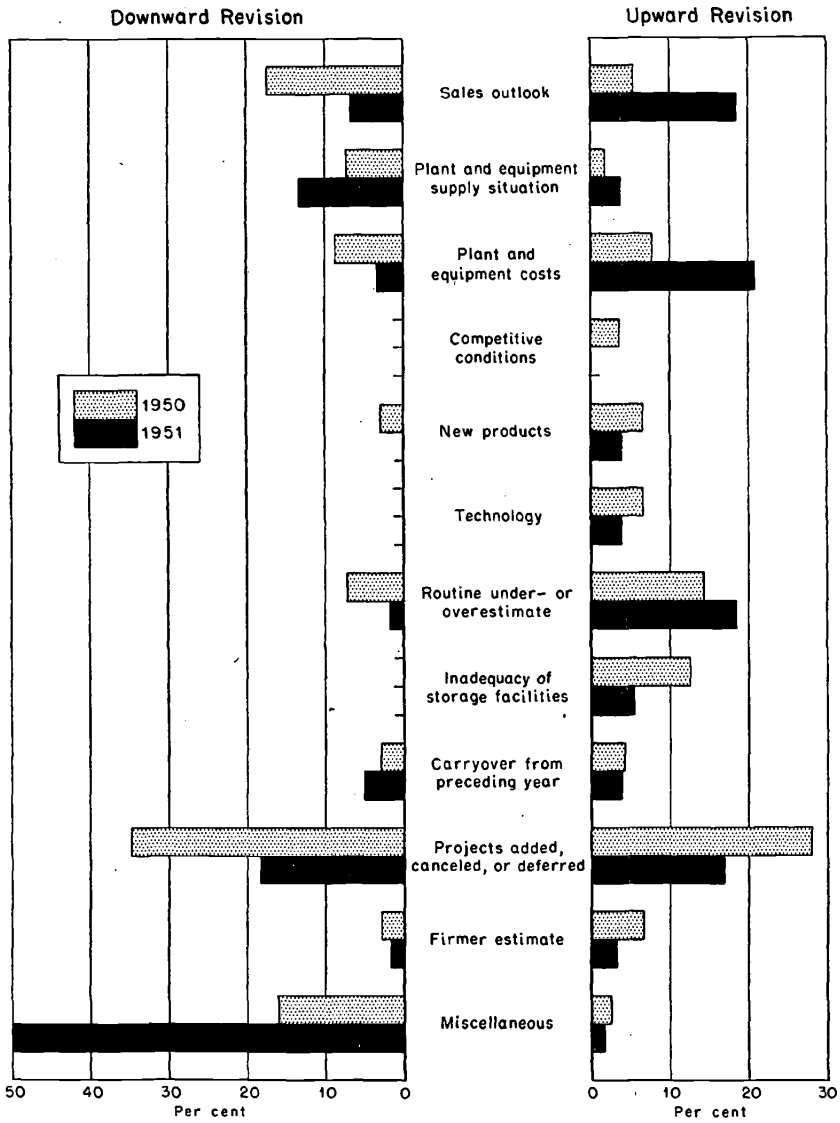


Chart 11. Percentage Frequency Distribution of Explanatory Factors for Upward and Downward Revisions of Investment Plans by Manufacturing Firms, Canada, 1950 and 1951

lowing year, and the other the amount it is likely to spend, inclusion of the former figure in the questionnaire on capital expenditure intentions would be less satisfactory than inclusion of the latter figure. Then there is the question of the time at which the questionnaire is completed. If, for example, the manager of one plant records on the form the amount of capital expenditures he hopes to make next year, before the board of directors of a multiplant enterprise has given its decision, three things may happen. The board may approve the plans of the local manager; it may reduce the amounts involved; or it may ask him to revise his recommendations, resulting perhaps in increased outlay. Thus in the last two cases the returns completed by the local plant manager would not be as realistic as if he had filled in the return after the board's decision. In many cases reports for all plants of a company are completed at the head office. This tends to introduce greater consistency between branch and head office reporting.

The quality of the return will also depend on how well informed the officer completing the schedule is about the company's operations and policies. If he is a vice-president, the general manager or his assistant, or the controller, the answer is likely to reflect serious company thinking. On the other hand, a junior officer in the accounting department, filling out the questionnaire, might not be aware of all the ramifications of the firm's investment, financial, and organizational policies which would guide operations in the coming year (see also table 14).

Other response factors include cases where the returns do not reflect the best judgment of the respondent because he is in a hurry, does not care, or in principle does not believe in filling out government questionnaires, which he regards as "red tape." In such cases he might still complete the forms in order not to be bothered by follow-up correspondence and calls, but the returns would be of doubtful value.

Besides response factors there are statistical factors contributing to differences between business investment intentions and realization. The latter arise out of the necessity of making estimates for the following: sectors not canvassed; firms not covered in industries surveyed; types of capital expenditures not obtainable through investment-intentions questionnaires; and errors resulting from the statistical techniques employed, particularly for regional and industrial totals.

1. Sectors not covered. It has been found uneconomical so far to

survey a small number of industries, including individual retail stores, and residual groups in the finance and commercial service sectors (see table A-1, Appendix A). Further, in agriculture and fishing, capital expenditure estimates are easier to obtain from sales anticipations by equipment suppliers and other reports from the field than directly from farmers and fishermen. The capital outlay of the first group, containing industries and residual enterprises, is estimated at 9 per cent of total business investment in 1950, and that of agriculture and fishing at 19 per cent. For all these sectors independent estimates are made, based on various data, including comments from the field.

2. Firms not covered. Within the industries covered by the survey it has been found neither practical nor economical to survey all the establishments. In most industries firms doing a business of less than $100,000 a year are not canvassed. In other groups, notably in the trade sector, where there is a large number of firms of somewhat similar size a sampling technique has been used. Among the firms which have been canvassed there is always a certain number which do not reply, whose replies are received too late,[103] or whose replies are not usable because of inconsistencies between them and previous returns[104] or because of other reasons. In addition there are frequently a number of new firms which are not covered. Although the Dominion Bureau of Statistics endeavors to keep its mailing list of industrial establishments as nearly up to date as possible, some companies being formed may not be covered through the survey technique in the first year of their existence, particularly if they have not as yet commenced continuing business operations even though they are making capital expenditures.

The allowance for companies of the first two types is made on the basis of their gross value of production (or a corresponding measure of their annual business operations). In the case of manufacturing firms having an annual production of less than $100,000, the estimated results are compared with the results of a test 3 per cent sample survey, and if no significant divergencies are indicated

[103] The cut-off date for year-end surveys is usually the middle of January and for midyear surveys the middle of June. These dates must be adhered to if the final releases are not to be unduly delayed. In the case of some large firms whose returns are essential if industrial totals are not to be seriously distorted and whose returns are delayed, the follow-up procedure may include personal interviews, telephone calls, or telegrams to assure a speedy reply.

[104] In such cases, if there is time between the cut-off date and the time the completed questionnaire is received, a follow-up letter is usually dispatched asking for clarification or a revised return.

the estimated data are used. A separate allowance is made for capital outlay of new firms not covered, based mainly on information about the changing rate of new-company formation.

3. Capital expenditures not covered. These involve, in the main, capital items charged to operating expenses. A special allowance is made for this item on an industry basis in preparing the final estimates of investment intentions. The allowances are shown separately in the tables covering investment intentions by industry.[105]

These independent estimates are usually less satisfactory than the results obtained from business by direct-survey techniques, because they are based mainly on bits and pieces of information. However, in Canada these estimates cover a comparatively small proportion of business investment intentions: in 1951, 27 per cent of the estimated new investment of all business sectors covered by direct-survey method and 21 per cent of all business sectors, including in addition to the above group agriculture, fishing, and the three small sectors mentioned earlier under 1. (For further details see Appendix A.)

4. Statistical technique. In a country such as Canada, where provincial governments have a fairly wide sphere of responsibility and where the industrial structure of the economy varies greatly from province to province, it has been found desirable to present investment statistics in as much detail as possible, including both a provincial and a major-city breakdown. This involves, from a statistical viewpoint, preparing investment estimates separately for each province, then adding them together to arrive at a national total for each industry. The procedure requires much lengthier computations than would be necessary if only national totals were required. In addition provincial estimates are for a number of reasons subject to a wider margin of error than are estimates prepared on a national basis. (a) In provinces where industry is generally on a small scale it has not been found practical to survey more than a small proportion of the firms; thus in these provinces the survey coverage is much smaller than in the more industrialized provinces. (b) It is difficult to ensure that an approximately correct allowance has been made for nonrespondents. In the smaller provinces, where single firms in a locality or industry are of considerable importance, this may lead to a substantial margin of error. (c) The most desirable data available for making estimates for those sectors of industry not

[105] See, for example, Department of Trade and Commerce, *Private and Public Investment in Canada, Outlook 1951*, pp. 15-17.

surveyed directly are not always on a provincial basis, and it has been necessary to base estimates on less satisfactory data. While the procedure used does not provide the same degree of canceling out of over- and underestimates on an industrial basis as would be the case if only national totals were required, it does, through providing a greater knowledge of industry within individual provinces, make possible better judgment in regard to the unsurveyed sectors of the economy. Thus the national totals computed in this way may not differ greatly from those that would be arrived at by computation on an industry basis only.[106]

8. Comparison of Canadian and United States Investment-Intention Surveys

In the course of the preceding appraisal references have been made to a number of similarities and dissimilarities between Canadian and United States investment-intentions surveys. In this section the quantitative evidence is assembled and the conclusions are summarized.

A number of difficulties are encountered in any attempt to compare the results of surveys of investment intentions and estimated actual capital expenditures available in the United States with those assembled in this report for Canada. Such difficulties include the following: (a) In the comparison of planned and actual aggregate investment for the United States, the estimates of actual investment are based on somewhat larger samples than the estimates of planned investment. In Canada the comparison is made for estimates based on identical samples, and there is the further difference that the actual expenditure figures used are preliminary estimates made toward the end of the year to which the estimates apply. (b) The different compositions of the investment programs mar somewhat the comparability of the relative differences between intentions and realization. For example, machinery and equipment purchases are of greater importance in the United States than in Canada[107] as a factor in investment. United States reports of planned machinery

[106] For reference to the error likely to arise from the use of sampling techniques at midyear, and related information, see section 2.

[107] Of gross private domestic investment (excluding housing and inventory change) as per the national accounts, machinery and equipment purchases accounted for 72 per cent of the total in the United States in 1950 as against 58 per cent in Canada. United States data are from Department of Commerce, *Survey of Current Business, National Income Supplement*, 1951; Canadian data from Dominion Bureau of Statistics, *National Accounts Income and Expenditure 1926-1950* (December 1951), p. 27.

and equipment purchases are likely to be closer to realization than Canadian estimates, for reasons elaborated later. Thus the different compositions of investment in the two countries have a bearing on the comparability of the results of investment-intentions surveys. (c) Canadian investment-intentions surveys on an annual basis have been in continuing operation since 1945, United States surveys on a quarterly basis since 1947. Thus by 1947 Canadian surveys had overcome a number of initial technical difficulties which every new survey runs into and which the United States faced in 1947.

Therefore, in assessing the results of United States and Canadian investment-intentions surveys greater emphasis should be placed on the reasons why the overall results differ, rather than on minor statistical variations. Such an appraisal is more rewarding, since available data allow comparisons only in approximate terms, and in any event the results were obtained through the use of somewhat varying techniques and are a reflection of the substantial differences in the industrial structure and economic development of the two countries.

With these qualifications in mind, roughly comparable data for the years 1947 to 1951 are summarized in table 19 (see also chart 12). In three of the five years United States investment intentions

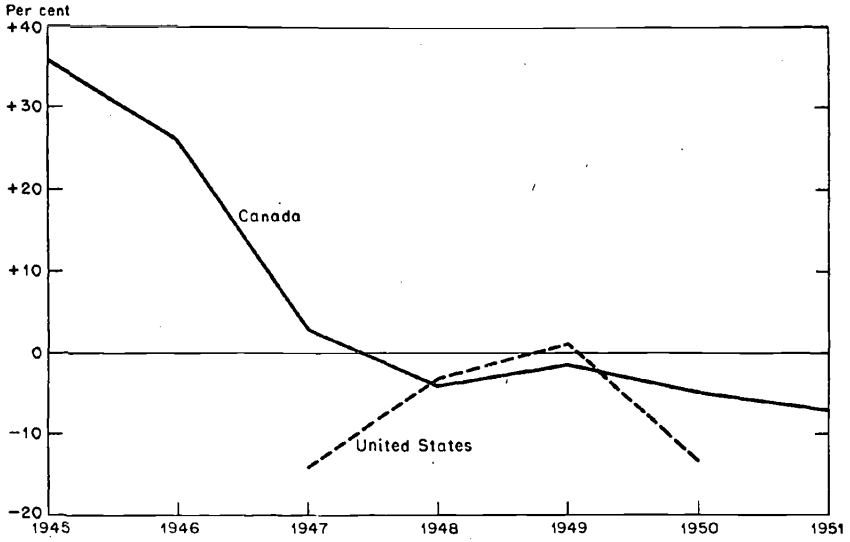


Chart 12. Percentage Difference between Business Investment Realization and Intentions, Canada and United States, 1945-1951

TABLE 19

Business Investment Intentions and Realization, United States and Canada, 1947-1951

Year	Industry	United States: Intentions (millions of dollars)	United States: Realization (millions of dollars)	Percentage Difference between Realization and Intentions: United States	Percentage Difference between Realization and Intentions: Canada
1947	Manufacturing	6,170	7,460	−17.3	−5.1
	Mining	610	690	−11.6	−6.0
	Railroads	1,000	910	+9.9	+93.4
	Other transportation	[a]	[a]	[a]	−1.2
	Electric and gas utilities	1,690	1,900	−11.1	−2.4
	Commercial and miscellaneous[b]	4,420	5,220	−15.3	−5.3
	Total	13,890	16,180	−14.2	+3.0
1948	Manufacturing	7,760	8,340	−7.0	−1.8
	Mining	690	800	−13.8	−2.5
	Railroads	1,530	1,320	+15.9	−17.0
	Other transportation	780	700	+11.4	0.0
	Electric and gas utilities	2,300	2,680	−14.2	−9.0
	Commercial and miscellaneous[b]	5,560	5,400	+3.0	−1.2
	Total	18,610	19,230	−3.2	−4.0
1949	Manufacturing	7,240	7,250	−0.1	+1.4
	Mining	820	740	+10.8	−2.4
	Railroads	1,450	1,350	+7.4	+21.5
	Other transportation	650	520	+25.0	0.0
	Electric and gas utilities	3,130	3,140	−0.3	−12.7
	Commercial and miscellaneous[b]	5,010	5,120	−2.1	−4.7
	Total	18,310	18,120	+1.0	−1.5
1950	Manufacturing	6,740	8,220	−18.0	−4.4
	Mining	650	680	−4.6	+6.0
	Railroads	930	1,140	−18.4	+24.0
	Other transportation	350	440	−20.5	−17.9
	Electric and gas utilities	2,940	3,170	−7.3	−11.6
	Commercial and miscellaneous[b]	4,480	4,920	−8.9	−8.6
	Total	16,090	18,560	−13.3	−4.9
1951	Manufacturing	11,920	12,830	−7.1	−15.5
	Mining	890	870	+2.3	−6.8
	Railroads	1,520	1,580	−3.8	+19.2
	Other transportation	620	520	+19.2	−10.5
	Electric and gas utilities	3,540	3,680	−3.8	−4.0
	Commercial and miscellaneous[b]	5,410	5,360	+0.9	−4.6
	Total	23,900	24,830[d]	−3.7[c]	−7.1[d]

[a] Included in the commercial and miscellaneous group.

[b] Covers trade, service, communications, construction, and finance.

[c] Estimates for the first half of 1951 are based on actual expenditures reported, and for the second half of 1951 are based on anticipated capital expenditures of business as reported in late July and during August. Thus this set of data comes close in timing to the results obtained from the Canadian mid-1951 survey.

[d] Midyear survey.

Sources: United States data are from *Survey of Current Business* (U.S. Department of Commerce), December 1950 and April 1951, and *Securities and Exchange Commission Statistical Series*, Release No. 998, March 27, 1951, and Release No. 1035, September 21, 1951. Canadian data are from table 6.

come closer to realization than is the case for Canadian business capital expenditure plans. In 1947 and 1950 the Canadian surveys show a smaller margin of difference.

As to 1947, the newness of the United States survey was a contributing factor to the greater margin.[108] In Canada the 1947 survey was the third of its kind. In 1950, industrial expansion in the United States was picking up before the Korean incident, but this process was rapidly accelerated after the middle of the year. In Canada the speed-up in industrial expansion followed that of the United States and it became more notable in 1951, when Canadian investment intentions appeared to have underestimated actual capital expenditures to a considerably greater extent than corresponding United States intentions.

In 1948 and 1949, United States surveys are somewhat closer to the mark than Canadian surveys, but the differences are small. The closeness of the results for these two years must be gratifying to those concerned with conducting the surveys in both countries. But perhaps the most notable feature of the surveys in these two years is that in the United States they reflected correctly a turning point in economic conditions in that country, even though the annual decline in business capital expenditures was small. Investment intentions for 1949 suggested capital outlay of 5 per cent below 1948, which in actual fact turned out to be 6 per cent below. In Canada, where recessionary influences prevailing in the United States were felt, but where forces of long-term expansion were strong enough to offset declines in some sectors, the investment-intentions survey as a whole did not have to stand the test its American counterpart faced successfully. Nevertheless, data on investment intentions of some industries supported the experience in the United States (see section 3).

In 1950, in both Canada and the United States, the margin between expectation and execution is greater than in the preceding two years. Events following the aggression in Korea have been given as one of the major factors in the changing investment situation. Another was the continuation of expansion which had been interrupted by recessionary influences dominating American economic thinking for about a year, beginning in the fall of 1948. The latter

[108] There were also other reasons: "In 1947, this result may be explainable in part by the newness of the survey and in part by an unanticipated easing of supplies and elimination of restrictions on nonresidential construction." Friend and Bronfenbrenner, *op.cit.*, p. 12.

factor was probably the more important in causing differences between investment intentions and realization in the United States to be greater than in Canada, because in Canada capital expenditures had not experienced a drop in 1949 and expansion continued at a more even rate. Another explanation might be that the United States government, once a decision had been taken to speed up armaments considerably, could proceed reasonably quickly to place initial orders and get the required production facilities into operation. In Canada, where the defense production potential considerably exceeds national requirements, negotiations with the United States, the United Kingdom, and other NATO countries were required before an industrial mobilization that fitted into an international framework could go into operation. Thus industrial mobilization in Canada would of necessity lag behind that of the United States if both countries proceeded from the same starting point.[109]

A consideration of different industries reveals that Canadian manufacturing firms appear to have estimated more closely their actual capital expenditures in three out of five years, with United States manufacturing enterprises scoring better in two years, 1949 and 1951 (see table 19). One of the reasons for the greater volatility of capital expenditure plans of American manufacturing firms would be that country's world leadership in technology. The implementation of new discoveries, processes, and techniques requires a continuous review of capital expenditure programs, at times in the aggregate, at times in terms of the priority attached to specific programs. Canadian manufacturing firms have benefited greatly from research and experimentation conducted in the United States, and they follow United States firms closely in the adoption of new production techniques. This time lag enables Canadian firms to estimate their costs a bit more closely, for they can draw on American experience. Interchange of industrial information is further facilitated by the fact that in Canada a large number of manufacturing companies, particularly those of an engineering type, are American branch plants or are controlled by American interests.

The experience of United States surveys of capital expenditure intentions as reported by the railroads seems to be similar to that obtained in Canada. In four of the five years the differences between investment intentions by United States railroads are rather

[109] The situation was different in World War II, when Canada was engaged in military operations from the outset, while the United States became involved at a later date.

large, the only exception being 1951. For Canada significant differences are indicated for all five years.

In mining—where expansion in Canada is proceeding at about twice the rate obtaining in the United States, in relation to total industrial investment[110]—Canadian surveys of capital expenditure intentions seem to have brought somewhat closer results from 1947 to 1949 than those of the United States, with the situation reversed in 1950 and 1951. The record of other industries varies greatly from year to year (see table 19 and chart 13).

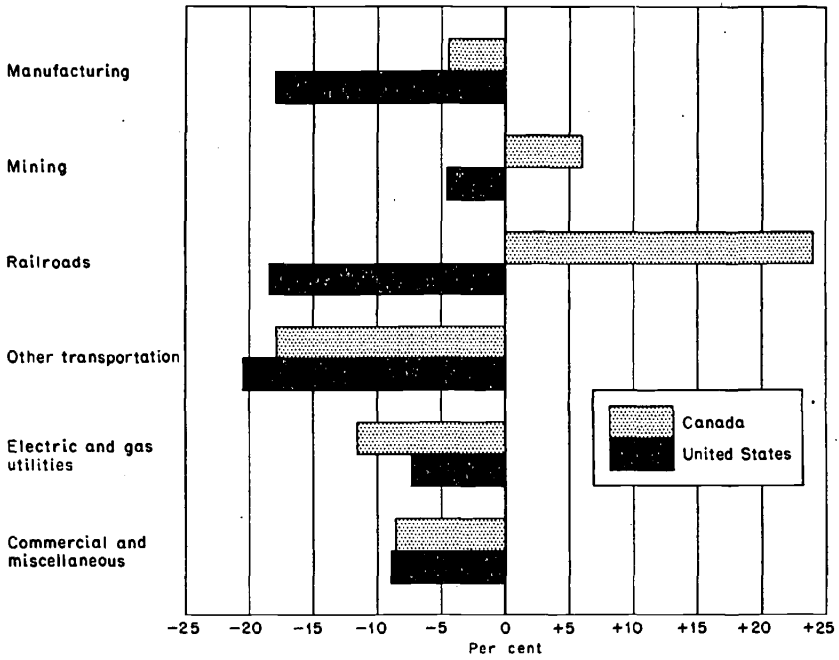


Chart 13. Percentage Difference between Business Investment Realization and Intentions, by Industry, Canada and United States, 1950

There seems to be some evidence that in the United States anticipated capital outlays reflect to a considerable extent a planned physical volume of investment valued at prevailing prices. "On a quarterly basis, businessmen fairly consistently overestimated their

[110] In 1950 capital expenditures in mining comprised 7.7 per cent of total industrial investment in Canada and 3.6 per cent in the United States. Industrial investment is here defined as the sum total of capital outlay by the industries covered by the Securities and Exchange Commission and Department of Commerce surveys.

outlays during the few periods in which prices declined and generally underestimated their outlays in other periods. It is quite possible, therefore, that anticipated outlays to a considerable extent reflect a planned physical volume of investment valued at prevailing prices, and hence do not sufficiently take account of price factors."[111]

In order that we may examine this thesis further, projected capital expenditures have been adjusted for price changes,[112] assuming that business firms reporting capital expenditures were basing their estimates for the next year on prices prevailing at the end of the current year. Table 20 therefore assembles data on the percentage differences

TABLE 20

Percentage Differences between Business Investment Realization and Intentions[a] Assumed in Current Prices,[b] United States, 1947-1950

Year	*Construction*	*Machinery and Equipment*	*Total*
1947	−1.4	−12.9	−9.6
1948	−2.0	−0.8	−1.2
1949	+4.7	−3.3	−1.1
1950	−16.7	−5.1	−8.3

[a] Comparable Canadian data are shown in table 4.

[b] Current prices are taken as the average price prevailing during the last three months preceding the year to which intentions apply.

Source: See sources cited for table 19 and footnote 112.

between business investment intentions, adjusted for price changes between the last quarter of the year and the average for the subsequent year, and realization of investment. These percentages correspond to those indicated for Canada in table 4.

In three years the percentage differences of the adjusted data were smaller than those of the unadjusted data. In 1949 the difference of the adjusted data was about minus 1 per cent, compared with plus 1 per cent for the unadjusted. In Canada the differences between ad-

[111] Friend and Bronfenbrenner, *op.cit.*, p. 13.

[112] Adjustment for price changes on an annual basis was made by using the implicit price deflators for new construction and for producers' durable equipment appearing in U.S. Department of Commerce, *Survey of Current Business, National Income Supplement*, 1951. Adjustments on a quarterly basis were made by using the quarterly price trend shown for construction in the composite construction cost index of the Department of Commerce adjusted for a difference in the annual index. In the case of machinery and equipment the quarterly cost index was established by combining hourly earnings in the primary metals industries with the wholesale price index of metals and metal products and again adjusting for differences in the annual index.

justed and unadjusted figures were greater in the first two years and smaller in the last two years. The explanation offered earlier was that the Canadian allowance for price increases appears to be made in periods of significant price rises, with little or no allowance being made in times of comparatively minor price movements. In the United States the feeling seems to be—and in some measure the data appear to support this—that American industry, in the past at least, has been thinking more in terms of physical expansion and has therefore expressed its investment intentions more frequently in terms of current than in terms of future prices. This is a phase that would bear further investigation.

The points which the United States and Canadian surveys of business investment intentions seem to have in common can be summarized as follows:

1. After a period of experimentation the quality of surveys of capital expenditure intentions has improved in both Canada and the United States.

2. The American surveys have stood the test of a downturn of business investment as a whole, the Canadian survey the test of a downturn in a major sector, manufacturing.

3. Business in the United States has on the whole been making insufficient allowance for price increases of capital goods in estimating prospective investment outlay. This experience is shared by the Canadian survey, particularly in recent years.

4. In some industries in which there are similarities in capital expenditure planning, differences between intentions and realization may also be of a similar order, as, for example, in the case of railroads.

5. In both countries large companies appeared to be in a better position than medium-sized and small companies to estimate their capital expenditures in advance. Wide differences between investment intentions and realization are most likely when small amounts of capital outlay are involved, but such differences affect aggregate data only in a minor way, with overstatements largely offset by understatements.

6. In examining the reasons why individual companies may alter investment plans, surveys in both countries indicate that these reasons will vary as economic conditions and prospects change. While in one year the sales outlook may be the principal factor, in another the plant and equipment supply situation and costs may be of major importance. There are not at present in either country sufficient

observations to establish all the reasons which would explain differences between investment intentions and realization over the various phases of the business cycle.

Major differences between United States and Canadian surveys include the following:

1. The percentage variations between business investment intentions and realization in the United States are smaller than corresponding Canadian variations in some years, with the situation being reversed in other years. Among the reasons in part explaining these differences might be the preponderance of large firms in the United States. Both American and Canadian experience shows that large firms are better equipped than small firms to anticipate capital expenditures. Other reasons might include the fact that United States reaction to investment opportunities will in many cases be much quicker than that of Canadian business. Thus a bulking of new projects in one year in the United States may possibly be experienced in Canada in a subsequent year. Still other reasons might be the greater volatility in formulating investment decisions in the United States, and the fact that greater reliance is placed in the United States than in Canada on sampling techniques in undertaking investment-intentions surveys.

2. In Canada estimates of projected construction expenditures seem to have been more accurate than estimates of machinery and equipment purchases. The shortness of the construction season in Canada necessitates planning well in advance if an early start is to be made. In the United States advance planning is not so urgent, and construction plans may not be so firm at the time the intentions are stated, with the result that major cancellations or additions at a later date are more likely.[113] In the case of machinery and equipment the intentions of Canadian businessmen may be less accurate because of their substantial reliance on foreign sources; and the assessment of the supply and price situations of the latter is a more difficult task than the appraisal of the domestic situation.

3. Projected capital outlay as reported by business in the United States is said to reflect largely volume estimates, expressed in current prices. In Canada the tentative conclusion is that investment intentions in periods of rapidly rising prices are expressed in terms

[113] While, on the whole, purchase intentions of machinery and equipment come closer to realization in the United States than construction intentions, the situation differs depending on the size of the construction project involved. See the paper by Irwin Friend and Jean Bronfenbrenner in this volume.

of future prices—although at times the allowance for price rises may not fully reflect the rise that actually takes place. In times of moderate price movement Canadian practice is more akin to United States practice.

4. As in the aggregate, so in some of the major industries Canadian investment-intentions surveys have come closer to actual realization in some years, with United States surveys being closer in other years. In the field of manufacturing the reasons for some of the variations between the two countries might include the greater degree of experimentation and research carried on in the United States and the adoption of innovations in that country frequently as rapidly as these become available and economically feasible. In Canada, with some exceptions, manufacturing industries follow the American lead in technology. Thus Canadian manufacturing industries can frequently draw on United States experience in appraising the cost of new projects and in a number of cases make use of American engineering assistance.

5. The Canadian investment-intentions surveys are conducted on an establishment basis; the American data are obtained on a company basis. The United States method has the advantage of making it possible to relate profit, asset, and other corporate financial statistics to capital expenditure data. The Canadian method has the advantage of allowing regional and local capital expenditure estimates to be made and of relating plant expansion to the area where it takes place rather than to the head office of the company. This point is of particular importance in Canada, where head offices of companies are largely concentrated in two major centers, Montreal and Toronto. Further, the Canadian technique facilitates an improved industrial classification, since in the case of companies conducting a variety of businesses it becomes possible to classify capital expenditures on the basis of the purpose of the plant rather than the predominating business of the controlling company.

9. Investment intentions and realization of home-builders, institutions, and governments

In most countries surveys of investment intentions are concerned with the business sector. In Canada three other sectors are also covered: home-builders, institutions, and governments. In this section the results of the latter types of survey are briefly reviewed.

Between 1945 and 1947 the capital expenditure intentions of only the nongovernment sector were surveyed. However, in the docu-

ments published, estimates of residential investment and of capital expenditures by institutions were included, based mainly on data and information obtained from the field and an appraisal of the supply situation. The improvement in the supply situation and the large differences between the independent estimate of "intentions" and realization as shown in table 21 led to the undertaking of direct surveys of institutional and government investment in 1948 and of housing in 1949.[114]

TABLE 21

Investment Intentions and Realization by Home-Builders, Institutions, and Government Departments, Canada, 1947-1951

Year and Sector	Intentions (millions of dollars)	Realization (millions of dollars)		Percentage Difference between Realization and Intentions	
		Preliminary Estimate[a]	Revised Estimate[b]	Preliminary Estimate	Revised Estimate
1947 Housing	447	504	540	−23.5	−28.9
Institutions		80	89		
Government departments	[c]	295	291	[c]	[c]
Total	[c]	879	920	[c]	[c]
1948 Housing	599	682	668	−12.2	−10.3
Institutions	145	128	145	+13.3	0.0
Government departments	318	389	393	−18.3	−19.1
Total	1,062	1,199	1,206	−11.4	−11.9
1949 Housing	741	784	776	−5.5	−4.5
Institutions	200	184	190	+8.7	+5.3
Government departments	409	420	406	−2.6	+0.7
Total	1,350	1,388	1,372	−2.7	−1.6
1950 Housing	785	813	845	−3.4	−7.1
Institutions	232	210	212	+10.5	+9.4
Government departments	509	475	473	+7.2	+7.6
Total	1,526	1,498	1,530	+1.9	−0.3
1951 Housing	827	827[d]	827[d]	0.0	0.0
Institutions	270	267[d]	267[d]	+1.1	+1.1
Government departments	596	612[d]	612[d]	−2.6	−2.6
Total	1,693	1,706[d]	1,706[d]	−0.8[e]	−0.8[e]

[a] Prior to adjustments in coverage and in estimating technique.
[b] Full-coverage basis.
[c] Not available.
[d] Midyear survey.
[e] Too great significance should not be attached to this small percentage variation, because information on the likely realization in the above three sectors is usually very incomplete at midyear.
Source: Canadian government data.

[114] For a description of techniques see section B 9.

Estimates of investment intentions by home-builders, institutions, and governments for 1948 differed by a comparatively wide margin from preliminary estimates of actual capital expenditures. Since 1949 this margin has narrowed considerably. In 1949 and 1950 the differences between realization and intentions were of the order of 3 and 2 per cent respectively (see chart 14). The data for 1951 are too tentative to allow a judgment at this time.

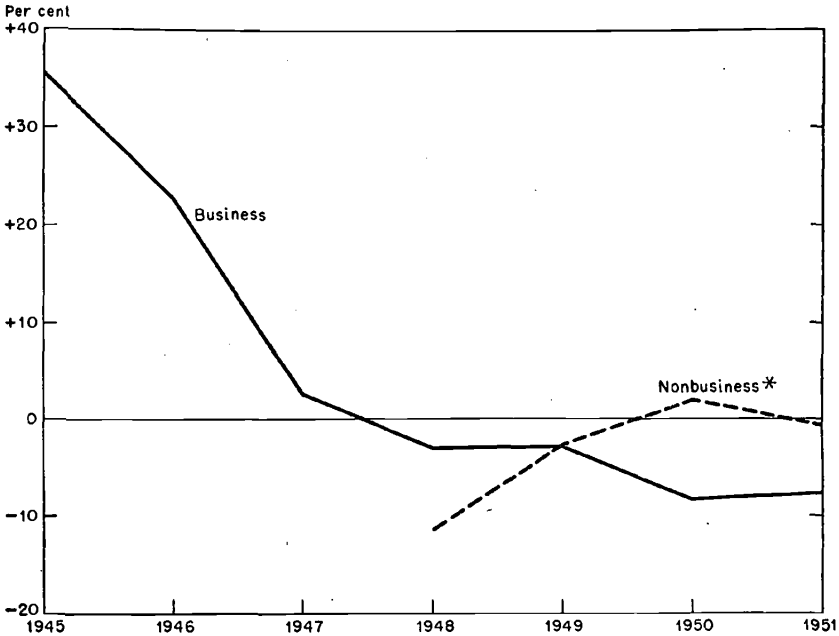


Chart 14. Percentage Difference between Investment Realization and Intentions, Business and Nonbusiness, Canada, 1945-1951

Substantial offsets occurred within some of the sectors. For example, a decline in the number of expected housing completions in 1950 was offset by an unanticipated increase in the number of starts and by rising costs, which at the beginning of the year had been expected to remain fairly stable. The housing pattern of 1950 was also influenced by changes in housing legislation.[115]

[115] The data on preliminary estimates of residential investment for 1949 and prospective expenditures for 1950 are about the same (see table 21). But the surveys of anticipated outlay for 1950 indicated a moderate decline in the number of new starts and a small increase in the number of completions. As a result of revisions in housing legislation toward the end of 1949, including a

In the government sector some of the differences encountered in making estimates of capital expenditures for the year following are due to the timing of the survey. Returns for the year-end survey are required not later than early in January, frequently before federal and provincial legislatures or city councils have voted the necessary funds. The information obtained on prospective capital outlay by government departments therefore reflects in the main the best judgment of the responsible departmental head, or officer delegated by him, of what the particular department is likely to spend in the coming year. The appraisal is based on the expectation that the funds will be voted by the respective legislatures or approved by the responsible governing authority. Capital expenditures by publicly owned Crown companies, utilities, and other government agencies operating on a business basis are covered by business investment-intentions surveys, and those by publicly owned institutions (hospitals, schools, and so forth), by institutional surveys, so that information shown under government covers a residual, mainly capital expenditures by government departments operating under a vote system.

On the whole, one of the major reasons for the discrepancies between investment intentions and realization among the three sectors reviewed here has been the consistent underestimate for price increases that have taken place in the last few years.

10. Investment intentions and realization of all private and public sectors

What have been the results of annual business investment-intentions and similar surveys of capital expenditures in anticipating the total investment that is made in Canada by all sectors of the economy, including private individuals and firms and public agencies? Since the differences between investment intentions and preliminary estimates of realization have been somewhat smaller in the home-building, institutional, and government sectors in the last few years, this has had the effect of reducing even further the margin indicated for the business sector, as shown in table 22 (see also chart 15).

substantial lowering of down-payment requirements, starts rose to a larger number than had been expected for 1950, while completions did not reach as high a level as would have been possible if the house-building industry had been working at full capacity. Also, a balanced supply and demand situation at the beginning of 1950 suggested comparative price stability. But prices rose notably in the second half of the year, subsequent to developments in Korea.

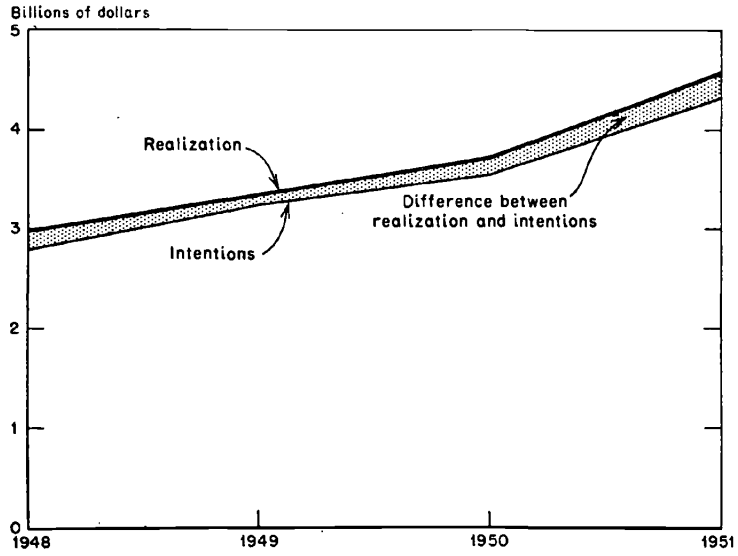


Chart 15. Total Private and Public Investment Intentions and Realization, Canada, 1948-1951

The year 1948 is an exception because in that year investment by the nonbusiness sector was substantially underestimated.

If one were to generalize about the experience of Canadian capital expenditure surveys of all types one might say that after a period of experimentation which lasted three or four years the survey tech-

TABLE 22

Investment Intentions and Realization, Total Private and Public, and Business, Canada, 1948-1951

Year	Intentions (millions of dollars)	Realization (millions of dollars)		Percentage Difference between Realization and Intentions: Total Private and Public Investment		Percentage Difference between Realization and Intentions: Business Investment, Preliminary Estimate
		Preliminary Estimate	Revised Estimate[a]	Preliminary Estimate	Revised Estimate[a]	
1948	2,793	2,985	3,175	—6.4	—12.0	—3.1
1949	3,253	3,348	3,502	—2.8	—7.1	—2.9
1950	3,552	3,710	3,823	—4.3	—7.1	—8.4
1951	4,328	4,561[b]	4,561[b]	—5.1	—5.1	—7.7

[a] Full-coverage basis.
[b] Midyear survey.
Source: Canadian government data.

niques have been sufficiently developed to be able, under foreseeable circumstances, to come within 5 to 10 per cent of the amount of actual capital expenditures by all sectors of the economy. The emphasis is on the word "foreseeable," because there are major economic, political, and natural events that should be classed as "unforeseeable." Such events might include serious deterioration of international political or economic relations without military conflict, for example, a trade war; local wars which lead to general rearmament, for example, events following the aggression in Korea; the outbreak of a major war; natural emergencies, for example, floods, drought, and earthquakes; political upheaval, for example, internal strife and nonconstitutional change of government; and financial disasters such as the closing of banks. The time has been too short to establish whether surveys will stand the test of a major depression such as followed 1929. There is some indication that the surveys will be able to indicate a decline in capital expenditures that is in part engendered by and in part augments recessionary influences developing in the economy or transmitted from abroad.

Appendix A

Coverage of Investment-Intentions Surveys

Table A-1 summarizes the coverage of business firms and other groups which has been achieved in the surveys of investment intentions in Canada since 1945. The sectors listed indicate the details of the industrial classification contained currently in the investment White Papers. The percentage figures represent the ratio of capital expenditures planned, as reported by firms and other respondents, to total investment intentions. Dots indicate that the sector was not covered by means of a direct canvass in that year. It will be noted that in a number of cases dots are shown for earlier years and percentage figures for later years, indicating that surveys of these sectors have been undertaken after the inception of the forecasts. In only four cases are the dots continuous, denoting that no direct surveys have been undertaken in these fields. In manufacturing, the Standard Industrial Classification, using seventeen industrial groups, has been employed since 1949. In earlier years an industrial classification composed of nine groups was used. Between 1945 and 1947, manufacturing industries were surveyed on a similar classification basis, but coverage figures are available only

TABLE A-1

Coverage of Investment-Intentions Surveys,[a] Canada, 1945-1951[b]
(*per cent*)

Sector	*1945*	*1947*	*1948*	*1949*	*1950*	*195*
Agriculture and fishing	....	....	....	....	....	...
Forestry	....	26.0	64.0	60.3	57.7	40.
Mining, quarrying, and oil wells	100.0	97.0	80.6	67.2	71.4	69.
Manufacturing						
Food and beverages				83.9	74.1	69.
Tobacco and tobacco products			83.9	98.4	95.6	93.
Rubber products				74.0	88.5	88.
Leather products				87.4	75.5	79.
Textiles and textile products			84.9	93.5	85.7	89.
Clothing				77.5	66.1	73.
Wood products				66.3	63.6	62.
Paper products			96.8	94.6	74.8	89.
Printing, publishing, and allied industries				79.0	72.9	73.
Iron and steel products			85.1	88.7	85.5	84.
Transportation equipment				96.9	86.2	87.
Nonferrous metal products			85.1	90.6	65.1	78.
Electrical apparatus and supplies				92.2	87.9	89.
Nonmetallic mineral products			83.8	75.4	63.8	79.
Products of petroleum and coal				95.6	96.7	85.
Chemical products			66.4	88.6	80.7	84.
Miscellaneous			44.9	80.8	63.3	77.
Total manufacturing	61.4[c]	79.3[c]	81.1	81.9	77.6	76.
Utilities						
Central electric stations	97.0	80.0	87.5	86.3	79.3	85.
Steam railways and telegraphs	....	100.0	97.9	100.0	97.9	100.
Electric railways	....	90.0	94.3	82.0	98.1	88.
Water transport	....	87.0	95.5	85.9	68.6	68.
Motor carriers	....	61.0	47.8	59.3	51.2	58.
Grain elevators	....	....	....	89.3	84.0	80.
Telephones	99.5	98.0	86.4	95.7	95.0	94.
Broadcasting	....	98.0	74.6	84.1	77.4	94.
Municipal waterworks	....	....	....	....	....	96.
Other utilities	....	91.8	70.3	89.4	84.1	72.
Total utilities	29.8	92.4[c]	88.2[c]	91.3	87.9	94.
Construction industry	....	34.0	33.6	39.9	33.5	24.
Housing	....	....	....	63.0	65.0	77.
Trade						
Wholesale (proper)	....	46.0	18.1	51.4	43.0	37.
Chain stores	....	77.0	75.7	77.8	70.9	75.
Independent stores	....	....	....	....	....	...
Department stores	....	80.0	85.5	86.3	45.8	55.
Automotive trade	....	....	....	57.2	67.2	88.
Total trade	....	25.0[c]	21.6[c]	33.2	33.2	27.
Finance						
Banks	....	95.0	94.6	100.0	100.0	100.
Insurance, trust, and loan companies	....	....	75.2	80.5	91.4	99.
Other financial	....	....	....	....	....	...
Total finance	....	41.7[c]	41.6	35.1	47.6	56.

TABLE A-1 (continued)

Sector	*1945*	*1947*	*1948*	*1949*	*1950*	*1951*
Commercial services						
Laundries and dry cleaners	....	46.0	63.6	49.5	61.5	41.2
Theaters	....	64.0	78.6	81.0	60.8	64.7
Hotels	....	....	24.3	20.5	22.2	31.7
Other commercial services	....	....	....	....	....	....
Total commercial services	....	8.0[c]	11.0	13.6	13.0	11.8
Institutional services						
Churches	....	....	44.2	78.0	54.2	77.1
Universities	....	....	75.2	75.4	89.2	87.0
Schools	....	....	81.5	61.1	75.2	93.3
Hospitals	....	....	68.8	65.6	62.1	62.1
Total institutional services	....	....	71.2	67.2	67.8	80.0
Government departments	....	....	79.4	85.5	86.6	88.7
Coverage for business investment						
Groups covered by direct survey[d]	72.6	83.5	80.6	82.0	79.1	81.4
All groups[e]	38.3	62.2	59.8	63.9	62.4	64.1
Groups covered by direct survey as percentage of all groups[e]	52.7	74.5	74.2	77.9	78.8	78.8
Coverage for all private and public investment						
Groups covered by direct survey[d]	72.6	83.5	77.4	73.4	76.0	81.1
All groups[e]	23.3	41.4	51.7	60.9	64.5	70.1
Groups covered by direct survey as percentage of all groups[f]	32.1	49.9	64.8	83.0	85.0	86.5

[a] Coverage is calculated by expressing investment intentions of reporting firms as a percentage of total estimated anticipated capital expenditures. This is the case in all years except 1947, when gross value of production (or its equivalent) was used for individual groups.

[b] Attempts have been made to obtain coverage data that are as consistent as possible over the period. Some difficulties still remain. In 1947 and 1948 particularly, the figures shown are likely to be higher than would be the case if the investment estimates had been made by the methods used in more recent years. This is the result of several factors, principally the addition of estimates in recent years for new firms and the improvement of sampling techniques in some sectors by stratifying by size groups. These added smaller firms and deleted some medium-sized firms.

[c] Figures shown differ from those published in the annual reports since investment totals have been increased to allow for new groups for which no estimates were made in this year. This facilitates year to year comparisons.

[d] This states *reported* intentions as a percentage of total estimated intentions of all groups covered by *direct* survey.

[e] This states *reported* intentions as a percentage of total estimated intentions of groups *covered* by direct survey and groups *not covered* by direct survey.

[f] This states total *estimated* intentions of groups covered by direct surveys as a percentage of total estimated intentions of groups *covered* by direct surveys and groups *not covered* by direct surveys. The total investment figures used in calculating these percentages include the totals published in the annual reports and estimates made for groups which were omitted prior to 1949. Comparable data for 1946 are not available in detail. Comparable figures for "groups covered by direct survey as percentage of all groups" would be 66.8 per cent for business investment and 44.7 per cent for all private and public investment.

Source: Canadian government data.

for the group as a whole. In housing, special surveys are undertaken in cities and towns with populations of 5,000 or over, where usually about three-quarters of total residential construction work is carried out (see section B 9).

In the business sector the coverage is largest in utilities, 94 per cent. They are followed by manufacturing, 77 per cent; mining, quarrying, and oil wells, 70 per cent; finance, 57 per cent; and forestry, 40 per cent. The coverage is smallest for enterprises that involve a large number of establishments making comparatively small capital expenditures: trade, 27 per cent; construction, 25 per cent; and commercial services, 12 per cent.

In the nonbusiness sector the coverage is greatest for government departments, 89 per cent. They are followed by institutions, 80 per cent, and housing, 77 per cent.

For the business sector as a whole there are three ways to express the coverage. In table A-1 the first figure, which refers to the groups covered by direct survey, is 81 per cent. This figure reflects *reported* intentions as a percentage of total estimated intentions of all groups covered by *direct* survey. The second figure, which refers to all groups, is 64 per cent. This figure reflects *reported* intentions as a percentage of total estimated intentions of groups *covered* by direct survey and groups *not covered* by direct survey. The third figure, 79 per cent, relates to groups covered by direct survey as a percentage of all groups. This figure reflects total *estimated* intentions of groups covered by direct survey as a percentage of total estimated intentions of groups *covered* by direct survey and groups *not covered* by direct survey. Corresponding figures for the private and public investment sectors taken together, that is, business, institutions, housing, and governments, are 81, 70, and 87 per cent respectively.

Over the seven-year period, response from firms and other groups has been continuously high. This is indicated by the fact that the response of all groups covered by the direct-survey technique varied between 73 and 84 per cent and is currently over 80 per cent in terms of the amount of capital expenditures planned.

The increasing reliance that has been placed in Canada on direct surveys of investment intentions is indicated by the fact that in 1945, the first year of the survey, only 32 per cent of estimated total anticipated capital expenditures were accounted for by groups covered by direct surveys. This proportion is now up to 87 per cent. The 87 per cent figure indicates also the extent of the more reliable estimates

based on reports from firms, individuals, institutions, and government agencies closely associated with the making of capital expenditures. The remaining 13 per cent, as indicated earlier, is based on more indirect sources of information and is therefore likely to be less close than estimates obtained by the direct-survey technique.

Appendix B

Questionnaires Used in Canadian Investment-Intentions Surveys

MIDYEAR SURVEY FORM

FOR IMMEDIATE ATTENTION

Confidential Keep One Copy

Dominion Bureau of Statistics
Ottawa - Canada

REVISED FORECAST OF REPAIR AND CAPITAL EXPENDITURES, 1951

(Second Estimate - as of May, 1951)

Some months ago you kindly supplied us with a forecast of anticipated repair and capital expenditures in connection with the above-named establishment for the year 1951. Since then your pl may have changed, and in order to maintain an up-to-date record of the investment plans of business, are now asking for a second estimate of these expenditures. Exact data are not required. A review the figures which you gave us earlier and a re-statement in the light of present conditions which wou either confirm or revise your first estimates, is all that is necessary. If there has been any majo revision in your plans for investment in NEW CAPITAL ASSETS, you are asked to outline the reasons for such changes.

This questionnaire is being sent to only a sample group of business establishments. The individual reports will be kept confidential and used only for the purpose of arriving at group total

Please prepare in duplicate, keep one copy for your files and return one copy immediately the Dominion Bureau of Statistics, Ottawa, using the enclosed envelope, which is postage free.

The definitions of the expenditures listed below are the same as those given on the green "Forecast 1951" Schedule, a copy of which we assume you have on file.

		For Departme Use
I. REVISED ESTIMATE OF REPAIR EXPENDITURES, 1951 (whole year)	(Omit Cents)	
(a) Repair expenditures on buildings and other structures.....	$	.....
(b) Repair expenditures on machinery and equipment.....	$	.....
2. REVISED ESTIMATE OF CAPITAL EXPENDITURES, 1951 (whole year)x		
(a) Capital expenditures on new buildings and other structures.....	$	.....
(b) Capital expenditures on new machinery and equipment	$	.....
TOTAL of 1(a), 1(b), 2(a) and 2(b).....	$	

x NOTE: If there is any major change from your previous estimate with respect to either of the CAPITA EXPENDITURES items, 2(a) and 2(b) above, please indicate in the "Remarks" section below, the principal reasons for such changes.

Remarks on changes in anticipated CAPITAL EXPENDITURES on

2(a) New buildings and other structures

.....

.....

2(b) New machinery and equipment

.....

.....

Name, official position and business address of person making this report (.....

Date of this report .....

ID-OF-YEAR SURVEY FORM

Repair and Capital Expenditures, Preliminary Estimate for 1950 and Forecast for 1951, Canadian Industry

(Dominion Bureau of Statistics)

Taken in conformity with the requirements of the Statistics Act, Chap. 45, Statutes of Canada, 1948.

INSTRUCTIONS:—Please prepare in duplicate. Keep one copy for your files and return one copy immediately in the enclosed envelope ie Dominion Bureau of Statistics, Ottawa. If no such expenditures have been made in 1950, and if none are planned for 1951, submit a "nil" rt to enable us to close your file for this survey. Individual reports will be treated as confidential and used only for the purpose of arriving at p totals.

If you operate more than one establishment, a separate report is to be made for each establishment. This statement should include your nditures made not only on the main operations of the establishment, but also on townsites, warehouses, employees' facilities, such as housing, eens, company stores, schools and all other facilities forming a part of the establishment.

If you operate or plan to operate a plant for the production or distribution of electric power for your own use, the expenditures on it should be uded here. If, however, you sell or plan to sell power, a separate report should be made for the power plant.

ıcipal trade or business.....

t of business covered by this report.....

me under which business is carried on (please print).....

ıd office address.....
(Give street and number in cities and large towns)

ocation of works for ch this report is made. { ..... (Street and number) ..... (City, Town or Post Office) (County) (Province)

dress to which we should mail these forms.....

Estimated Repair Expenditures— ort gross repair expenditures, including all material and labour costs. Include value of work done by your own employees, as well as payments to persons de your business. Do not include under Section (1) replacements of capital s; these should be shown in Section (2).	Department use	Preliminary estimate of expenditures made in 1950 (whole year)	Forecast of expenditures likely to be made in 1951
(a) Repair expenditures on buildings and other structures		$	$
(b) Repair expenditures on machinery and equipment		$	$
Estimated Capital Expenditures— ort gross expenditures on new physical assets or facilities of a capital nature in the operation of your business, including additions, replacements, major ations and all items of this nature, with the exception of previously existing lings and other structures, and used machinery and equipment. Include al expenditures met out of receipts from insurance claims for fire and other ge. Take into account the value of work done by your own employees and the cost of installation. Do not deduct any allowance for scrap or trade-in of your old assets. Mining companies should include preliminary develop- and exploration costs here. ***Report construction in the year in which ed out and equipment in the year in which acquired, irrespective of time payment is made.*** Do not include the value of your own re-used rial. Under Part (*a*) show expenditures on all new construction, including buildings types, mine shafts, tracks, roads, transmission lines, blast furnaces, docks, towers, etc. Exclude the value of land purchased but include the cost of land ovements. Exclude expenditures for the purchase of previously existing ings and other structures. Under Part (*b*) show the installed cost of all new machinery and the delivered of movable equipment such as new motor cars, trucks, railway rolling stock, furniture and appliances, etc., whether for your own use or for rent to others. de expenditures on used machinery and equipment.			
(a) Capital expenditures on new buildings and other structures		$	$
(b) Capital expenditures on new machinery and equipment		$	$
Total 1(*a*), 1(*b*), 2(*a*) and 2(*b*)		$	$

ARKS.....

.....

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COMMENT

SERGEI P. DOBROVOLSKY, *Wayne University*

Mr. Firestone's paper contains a brief comment on the possibility that making available information on business and government investment intentions may prove to be a significant factor influencing the realization of these intentions, a factor that investment forecasters can ill afford to ignore. This point has been raised before, and there seems to be little doubt about its general validity. Whether the influence of this factor can be measured with adequate accuracy is, however, a different—and highly debatable—question. This aspect of investment forecasting has received little attention at the present session, and I venture to offer a few comments on it, without attempting, of course, any comprehensive treatment of the subject.

There is first the question whether the mere publication of the data, collected through a survey, will affect individual businessmen's plans, even though the government is not expected to interfere with private investment policies. It seems reasonable to assume that individual entrepreneurs will want to compare their own investment plans with the data on aggregate investment intentions, made available by the survey, and that many of them will revise their original decisions in the light of such a comparison. Just what these revisions will do to the original plans can hardly be determined on an a priori basis. Some entrepreneurs may wish to fall in line with the rate of expansion (or contraction) that is forecast for the entire industry. But there may be others who will try to do better than their competitors in the industry appear to be doing: in an expansion period they will step up their own expansion programs in order to forestall the others and get a bigger share of the growing market; in a contraction period they will intensify their downward adjustment in order to outdo the others in a general economy drive.

If the entrepreneurs motivated by the desire to conform are in the majority, and those motivated by the desire to forestall are in the minority, then the publication of the aggregate data on investment intentions will probably strengthen the chances that these intentions will be realized. But if the opposite is true, the publication of the data will add another factor making for a divergence of realized investment from planned investment.

The situation becomes even more complex if the government, upon the publication of the results of the survey, announces its own decision to take measures affecting the investment trend as revealed

by the survey. The government may interfere with this trend by taking certain restrictive measures (for example, allocating scarce materials) or by changing the rate of its own capital expenditures. In either case these questions arise: How will the business community respond to the announced government policy? and To what extent can this response be forecast at the time the government decision is made? There is a further complication arising from the possibility that if the businessmen know, or at least suspect, that the government is likely to take strong corrective measures after it has analyzed the survey data, they may be hesitant to reveal their complete investment programs when answering the survey questionnaire.

Assume, for instance, that the government finds the rate of intended private investment "too high" and makes it known that it will respond by reducing the rate of public investment in the immediate future. What effect will such an announcement have on private investment plans? Individual entrepreneurs will have to revise their sales and investment programs in the light of the possible effect of the intended contraction of government expenditures. Some firms will doubtless promptly scale down their capital expenditures. But there may be others that will see fit to expand, trying to make use of the manpower and materials which will become available as a result of the government contraction. If most firms contract their expenditures, the aggregate amount of private and public investment may drop to a greater extent than the government had anticipated.

In view of the above, the question may be raised whether government forecasting and planning would not be made more effective by keeping all relevant information confidential with those making policy. It may be argued that such a procedure would result in less deviation by businessmen from their original investment programs. The government would, in effect, be saying to businessmen: "We have surveyed your intentions and have formulated our own policy accordingly. For the time being we are not revealing our forecasts and intended measures, but we ask you to proceed with your programs, leaving it to us to make all the adjustments necessary for the attainment of generally satisfactory economic conditions."

Doubtless this procedure would give the government additional power and would provoke much criticism for this very reason. Business would probably resent such policies on the part of the government as being too paternalistic and undemocratic.[1] In addition diffi-

[1] Secrecy of government financial operations has not, however, been unknown

culties might arise in trying to prevent leakages of information from the agencies concerned with the formulation of government forecasts and the resulting policy decisions. Inaccurate rumors concerning the impending government action might spread and upset the initial business investment intentions to an even greater extent than an official government announcement would.

Everyone would agree that the ideal procedure would be for government and business freely and openly to exchange information and adjust their respective policies so as to achieve the desirable economic goal. The government, under such ideal conditions, could say to business: "Our survey of your investment intentions indicates such and such a trend. We do not find this trend entirely desirable and we therefore recommend that you, the businessmen, make such and such adjustments; we, the government, will also make such and such revisions in our policy. It is our belief that if these adjustments and revisions are made, satisfactory economic conditions will be maintained." The businessmen, who under these conditions would be expected to have full confidence in the government forecasts and policies, would promptly follow these recommendations and adjust their initial plans accordingly. All this, no doubt, would be very harmonious and democratic. But how close can we expect to get to this state of affairs in an economy divided into different pressure groups with conflicting economic objectives?

While complete harmony is unattainable and a certain amount of conflict is inevitable, it seems clear that an economy based primarily on private enterprise cannot function smoothly and efficiently unless conditions conducive to long-range business planning are maintained. The government cannot, of course, be expected always to endorse business investment programs, but when it finds that modifications are required it is preferable that it proceed so as not to destroy the businessmen's confidence in being able to formulate long-range programs and essentially carry them through. Otherwise, private investment is likely to become scanty and erratic, which will tend to upset the economy and, in fact, make further forecasting and planning by the government much more difficult and less effective.

It also seems clear that while efficient government *forecasting* depends in large measure on the ability to foresee businessmen's re-

in the democratic world. The policies of the Exchange Equalization Account in Great Britain, and of the similar agencies in other countries, during the interwar period may be mentioned as one well-known example.

sponses to the announced trends and policies, efficient government *planning* depends largely on how much flexibility the government is allowed in adjusting its program to the latest business responses. The government should be able to adjust its "corrective" measures smoothly and promptly each time a significant shift in private investment intentions is detected.

These remarks are, of course, of a very general nature. Their sole purpose is to draw closer attention to some of the problems arising out of the interdependence of business and government investment planning and the continuous process of revising and adjusting individual business plans according to the anticipated general trend in private and public policies.

ROBERT P. ULIN, *McGraw-Hill Publishing Co.*

I should like to comment on the Canadian experience in investment forecasting first as a record of accomplishment, for the accomplishment has been very great indeed.

Those responsible for the Canadian surveys have achieved a high degree of cooperation from their business community. The completeness of the Canadian sample is striking. If I interpret Firestone's figures correctly, about 11,000 firms replied to the January 1951 survey. This amounted to about two-thirds of those to whom questionnaires were mailed and provided coverage of firms making over 80 per cent of actual capital expenditures. These are very high figures compared with the 2,100 regular respondents in the joint Securities and Exchange Commission–Commerce Department survey, or the considerably smaller number of respondents in the McGraw-Hill survey.

A particularly striking accomplishment is the inclusion of a significant sample of the smaller trade and service establishments, the home-building industry—for which we have never had really satisfactory anticipations in the United States—and institutional construction. For the most part the American technique has been to rely on economic analysis for forecasting all these construction expenditures as a supplement to the data for industry obtained by direct surveys.

I am aware that Canada is a smaller, more closely knit industrial community than the United States and that this has facilitated surveys. But I am still impressed by 11,000 individual replies.

With these preliminary comments, I want to turn to a discussion

of some of the problems raised by both the American and the Canadian surveys which have been particularly prominent in remarks of other speakers. It has been said a number of times in this Conference that businessmen make errors in forecasts of capital expenditures. Actually, we do not have in these surveys forecasts nor do we have errors in forecasts; we have plans and changes in plans.

It has been said that we do not know who fills out these questionnaires or what types of figures they are putting down. Actually, we do in the McGraw-Hill survey—and I think this is also true of the Canadian survey. We have found that the usual officer filling out the questionnaire is the president, vice-president in charge of manufacturing, or controller. Figures that are put down in the case of small companies very often represent guesses, and there is no pretense that they do more than that. However, in the case of large companies they are usually budget figures. I think the Commerce Department is quite right in using the word "budget" on its questionnaire. These budgets are not sacred or rigid. On the contrary, it is usual business practice to regard them as subject to change.

For this reason the midyear check-up is certainly a necessity when an annual survey is taken, as is the case with the Canadian survey, and I am in complete agreement with Firestone's stress on the possibility of discovering changes in plans by such check-ups. It has been clearly established that capital investment plans are flexible enough to be changed easily during the year. In the 1950 McGraw-Hill survey 97 per cent of manufacturing firms indicated that they regularly reviewed their plans during any given year. Two-thirds reviewed plans monthly and almost one-third quarterly. In 40 per cent of the companies the review was made by management officials and in 37 per cent by both management and directors. For this reason we, like the Canadians, rechecked a part of our sample at midyear, in both 1950 and 1951. In each case substantial upward revision in plans was found to have occurred.

At this point I should like to say that I think capital investment plans are considerably more volatile in relation to changes in corporate profits than is indicated by the statistical evidence in the surveys we have discussed. The 1949 decline in profits was not very severe if the fictitious inventory profits and losses for successive quarters are washed out, and it did not last very long. A more substantial and prolonged decline in profits, particularly from the higher levels recently attained, may have more drastic results.

We have also to consider the effect on investment plans of certain temporary phenomena, such as the need for capacity related to defense production, and the granting of certificates of accelerated amortization, which evidently make such investment relatively attractive to businessmen.

My point here is that, in order to forecast the trend of capital investment, we need not only statistical answers about companies' investment plans, but also the answers to a great many qualitative questions. For example, on previous McGraw-Hill surveys we have asked what part of programs is devoted to expansion and what part to modernization. We have asked about the possible effect on investment of a 20 per cent decline in business activity. We have asked what would promote an expansion of investment plans—higher stock prices, lower taxes, increased sales, or accelerated amortization. The value of such questions is illustrated by the fact that accelerated amortization showed up as a favorite means of promoting expansion and that it was, in fact, a key factor in the expansion during 1951.

The answers to such questions can be a tremendous help in making the general analysis necessary to supplement statistics on investment intentions. I am a little surprised that no attempt has been made to secure this type of qualitative information in the Canadian surveys. The high degree of business cooperation in these surveys would indicate to me the likelihood that companies would answer a few qualitative questions, even though these added somewhat to the length of the questionnaire.

At this point I had better conclude my remarks, for I find myself suggesting to Firestone that he tamper with a highly successful operation. Perhaps it is better to let success alone. However, I will say that in the last three McGraw-Hill surveys we have asked a great many of these qualitative questions, and I think it may have actually improved the response. When we send out the results to cooperators—and noncooperators—they are just as interested in *why* industry is investing as in how much it is investing. These *why* questions have also, I know, proved helpful to our government economists. So I hope our Canadian friends will consider using more of them, and when they do, I feel sure the results will, like all their work to date, merit our most careful attention.

REPLY BY THE AUTHOR

My observations relating to Dobrovolsky's and Ulin's comments can be brief. Both discussants have made some very appropriate and well-considered remarks. In essence these develop further some of the points covered in the paper on "Investment Forecasting in Canada." In substance I am in agreement with what Dobrovolsky and Ulin say. Perhaps I might confine my remarks to an illustration of the applicability of the suggestions to Canadian economic conditions and to policy formulation and analytical techniques in use.

With respect to Ulin's remarks, I particularly like his emphasis, first, on the tenuousness of the information on business capital expenditure plans that investment-intentions surveys yield, and secondly, on the need for qualitative information as an aid in the interpretation of the results of the surveys.

On the first point Ulin rightly states that business capital expenditure plans are not forecasts of what will happen. Rather, they are statements of what businessmen intend to do at the time the survey is taken. Now unless there are firm commitments in existence at that time, businessmen's investment intentions can change for many reasons of both a macro- and a micro-economic type. Some two dozen reasons are mentioned in the Canadian paper, and many of these are identical with those listed by Irwin Friend and Jean Bronfenbrenner in their paper in this volume on "Plant and Equipment Programs and Their Realization."

Ulin's observations raise the interesting question, How important are commitments for capital expenditures already entered into at the time the survey is undertaken? If, for example, we knew that a company reporting a total anticipated capital outlay for the coming year of $\$x$ million had made binding commitments for, say, one-half of the contemplated expenditures (for example, work under way, construction contracts let, or firm orders for machinery and equipment placed), then any changes in investment plans would be likely to occur in the other half, for which commitments would presumably be made in the coming year.

In Canada we do not have such data on a company basis. But some information is available in the aggregate for the construction sector of capital expenditures. Ever since 1947 we have been surveying on a quarterly basis a sample of large construction firms in various parts of the country to ascertain the amount of construction work on their books. Based on this information, an index of the

value of work not yet completed has been developed. This index reflects firm commitments made by business and others to contractors. In appraising the construction part of investment intentions by business we usually check to see whether both construction intentions and construction commitments follow similar trends (upward over the last five years). If in one year there was a divergence—say construction intentions were up but work not yet completed was leveling off or declining—we would regard this as a danger signal. It would suggest that a larger segment of construction intentions was not committed at the time construction plans were stated, and therefore a greater portion of the construction program was possibly subject to cancellation or deferment.

Another set of data which we have found helpful in this respect is our monthly statistics of housing starts and carryover. Completions of houses in the next year are usually a function of the carryover at the end of the year plus a given proportion—usually about one-third—of starts initiated in the coming year. If, then, our field surveys show expectations for too large or too small a number of housing completions for the following year, we have a basis for further examination of the returns to determine reasons for such divergences. Inquiries usually follow, and frequently these lead to some corrections of earlier estimates.

With regard to the second point, Ulin is quite right in observing that qualitative information, including the question of why industry is investing as much as it says it is going to, is not covered specifically in the Canadian survey of anticipated capital expenditures. There is a good reason for this, namely, we are obtaining such information in other ways. We have, for example, some thirty commodity officers in the Department of Trade and Commerce whose job it is to keep in touch with the development and expansion of specific industries, their production problems, and market prospects both at home and abroad. These commodity officers visit a number of the firms more or less regularly. We go to these officers for explanations of why some companies or some industries are expanding more than others, what some of the difficulties faced by industries in seeing through their projects are, and why some companies decided not to go ahead with capital expenditure plans. The task, as we see it, is not only to find out why some businessmen are investing, but also why some other businessmen are not investing.

We also discuss, at our regular government-business economists' meetings, to which I made reference in the paper (see section B 11),

the *raison d'être* behind current business investment intentions and the factors that may either defeat or accelerate the realization of capital expenditure plans. Business economists who are closely in touch with the situation as it affects particular industries and who are aware of business sentiment and the economic climate within which business decisions are made are eminently suited to make qualitative observations on the motivating forces of the business community, and on the feasibility of proceeding with investment programs as planned.

While I agree with Ulin that some of the qualitative information can be obtained by means of statistical-survey methods, as demonstrated successfully by the McGraw-Hill surveys of business capital-spending plans, there are some aspects of this type of information that probably can be more effectively obtained through personal interviews and discussions with decision-makers in business and their advisers.

Incidentally, a number of suggestions for questions to be added to Canadian surveys of capital expenditure intentions have been made during the seven years of operations of the survey. I have consistently counseled against the addition of any questions to this survey, mainly on three grounds. First, we need a high rate of response to obtain reasonable estimates of the industrial and regional details required for economic analysis and policy formulation designed to deal with potential trouble spots as close to the source as possible. If the present simple questionnaire, which has only four questions, were to be made more complicated, this might reduce the current high rate of response. Secondly, we have a fairly strict timing schedule in order to get survey results and analysis done as early in the year as possible so as to be of maximum use to business and government in formulating policies for the coming year. A more complicated questionnaire might delay returns. Thirdly, there are other ways by which supplementary information can be obtained, as the examples given above indicate. Why, then, tamper with an operation which has been reasonably successful so far? This, I gather, is a sentiment that Ulin shares.

Let us turn now to the main point of Dobrovolsky's comments: the possible responses of the business community to the publication of the results of investment-intentions surveys. This is a very important question, and I am glad Dobrovolsky raised it. I think his point is well taken—that in the democratic environment of the North American continent publication of survey results properly qualified

and interpreted, together with whatever statement on policy the government considers appropriate in the circumstances, is preferable to the alternative, namely, the suppression of the information and a refusal of government to advise business of the economic policies it intends to pursue.

Dobrovolsky describes as the ideal condition complete harmony between business and government in formulating capital expenditure plans. While the situation in Canada is far from this ideal, our present arrangements have the advantage of being flexible enough to work—at least in the conditions we have had since the end of the war.

In Canada as in the United States great emphasis is placed on the opportunities of the individual and the operations of a private enterprise economy. In fact while our indirect economic policies may currently be tougher, our direct controls are much less numerous and perhaps more informal. Let me illustrate the formulation of government economic policies as they are affected by business capital expansion plans, and in turn influence the execution of such plans, by reference to the situation in 1951.

Anticipating higher capital expenditures in 1951, Canadian Cabinet ministers were emphasizing late in 1950 the need for restraint on the part of the business community in view of expected competing demands from the defense sector. These warnings were heeded by a number of firms in low-priority sectors, for example, light manufacturing, trade, finance, real estate, and service groups. But as the results of the 1951 investment-intentions surveys showed, not enough projects were deferred in these fields. The government therefore decided on a number of policies designed to encourage the postponement of low-priority projects, including such measures as the deferment of depreciation for selected capital undertakings for a period of four years, credit restrictions, and so forth. The advantage of such policies was that the decision whether to proceed with a project in the near future or not was still left to the individual businessman, although strong financial deterrents made it necessary for him to scrutinize carefully his capital expenditure plans. The upshot of all this was a distinct change in the composition of the investment program for 1951—anticipated also for 1952—with as little direct government interference in business affairs as possible.

There is no doubt, as Dobrovolsky suggests, that flexible government economic policies suited to varying business responses are one of the ingredients of good government in democratic countries.