PRICES
AND
INCOMES
COMMISSION

Final Report

Inflation, Unemployment and Incomes Policy

PRICES AND INCOMES COMMISSION

FINAL REPORT

inflation, unemployment and incomes policy

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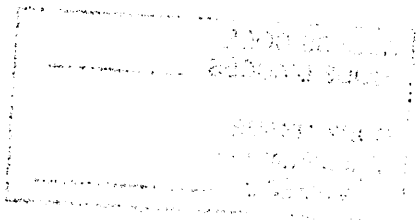
Commissioner

1972



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PREFACE

The terms of reference set forth in the Order-in-Council under which we were appointed in June 1969, were "to inquire into and report upon the causes, processes and consequences of inflation and to inform those making current price and income decisions, the general public and the Government on how price stability may best be achieved".

On June 20, 1972, we published a Summary Report containing our main findings and policy recommendations. We indicated in the preface of this summary version that we would make available later a fuller account containing a more comprehensive and technical analysis of the issues. Since the contents of the present publication are directed solely to the analysis of the "causes, processes and consequences of inflation", while our recommendations on policy are confined to the Summary Report, we have felt it would be a convenience to readers to have the two documents available together. We have, therefore, included the Summary Report as an Appendix.

In preparing this Final Report, as in carrying out the other work of the Commission, we are grateful to those who have been directly associated with us. The former Vice-Chairman of the Commission, Mr. Paul Gérin-Lajoie, played an important part in our attempt to obtain general agreement on the prices and incomes restraint program in 1969, and in the preparation and execution of the program of price restraint adopted at the National Conference on Price Stability in February, 1970. Mr. Bertram G. Barrow, who

served as a Commissioner during most of 1970 and part of 1971, was primarily responsible for the successful administration of the price restraint program and helped in initiating the preparation of contingency plans for a mandatory control system.

There were many in the Prices Division who made significant contributions to the Commission's work and it is hard to point to any without mentioning others. Two names do stand out. In the two and a half years he spent with the Commission, Mr. F. Leslie C. Reed helped to initiate our work in the prices area and held key positions both during and after the end of the formal price restraint program. Mr. John Hague, who was with us from the beginning to the end, made himself indispensable and ended up in charge of the contingency planning of the Prices Division.

In the incomes area, Mr. Stanley D. Cameron served with distinction as Director of the Wage and Salary Review Division and, aided by a small but able staff, has been in charge of the contingency planning in this field and has assumed responsibility for the Working Group which will succeed the Commission.

In the Research Division, under the able direction of Professor John G. Cragg, the Commission undertook a varied program of specialized studies bearing on many of the questions discussed in this report. A series of Commission studies will be issued reporting on this research, which was carried out both by economists on our own staff and by others working on contract at various universities.

Special mention must be made of the part played by Professor Donald F. Gordon, a Canadian economist teaching at the University of Rochester. In terms of the ideas contained in the Summary and Final Reports, he is in a real sense a co-author, although he cannot be held responsible for any misuse we have made of his many contributions.

We were singularly lucky in the high quality of the administrative group which provided support for the Commission's operations and research. It would be easy to name twenty or more people who made a valuable contribution in this respect. Two who were with us from the start deserve special mention. One of them, Mrs. Jean Orr, organized and operated what proved to be an excellent Commission library. The other, Mr. Gerald A. Berger, served throughout as Secretary of the Commission. His contribution, which spanned a wide area of information services, personnel, finance and governmental relations, was of the kind one hopes to get from a first rate administrator.

More generally, we owe a good deal to our outside consultants and to a number of people within governments, unions, corporations, associations, the media and the universities as well as the public at large, for their ideas, their efforts and their support. In recent years economic policy, like the

management of other human affairs, has faced such intractable problems in so many countries that it has often seemed—

> "Things fall apart; the center cannot hold;
> Mere anarchy is loosed upon the world . . . "

At any point in time it is easy to conclude that there are only a handful of people scattered throughout society who see clearly enough and are prepared to act firmly enough to avoid a test being made of how much ruin there is in a nation. It has been our good fortune to work with a number of those who could justly be described as forming part of the center holding things together.

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AN OVERVIEW OF CANADIAN INFLATION

Introduction

Most people in Canada today use the term "inflation" as a label for a continuing rise in the average level of consumer prices at rates substantially higher than some minimal figure which has come to be regarded as normal on the basis of past experience. This is rather an imprecise way of referring to a highly complex phenomenon, but it has the advantage of common usage.

Of course the prices paid by final purchasers of consumer goods and services at the retail level represent only one category of a whole interrelated structure of "prices" whose strong upward movement during inflationary periods progressively reduces the worth of any given sum of money in terms of what it will buy. As one goes back through the productive process, one finds that retailers face rising wholesale prices and distribution costs, while producers face rising prices for the materials and services used in their operations and for the equipment, construction services and finance required for new investment. At all levels of production and distribution, rates of employee compensation for labor services—usually a major element in total costs—tend to rise more rapidly than in the past. The prices of existing assets, such as buildings and real estate, are also affected, together with the rents charged for the services they provide.

Using the term in the conventional sense referred to above, there have been two major bursts of inflation in Canada in the last 20 years. The first of these outbreaks occurred in the mid-1950s and, though sharp, was of fairly short duration. Towards the close of the 1950s, the rate at which the price

level was rising subsided again, and for several years Canada experienced consumer price increases averaging about 1.5 per cent per annum associated with increases in average wage levels of the order of 3.5 per cent annually.

The second and more prolonged outbreak began in the mid-1960s, with consumer prices subsequently rising by about four per cent annually and wages by something like seven to eight per cent a year. Although the rate of increase in the Consumer Price Index slowed down markedly in 1970, much of this improvement reflected special or temporary influences and by early 1972 consumer prices in Canada were again rising at rates not greatly below those experienced during the late 1960s. The persistence of the inflationary outbreak has been particularly apparent in the continuing rapid rise of wage rates negotiated under major collective agreements, with average annual increases over the life of major new contracts in industries other than construction continuing to run at 8.4 per cent in 1970 and 7.8 per cent in 1971.

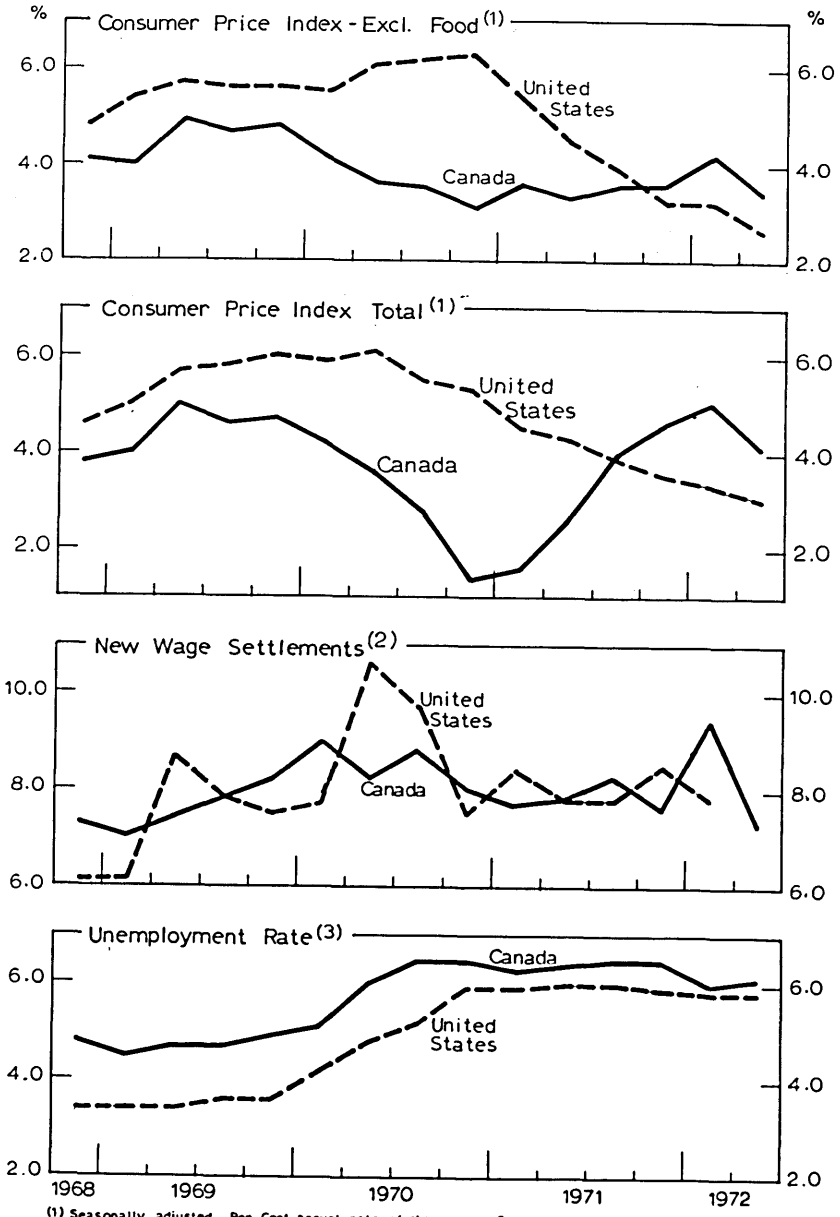
Each of these episodes of relatively rapid inflation in Canada was associated with roughly contemporaneous and broadly parallel episodes in the United States. It is not surprising that in both countries these bursts of inflation originated in an economic environment of unusually rapid expansion of demand, output and employment which put unusually strong demand pressure on productive capacity and manpower resources. What has occasioned surprise and puzzlement is the degree to which, in both countries, substantial rates of increase in costs and prices have persisted long after demand pressure on capacity has become quite slack in most product and labor markets.

Although a less striking phenomenon than in the last two or three years, the persistence of substantial rates of wage and price increase in 1957-58 well after unemployment had risen to abnormally high levels was widely noted at the time and led to much questioning of accepted ideas about the causes of inflation. When reasonable price stability was restored around the end of the 1950s, less was heard about the various special hypotheses which had been advanced to explain the "new" inflation. More recently, however, these hypotheses have been taken off the shelf again and a number of additional ideas have been propounded to explain the marked lack of responsiveness of cost and price trends in recent years, both in Canada and the United States, to the emergence of abnormally high unemployment and excess capacity. The general character of these recent developments is summarized in Figure 1.

No one looking for possible explanations for this phenomenon is likely to encounter a shortage of suggestions. Some of these ideas are reminiscent of the oldest extant theory of inflation—that it is caused by the greed of powerful groups within the community. To some, the main villains in the piece are large, oligopolistic business concerns; to others, the principal blame lies with unions, professional bodies and similar organized pressure groups; to still others, the chief source of the trouble is the increasing share of the nation's resources claimed by the rapidly expanding activities of governments, accompanied by spreading governmental intervention

Figure 1

PRICE, WAGE AND UNEMPLOYMENT TRENDS
CANADA AND UNITED STATES, 1969-1972



(1) Seasonally adjusted. Per Cent annual rate of change over 3 quarters ending with quarter plotted.

(2) Compound annual rates of increase over life of contract, new major union agreements. Canadian data exclude construction industry.

(3) Seasonally adjusted.

which they regard as undermining the working of the private economy. It is sometimes suggested that the root of the problem may lie even deeper: basic changes in social attitudes may be occurring, whose symptoms are widespread dissatisfaction with the existing structure of economic power, distribution of income and wealth, attachment to the work ethic, and so on.

A rather different point of view stresses the international ramifications of contemporary inflation. Particularly for a country as subject to strong external influences as Canada, the rate of domestic inflation experienced may depend largely on the rate of inflation occurring in the United States and other countries. Given the many channels through which foreign prices and costs and foreign demand affect Canadian prices, costs and levels of demand, inflation in Canada may be largely an imported phenomenon and there may be little this country can do by itself to control the process.

Finally, there are those who regard the persistence of "cost-push" inflation in the face of slack demand pressure not as *prima facie* evidence that established notions of how the economy works must be rejected but that these notions require reinterpretation or modification in certain respects. In particular, the rising trend of costs and prices may not show much response to a temporary easing of demand pressure because of the existence of fairly lengthy response lags together with stubbornly held "inflationary expectations" formed on the basis of past demand conditions and price experience.

Few of these ideas can be rejected out of hand. Indeed, it seems likely that any phenomenon as complex as inflation reflects the interaction of a wide variety of influences. The problem is to try to identify the main factors involved, to form reasonably precise and logically satisfying ideas about how they might be supposed to operate, and to establish, at least in a broad way, the relative importance of their probable effects. As we shall indicate later, many of the factors which have been thought to contribute to our difficulties may well have had some impact, but it is important to view their operation in a balanced overall perspective.

What is beyond question is that the persistence of inflation under recent conditions of economic slack is evidence of a surprisingly limited response to a short-run reduction in demand pressure on the part of our present institutional mechanisms for setting wage rates and prices. It is this degree of unresponsiveness to changing economic conditions which needs to be explained.

We begin by examining the broad pattern traced out since the early 1950s by the main aggregate measures of price and cost change which are publicly available in Canada, and discuss some of the characteristics and limitations of these measures. We then turn to the record of change over this period in the aggregate money value of output in Canada, in order to see whether there is evidence of a systematic relationship between changes in aggregate money expenditure on the goods and services we produce, changes in the physical quantity of this output, and changes in its aver-

age price. This leads to a discussion of changes in the overall level of capacity utilization in Canada and how such changes appear to be related to the behavior of aggregate measures of output prices. A similar analysis is presented of changes in the degree of manpower utilization in relation to the behavior of wage rates and prices.

The chapter concludes with a discussion of how the respective shares of employment income and returns to capital have varied over time as a proportion of aggregate income in Canada, the relationship between changes in labor income and productivity, and patterns of variation in average profit margins.

In drawing attention to the existence of these relationships at the aggregate level of economic activity, it will be apparent that we lack any firm basis for discriminating among various possible explanations of the mechanism involved until we have considered in some detail the nature of the micro-economic behavior of individual economic units which underlies these aggregative relationships. This is the subject matter of the four succeeding chapters.

Our analysis of the nature of contemporary inflation concludes with a final chapter in which we summarize our findings and discuss the economics of the so-called "trade-off" between inflation and unemployment.

The Record of Price Change in Canada

The past record of changes in the average level of prices in Canada is traced out by the movement over time of a number of broad price indexes which vary somewhat in their method of construction and in their comprehensiveness. It is not proposed at this stage to enter into a detailed discussion of the many intricate problems of constructing indexes to measure changes in average price levels. It must be recognized, however, that the various measures which are relevant for this purpose are designed to serve somewhat different ends and differ somewhat in quality. No one index is entirely satisfactory in all respects or moves in precisely the same way as alternative indexes.

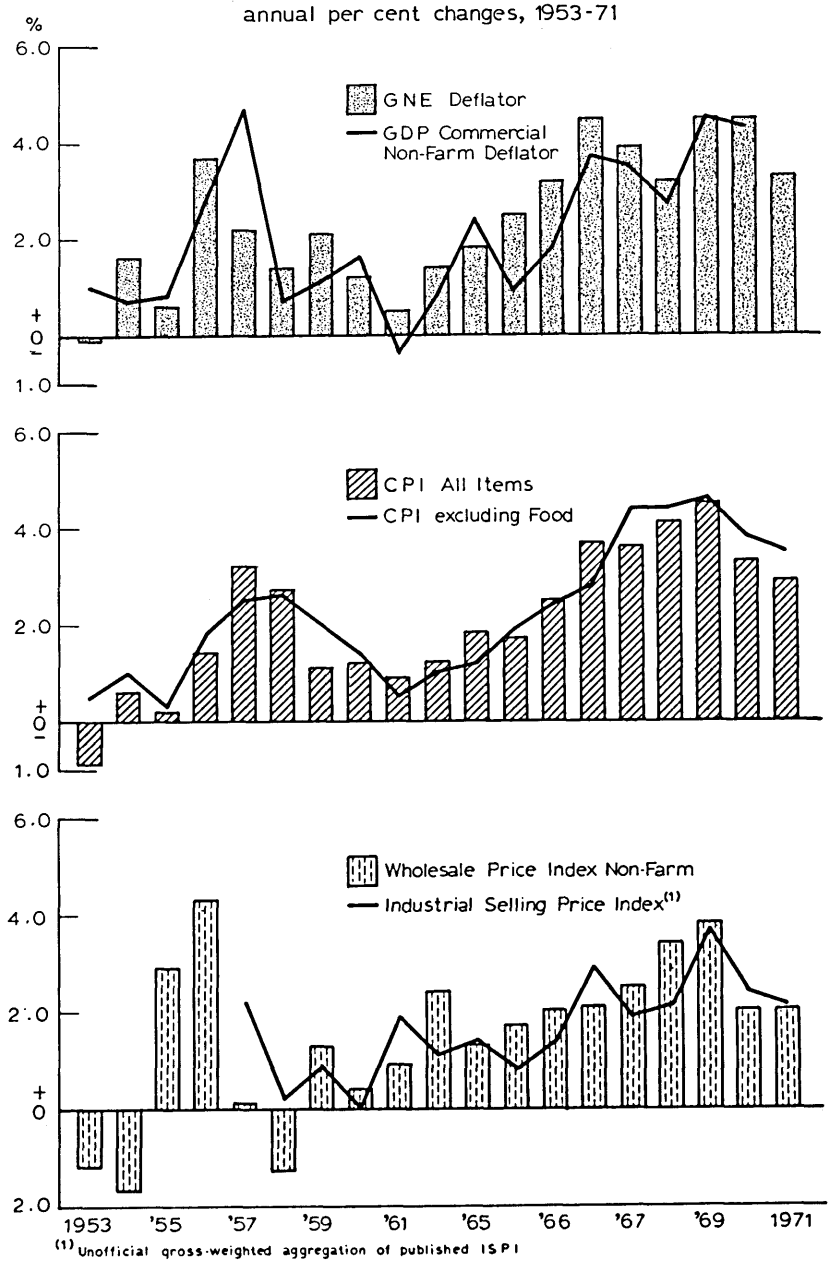
The behavior over recent years of a number of these aggregate measures of price change is recorded in Figure 2. It will be seen that over any extended period the behavior of the various indexes shows a broadly similar trend, although their movements often diverge significantly over shorter periods. Indeed, the rates of change of these various price measures fluctuate so widely from month to month and convey such conflicting impressions as to make the dating of major changes of trend very imprecise.

Since 1953 all of these indexes show a persistent upward trend in the price level even during prolonged periods of abnormally high unemployment. This rising trend was rather gradual in most years. For a relatively brief period beginning in the mid-1950s, however, it speeded up considerably, and then, after subsiding for several years, speeded up again in the mid-1960s. The degree to which this substantially escalated rate of increase in the price

Figure 2

AGGREGATE PRICE INDEXES

annual per cent changes, 1953-71



(1) Unofficial gross-weighted aggregation of published ISPI

level has persisted over subsequent years stands out very clearly in the behavior of all of these measures, and constitutes the central puzzle to which this report is directed.

There are several observations that may be worth making at this stage about the behavior of these aggregate price indexes.

The first is that a great number and wide variety of individual price changes underlie the movement of these indexes. Even during periods when these broad measures of price change have remained virtually stable it will be found that a great many individual price changes have occurred—some up, some down, and by widely differing percentages. Some prices, such as those for many farm-produced foodstuffs, typically show frequent ups and downs, and the range of price variation may be very wide in particular cases. More typically in modern economies a great many prices appear to be rather rigid in the short run and are subject to only intermittent and generally upward adjustment.

The degree of short-run stability exhibited by many individual price measures is probably exaggerated. One important reason for this is that firms often maintain unchanged list prices even during periods when in fact the proportion of transactions taking place well below list prices is subject to substantial variation. This variation in transaction prices often reflects the changing policies of firms with respect to the granting of special discounts to volume buyers, the proportion of servicing and transport costs absorbed, the nature of guarantees offered, and similar conditions of sale.

Apart from the probability that most broad price measures tend to understate the range within which prices do in fact fluctuate, there are also strong reasons for believing that most such measures are subject to a mixture of upward and downward biases over time. The problem of upward bias in price indexes arises in its most extreme form in areas of output where unusual difficulty is encountered in making proper allowance for quality change or improvements in productivity. Within the National Accounts framework, for example, the intractability of the problem of measuring output and productivity change in the government sector, even within very broad limits, has led statisticians to employ the convention that no productivity change occurs as an offset to the rising rates of compensation of government employees.

Similar problems occur in distinguishing between quantity and price changes in construction and many of the service industries, though in these areas the difficulties are somewhat less severe. Another example of the problem of making appropriate allowance for quality change arises in the pricing of non-standardized items, such as custom-built machinery.

Finally, special problems arise in the case of new products appearing on the market for the first time. For example, how is an index of the price of medical services to deal with the introduction of a drug like penicillin or an effective polio vaccine, which substantially changes the "quality" of medical care? Moreover, a period of several years is likely to elapse before the

prices of such items are included in the conventional indexes. This too is likely to result in some overstatement of the rate of price increase over time, since new products are particularly likely to show substantial price declines during the first few years after their appearance on the market. It is true, of course, that statistical procedures may also lead in some cases to downward bias in the behavior of the indexes.

It is not easy to reach definitive conclusions on. likely biases in our conventional price measures[1]. It is possible that measured rates of average price increase as low as, say, two per cent per annum or less may in fact reflect an even flatter trend in the actual price level. This possibility, together with the apparent lack of public concern about the problem at such low measured rates of inflation, provide the main justification for defining reasonable price stability in these terms. The possibility of some degree of upward bias in these indexes also makes it dangerous to take too literally the percentage change in the price level which these measures show over any extended period of time, since such figures may in fact be considerably exaggerated.

There is a possibility that any net upward bias in our major price measures may have been increasing somewhat over time with the progressive enlargement of the government and services sectors of the economy. It is true that the proportion of Gross National Expenditure accounted for by current government outlays and consumer spending on services minus net imports of services has risen from 37.4 per cent in 1961 to 40.6 per cent in 1971. This, however, scarcely seems a large enough shift in the composition of output since the early 1960s to have accounted for more than a rather small proportion of the escalation of rates of cost and price increase recorded by the main indexes over more recent years.

One additional feature of the composition of aggregate price indexes may be deserving of comment at this point. It has long been observed that certain kinds of prices, notably those of durable goods, typically rise less rapidly than the index as a whole whatever its rate of increase, whereas other prices, including those of many kinds of services, typically rise more rapidly than the overall index during almost any period. This, of course, is a reflection of differential rates of productivity change. When the overall rate of inflation speeds up, the rates of increase of both kinds of prices are typically affected. The largest individual price increases are thus likely to be observed in the case of particular services or perhaps in the case of other individual items whose prices normally fluctuate over an unusually wide range, such as food prices. The inference is often drawn, though obviously incorrectly, that the outbreak of inflation can be attributed to the unusually rapid rates of increase observed in the prices of a few such items. It is equally possible, of course, that the outbreak of inflation may be traced to the failure of many quite different items to show smaller increases than were in fact

[1] For a detailed discussion, see R. M. A. Loyns, *Measures of Recent Price Change in the Canadian Economy*, a study prepared for Prices and Incomes Commission.

recorded, or indeed to the failure of certain items to show even larger price declines than in fact occurred.

Another point which may be worth mentioning is that upward pressure on the price level often appears first in the prices of primary commodities and crude materials, then at a somewhat later stage in the wholesale prices of industrial output, and later still in the retail prices of consumer goods and (particularly) services. Thus the Consumer Price Index tends to reflect changes in commodity and wholesale prices with an appreciable lag.

The aspect of price behavior which is most pertinent for purposes of this report is the marked escalation of the rate of increase of the price level in the mid-1960s indicated by all of the available measures, and the degree to which this escalated rate of price increase appears to have persisted through the remainder of the 1960s and into the early 1970s. There is every reason to believe that this escalation of the pace of inflation has been a genuine phenomenon, whatever the deficiencies of the available price indexes.

It is worth noting in this connection that over any extended period of time the doubling of even a low average rate of inflation has a striking effect on the purchasing power of a fixed sum of money. In 10 years' time, for example, a sustained rise in the price level at a two per cent annual rate reduces the purchasing power of a fixed sum of money by one-sixth. Over the same period of time, a sustained four per cent annual rate of inflation would cause the purchasing power of money to shrink by one-third. One of the reasons why drifting into increasingly severe and chronic inflation is such an insidious process is that the effects are cumulative rather than immediate, and thus take some time to be fully appreciated.

The Record of Changes in Labor Costs in Canada

We have pointed out above that the whole interrelated structure of production costs and output prices is affected by inflation—not just consumer prices at the retail level. By far the most important category of basic input prices in the productive process consists of the prices paid for labor services. This is also, however, one of the most difficult areas of price measurement, and it is not surprising that analysis of changes in average labor costs in Canada is severely handicapped by the deficiencies of the various aggregate measures of employee compensation levels which are available.

In principle, a desirable price index for labor services would be an average of prevailing straight-time rates of total compensation paid for standard units of various kinds of labor inputs, calculated on the basis of fixed weights so as to avoid distortions due to interindustry shifts. In practice, however, the available measures in Canada fall well short of this ideal in various respects. Labor services are anything but homogeneous, and this presents difficulties of classification and standardization. Thus the prevailing straight-time hourly rate of pay for journeyman carpenters measures the price of

units of labor services which may differ considerably depending on the skill category of the particular group of tradesmen who supply these services as well as on the type of construction on which they are normally employed.

A second source of difficulty arises from the great diversity of compensation practices, which poses serious problems in attempting to define and measure standard rates of total compensation for labor services. In addition to straight-time hourly rates of pay or annual salary levels, the price structure for employee services is complicated by the existence of premium rates for overtime, incentive payments and bonus arrangements, piece work systems, irregular lump sum payments, varied and substantial fringe benefit provisions, and practices which build in "wage drift" such as automatic step increases in rates of pay for particular job classifications based simply on length of service.

Such aggregate wage rate and average earnings measures as are available in Canada differ widely in concept, coverage and quality, and the responsibility for producing such measures is not concentrated in any single government agency such as Statistics Canada.

Thus, for example, information on wage rates as such is compiled on a national basis by the Canada Department of Labour. The most comprehensive body of data of this kind is based on an annual survey conducted by the Department. An attempt is made to compile weighted averages of "prevailing" or "typical" straight-time rates of pay for a wide range of occupational categories in various parts of Canada. The data do not attempt to distinguish explicitly between rates of pay for union members and those for unorganized workers, and the coverage of the data, which is understandably weaker in some occupational areas than is others, has been expanded considerably over time.

A related body of data is also published by the Canada Department of Labour on the basis of a monthly analysis of collective agreements covering bargaining groups of 500 employees or more in industries other than construction. Indexes are published quarterly both of weighted average base rates of pay in effect under existing agreements of this kind, and of weighted average increases negotiated under new agreements. Here again interpretation of the data is subject to many difficulties posed by limited and changing coverage and by the exclusion of construction wage rates and of elements of compensation other than "base rates". Comparable data for unorganized employee groups would be of great analytical interest, but unfortunately only limited data are available for making comparisons of this kind.

Aggregative data are published monthly by Statistics Canada on employee compensation. These consist almost entirely of average hourly or weekly earnings data rather than data on straight-time rates of employee compensation as such. The interpretation of average earnings data is made extremely difficult by the extent of short-run variation in overtime hours worked at premium rates, in short-time working, and in the composition of the work force both within firms and among industries.

Changes in rates of employee compensation are only one of the two main determinants of changes in labor costs per unit of output. The other is commonly referred to as changes in productivity. This is simply a measure of changes in the ratio of labor inputs to the quantity of output produced. Changes in measured productivity may reflect changes in the degree of effort or skill supplied by the work force, but they may equally well reflect the influence of quite different factors, such as improved technology, the use of more, or better, capital equipment, more efficient organization of the production process, etc. The measurement of productivity change is also, of course, subject to many technical difficulties. The relationship between changes in rates of employee compensation and changes in productivity in determining changes in unit labor costs is discussed in more detail later in this chapter.

The behavior over recent years of a number of aggregate wage rate and average earnings measures is recorded in Figure 3. Over the period as a whole since 1953 the rise in wage and salary levels has, of course, been substantially greater than that in the level of unit labor costs or prices. This is mainly a reflection of rising productivity, which has provided a partial offset to the cost-raising impact of increases in money wages and salaries.

It will be apparent that the degree of short-run variation in the trend of average earnings is greater than it appears to be in the trend of wage rates as such, reflecting the additional influence of variations in average hours worked, overtime hours, and other factors. Average earnings also seem to respond somewhat earlier to a pick-up in economic activity than do wage rates, and they also show a more sensitive response to declines in activity. Both series, however, tend to respond with a considerable lag to changes in the economic climate.

A common feature of these various series is a broadly similar pattern of movement since the early 1950s. Rates of increase both in average earnings and in nominal wage levels accelerated for a time in 1956-57, subsided again during the late 1950s and remained relatively low until the mid-1960s. The much faster rates of wage increase experienced during the latter half of the 1960s will be seen to have persisted in large measure in the early 1970s.

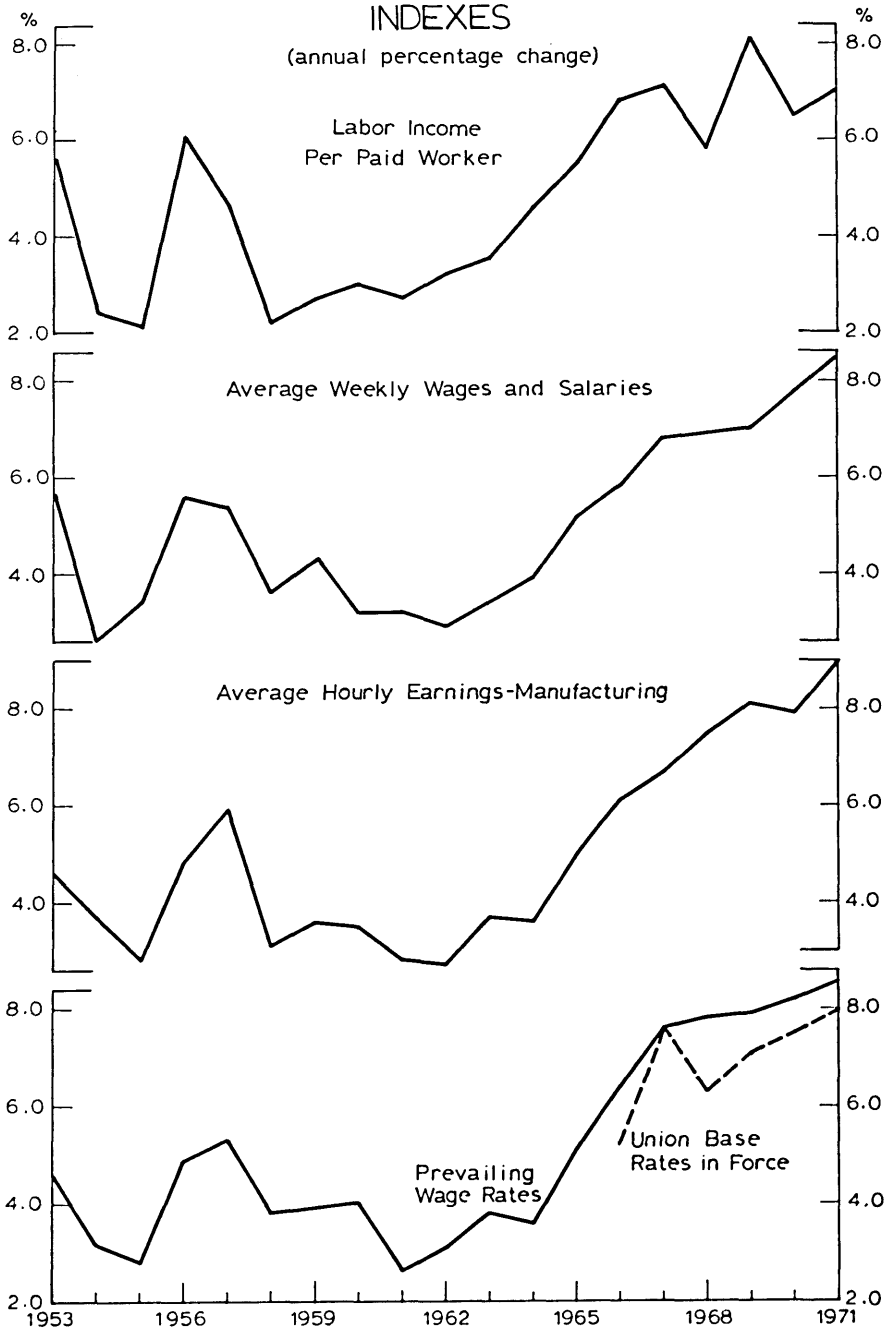
Changes in Aggregate Demand, Output and Prices

Outbreaks of inflation have long been associated with periods of rapid increase in aggregate money expenditure in the economy. These have also been periods during which economic activity has expanded sharply to unusually high overall levels. When inflation has subsided, on the other hand, this has usually been associated with periods of pronounced weakness in most areas of market demand and sagging levels of aggregate economic activity. The purpose of this section is to outline Canadian economic

Figure 3

WAGE RATE AND AVERAGE EARNINGS INDEXES

(annual percentage change)



experience since the early 1950s from this point of view, in order to gain some perspective on the puzzling aspects of our current situation.

For the economy as a whole, the system of National Accounts provides a record of the total dollar value of final production of all goods and services, together with estimates of the extent to which the growth in the total of production reflected rising output and the extent to which it merely reflected a rise in the price level. Annual percentage changes in the value, price and quantity of output for each year since 1953 are shown in Table I, both for the economy as a whole and for that part of it—the commercial non-farm sector—where the trend of output and prices is less obscured by difficulties of measurement and by random fluctuations than it is in government, non-commercial services and agriculture.[2]

TABLE I

Annual Changes in Value, Price and Quantity of Output in Canada
(percentage change from preceding year)

	Gross National Product[1]			Gross Domestic Product[2] Non-Farm Commercial Sector		
	Value	Price	Quantity	Value	Price	Quantity
1953	5.1	−0.1	5.1	7.1	1.0	6.1
1954	0.3	1.6	−1.2	1.7	0.7	1.0
1955	10.1	0.6	9.4	10.7	0.8	9.8
1956	12.4	3.7	8.5	12.5	2.8	9.5
1957	4.5	2.2	2.3	6.9	4.7	2.1
1958	3.8	1.4	2.3	1.3	0.7	0.6
1959	5.9	2.1	3.8	7.4	1.1	6.3
1960	4.1	1.2	2.9	3.5	1.6	1.9
1961	3.4	0.5	2.8	3.2	−0.4	3.6
1962	8.3	1.4	6.8	7.3	0.8	6.4
1963	7.1	1.8	5.2	7.4	2.4	4.8
1964	9.4	2.5	6.7	9.8	0.9	8.8
1965	10.1	3.2	6.7	9.6	1.8	7.7
1966	11.7	4.5	7.0	10.5	3.7	6.6
1967	7.4	3.9	3.3	7.4	3.5	3.9
1968	9.3	3.2	5.9	7.9	2.7	5.1
1969	9.9	4.5	5.2	9.5	4.5	4.8
1970	7.1	4.5	2.5	6.8	4.3	2.4
1971	8.9	3.3	5.5	N.A.	N.A.	N.A.

[1] Based on 1972 revision of National Accounts.
[2] Estimates by Statistics Canada based on National Accounts prior to 1972 revision.

There is clear evidence that the major price upsurges in Canada in the mid-1950s and again in the mid-1960s were preceded by strong upsurges in

[2] See the Appendix to this chapter for a fuller discussion of the nature of these difficulties and of the analytical advantages of focusing on the commercial non-farm sector of the economy, together with a discussion of data sources.

aggregate spending on goods and services, which initially stimulated large gains in output and employment but in so doing progressively reduced the amount of spare productive capacity and unemployment in the economy to unusually low levels.

It will be seen that the growth of total money expenditure on goods and services speeded up sharply in 1955-56, resulting initially in unusually large increases in output and only later, after a considerable time lag, in an accelerating rise in the price level which reached its peak in 1957. By that time the rates of increase in spending and in output had already begun to slow down markedly.

This same pattern of events was repeated with the upsurge in aggregate money expenditure in the period 1964-66. This too resulted in large initial output gains followed, in 1966-67, by a marked acceleration of the rise in prices even though by this time the growth of demand and output had begun to lose momentum[3].

Both episodes began in circumstances where substantial underutilized plant capacity and underemployment of the labor force existed. This may help to explain why the economy's main response to the upsurge in demand did not take the form of an immediate escalation of price and wage increases, but rather was characterized by sharp increases in production and employment. The resulting upturn in the operating rates of more and more firms toward the limits of their existing productive capacity, together with the increasing scarcity of more and more categories of workers whose skills were in strong demand, may in turn help to explain why price and wage increases progressively became much larger and more frequent. The more difficult it becomes to keep production rising as rapidly as the growth in money demand, the faster are prices likely to rise.

On two occasions when the growth of total money expenditure on goods and services slowed down markedly, as it did in 1953-54 and again during the period 1957-60, it will be seen that the initial impact was to slow the rate of growth of output, and only at a later stage did signs of a considerably slower rate of price increase appear. The effects of a rather similar slowing of expenditure growth in the second half of 1966 and the year 1967 are clear enough so far as the trend of output is concerned, but the subsequent impact on the rate of price increase was short-lived, no doubt because the lull in demand expansion was relatively brief and mild. The most recent episode of this kind began to develop in the course of 1969. Its effects on the growth of output in 1970 are clear enough, but its effects on the trend of the various

[3] The focus of attention here is on the growth rate of aggregate demand rather than on that of particular kinds of spending. The surge of demand expansion in 1964 happened to be led by exports, private investment, housing and consumer durable spending rather than by the capital and current outlays of governments, whose increasing stimulus was not felt until 1965 and 1966 respectively. We attach no special significance to this fact. Indeed, the initial upsurge in private spending owed much to the lagged effects of the exchange rate actions taken in 1961-62 and to the expansive posture of fiscal-monetary policy during the period.

price measures in that year—especially the Consumer Price Index—were exaggerated by a number of special or temporary factors, including a sharp dip in food prices, the appreciation of Canada's exchange rate, and the price restraint program in effect at the time.

There are plausible reasons for expecting the rate of increase in the price level to speed up at some stage as a burst of rapid demand expansion carries the operating rate of the Canadian economy progressively closer to the existing limits of its productive capacity. By the same token, when demand growth turns sluggish, the opening up of a widening gap between the economy's actual operating rate and these capacity limits might be expected to result, at some stage, in a slowing down of the rate of increase in the price level.

This assumes the existence of some range of capacity utilization within which the Canadian economy has normally been able to operate on a sustained basis without bringing about any marked speeding up or slowing down of the pace of price increase. This is not to deny that even within this range of normal operating rates the rise in the price level may have tended to speed up or slow down to some extent when the rate of change of foreign prices of internationally traded goods has speeded up or slowed down, unless such variations were offset by compensating exchange rate movements. How important an influence foreign price trends seem to have had on recent Canadian price and cost experience at the aggregate level is examined in greater detail in Chapter V.

It is not difficult to understand why, at some stage, the degree of upward pressure on prices and costs seems to have mounted as the economy's operating level has moved up toward unusually high rates of capacity utilization. It is less clear that the rising trend of prices and costs has moderated to a corresponding extent as the economy's operating rate has declined to normal or sub-normal levels of capacity utilization.

An examination of recent experience of price change in Canada in relation to changing levels of capacity utilization provides a broad indication of how large a pool of temporarily idle productive resources seems to be required if the rising trend of prices is not to accelerate. The answer cannot, however, be very precise or certain. Over the historical period we are examining, the degree of demand pressure on capacity has varied too frequently and over too wide a range for the eventual price response of the economy to become fully apparent before a new balance of forces has begun to alter the course of the price level, including the effect of changes in the trend of prices in the United States and elsewhere.

The growing capacity of the economy to supply the quantities of goods and services people want to buy depends primarily on the growth, composition and skill of the labor force, on the increasing amount and quality of the capital stock, and on improvements in productivity arising from technological progress and other sources. Both the total productive capacity of the economy and the actual level of production at which it has operated have been on a rising trend since the Second World War.

No accurate direct measures of the economy's growing productive capacity over time are available for comparison with actual levels of output, as a guide to pressure on capacity. Indirect measures of productive capacity can be constructed, such as the estimates of "potential output" calculated by the Economic Council, but these necessarily rely on various arbitrary assumptions—particularly with respect to the minimum level of unemployment which can be sustained over time, and the associated sustainable rate of productivity improvement.

While it is extremely difficult to establish a unique level of productive capacity with any great degree of confidence, its broad trend over time can be approximated in various indirect ways[4]. An estimate of the trend of capacity growth, though crude, can usefully be compared with the trend of actual output as a guide to pressure on productive capacity.

A number of such measures are shown in Figure 4. A trend rate of growth, shown as a horizontal line, has been fitted to real Gross Domestic Product in the commercial non-farm economy[5], and annual deviations around this longer-term trend line have been plotted. The trend of employment in this sector of the economy, and annual deviations from this trend, have been presented in similar fashion. For the economy as a whole, annual deviations of the national unemployment rate from its average level are shown on the chart in inverted form, and provide an additional indirect measure of pressure on capacity. For purposes of comparison, the chart also shows annual deviations in the GDP implicit price deflator (a broad measure of price change in the commercial non-farm economy), and in hourly labor compensation in this sector, from their trend rates of increase.

It will be apparent from an examination of this chart that the rise in prices and hourly earnings has tended to speed up in circumstances where output and employment have already been rising for some time much faster than their long-term trend and unemployment has already fallen to well-below-average levels. Conversely, at times when the rise in prices has begun to moderate, it will be seen that these various measures have already been signalling the emergence of growing excess capacity and abnormally high unemployment in the economy for a considerable period.

It is a well established fact that the response of prices and costs to changes in the degree of demand pressure on manpower and other productive resources is normally subject to substantial time lags. These arise both from the time it takes for people to recognize that market demand conditions have changed substantially from what they had expected on the basis

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[4] The trend rate of growth in the output capacity of the Canadian economy in recent years would seem to have been of the order of five to 5.5 per cent annually by most measures. Thus if national expenditure in money terms were to rise at an average annual rate of roughly seven per cent, the price level would have to rise on average by something like two per cent annually.

[5] See Appendix to this chapter for sources of data and the rationale for excluding agriculture, government and non-commercial services from the analysis.

Figure 4

NON-FARM COMMERCIAL ECONOMY:
OUTPUT, EMPLOYMENT, WAGES AND PRICES
(annual per cent changes)

of past experience, and from a variety of institutional rigidities, such as the existence of long-term contracts, which prevent rapid wage and price adjustment.[6]

Thus it can be argued with some plausibility that the increasingly apparent acceleration of the pace of inflation towards the end of 1965 may have been a delayed response to a build-up of unusually strong demand pressures in product and labor markets which began a good deal earlier—quite possibly as early as the first half of 1964, when the decline in the adjusted national unemployment rate had only recently carried it below the five per cent level. This line of reasoning would also suggest that it may not have been until early 1970, when the unemployment rate rose decisively above the five per cent level, that significant excess demand pressure was clearly eliminated from the Canadian economy.

Additional evidence that the Canadian economy has become subject to upward demand pressure on the price level when the national unemployment rate has declined much below five per cent of the labor force can be seen in connection with the inflationary upsurge of the mid-1950s and its subsequent demise. Any plausible allowance for the time lag between the response of prices in early 1956 and the beginnings of the build-up of unusually strong demand pressure which preceded it would date the latter at least as early as the spring of 1955, when the fall in the unemployment rate first brought it down below the five per cent level. The subsequent steep rise in the unemployment rate carried it above the five per cent level in the early autumn of 1957, and the rate of increase in the Consumer Price Index began to show distinct signs of moderating about a year later.

The level of unemployment is, of course, a rather crude reflection of the degree of overall demand pressure in the labor market—let alone on the economy's productive capacity—and this in turn is not the only factor which can influence the trend of the price level. Judging by the observed behavior of the economy since the early 1950s, however, it is difficult to avoid the conclusion that on the two occasions when the unemployment rate has dipped much below five per cent of the labor force for any appreciable length of time, the pace of inflation has subsequently speeded up considerably.

Although the unemployment rate began to rise again after the end of 1966, its average level over the following three years remained appreciably below five per cent. The fact that the recently escalated pace of inflation did not change greatly during these years is consistent with the view that the degree of demand pressure on capacity experienced during this period may have continued to border on the "normal" range referred to earlier.

Three aspects of the overall performance of the Canadian economy should be borne in mind in considering the degree to which the price level has continued to rise since the end of the 1960s.

The first is that on past occasions when the rate of demand expansion has slowed down, some time lag has usually been observed before the rate of

[6] The nature of these response lags is examined in some detail in Chapters II and III.

increase in the price level has begun to moderate very much. As we have noted, similar response lags have been observed when demand growth has speeded up.

The second is that the moderation of demand growth around the turn of the decade had been preceded by an unusually protracted period of substantially rising prices and by an even longer period of continuously rising output levels.

The third is that the slowing of demand expansion and the associated sluggishness of output and employment growth at the beginning of the 1970s were relatively mild and short-lived by comparison with the course of events from 1957 to 1961. During most of 1971 and into 1972, substantial rates of increase were again being experienced in aggregate expenditure, output and employment levels. Although unemployment lingered on at abnormally high levels, the average unemployment rates experienced in 1970 and 1971 were appreciably below those recorded in 1960 and 1961, particularly in the case of male workers 25 years of age and older.

Changes in Money Income, Real Income and Income Shares

Earlier in this chapter we showed how annual increases in the total dollar value of ouput in Canada could be broken down between increases in the physical volume of output and increases in the average price level. The aggregate dollar value of output is also, however, a measure of the aggregate dollar value of money incomes generated in the process of production. Thus by definition a rise in the price level occurs when the sum total of money incomes increases faster than the aggregate physical volume of output. The fact that this definitional relationship must hold true at all times tells us nothing about the nature of the mechanisms involved. Indeed, as we shall see, the balance of forces that maintains this identity is not only quite complex but also is likely to shift systematically from one phase of the business cycle to the next.

This total of money incomes can be regarded as consisting of two main components, employment income and profit-type income. The latter includes a variety of returns to owners of property or wealth such as profits, interest, rent and miscellaneous investment income as well as capital consumption allowances. Table II shows two different measures of the changing share of labor income in the total since 1953, as recorded in the National Accounts and as estimated, on somewhat different definitions, for the non-farm commercial economy[7].

For the economy as a whole an upward trend is apparent since the early 1950s in the share of net national income accounted for by wages, salaries and supplementary labor income. There are, however, strong reasons for regarding this trend as largely a reflection of the changing structure of the economy. There has been a persistent contraction in the

[7] See Appendix to this chapter for a discussion of concepts and data sources used.

farm and unincorporated business sectors of the economy and a correspondingly marked expansion of non-commercial services and government. Economic activity in these strongly expanding sectors of the economy is not normally organized on a profit-making basis, so that virtually all of the income generated takes the form of employee compensation and this strongly biases the overall trend of income shares. It should also be noted that in the farm and unincorporated business sectors of the economy which have been undergoing secular contraction, the National Accounts do not attempt to separate out of the total income generated in these sectors that part which represents a return to the labor services of owners and other unpaid workers rather than returns to property.

More revealing evidence about the behavior of income shares is provided by the data for the commercial non-farm economy shown in Table II and Figure 5. This is the part of the economy, other than agriculture, which is organized on a private profit-making basis and which generates both employment income and returns to private capital. Agriculture is excluded for a number of reasons, including the sharp random fluctuations in farm income which obscure the short-run pattern of income variation. Income originating in the unincorporated business sector of the economy

TABLE II

Labor Compensation as a Share of Total Income

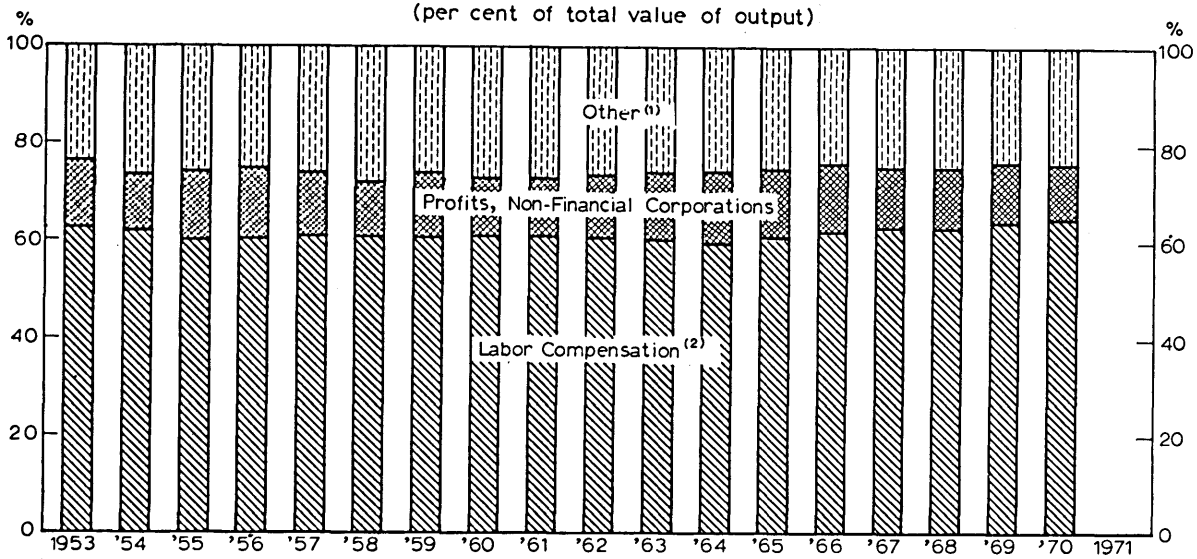
	Percentage of Net National Income[1]	Percentage of Non-farm Commercial GDP[1]
1953	64.9	62.8
1954	67.3	62.2
1955	65.6	60.1
1956	66.3	60.6
1957	69.1	61.4
1958	68.0	61.2
1959	69.0	60.8
1960	69.8	61.3
1961	70.5	61.3
1962	69.4	60.9
1963	69.0	60.4
1964	69.1	59.9
1965	70.1	61.1
1966	70.5	62.2
1967	72.7	63.2
1968	72.0	62.9
1969	72.6	64.1
1970	74.1	65.1
1971	73.9	N.A.

[1] Labor compensation includes imputed compensation for labor inputs of non-salaried working employers, own account workers and unpaid family workers for purposes of the calculation in column 2, but not column 1. See Appendix A. Net National Income as per 1972 revision of National Accounts. Non-farm commercial GDP based on unrevised National Accounts.

Figure 5

NON-FARM COMMERCIAL ECONOMY: INCOME SHARES

(per cent of total value of output)



(1) Capital consumption allowances, interest and miscellaneous investment income, profits of financial corporations, inventory valuation adjustment.

(2) Includes computed labor income of working employees, own account workers and unpaid family workers based on PIC assumptions.

has been divided between employment income and returns to capital on the basis of certain assumptions which must necessarily be arbitrary, but the choice of assumptions does not greatly affect the general picture. These and other technical aspects of the data are described in the Appendix to this chapter.

Over the period as a whole, it is difficult to detect any strong, clear-cut upward trend in the share of non-farm business income represented by employment income. Over shorter periods a cyclical pattern is readily apparent, with distinct phases in which employee compensation has increased more rapidly than profit-type income followed by phases in which the opposite has been the case. Periods in which output has spurted ahead rapidly, such as the mid-1950s and early 1960s, have typically been ones in which the share of profit-type income has risen at the expense of employee compensation. Periods in which the growth in output has tended to level off or decline have been ones in which the share of employee compensation has forged ahead in relation to the share of profit-type income.

What factors underlie this systematic pattern of cyclical variation in income shares?

Both the rise in output and the rise in employment income since 1953 have been associated with varying rates of increase in the quantity of

TABLE III

Unit Labor Costs in the Non-farm Commercial Sector
(percentage change from previous year)

	Per Person Employed		Per Man-hour		Labor Cost Per Unit of Output
	Labor Compensation	Output	Labor Compensation	Output	
1953	7.0	4.5	7.6	5.0	2.4
1954	2.1	2.3	3.2	3.4	−0.3
1955	3.7	6.5	4.3	7.0	−2.6
1956	7.1	3.2	6.9	3.0	3.8
1957	5.2	−0.8	5.9	−0.1	6.4
1958	3.6	3.2	4.0	3.6	0.4
1959	4.2	3.7	4.1	3.6	0.5
1960	4.5	2.0	5.2	2.7	2.4
1961	2.8	3.2	3.8	4.2	−0.4
1962	3.1	2.9	2.9	2.7	0.1
1963	3.6	2.0	4.1	2.5	1.5
1964	4.3	4.1	4.4	4.2	0.1
1965	5.9	2.0	6.2	2.4	3.8
1966	7.4	1.7	8.7	2.9	5.6
1967	7.3	2.2	7.8	2.6	5.1
1968	6.8	4.4	8.0	5.6	2.3
1969	7.5	0.9	9.0	2.4	6.5
1970	7.8	1.9	8.7	2.8	5.8

SOURCE: See Appendix.

labor employed in the productive process. A clearer picture of the relationship between increases in output and increases in employment income can be obtained by dividing each of these aggregates by the average number of persons employed or man-hours involved.

Table III and Figure 6 show the respective trends of commercial non-farm output, employment income, and the relationship between the two on a per man-year or per man-hour basis. This enables us to compare changes in average compensation per person employed with changes in average output per person employed (i.e., productivity) so as to arrive at a measure of changes in the labor cost of producing a given quantity of output. A rise in the labor cost of producing a unit of output can be accommodated in only two ways—either through a corresponding decline in profit-type income per unit or through an increase in the price per unit.

Over the period as a whole, the average annual increase in output per person employed has been at a compound rate of about 2.7 per cent per year. The trend rate of growth in productivity measured on a per man-hour basis has been somewhat higher—about 3.2 per cent annually—mainly reflecting the gradual decline in the length of the average work week.

Short-run movements in productivity tend to display a fairly marked cyclical pattern around the longer-run trend. As economic activity begins to recover from the low point of a recession, output typically rises considerably faster than employment. At this stage cost-conscious firms are wary of hiring many additional employees until they can be more confident that the recovery will continue and, in the meantime, they may welcome the opportunity to reduce the degree of temporary underemployment of their existing staff.[8] This phase of unusually rapid productivity growth typically begins to peter out at a later stage of economic expansion, as output gains begin to run into the limits of existing capacity and firms begin hiring more aggressively. If the slackening of activity leads in turn to the onset of recession, productivity improvement may lag badly for a time or even come to a temporary halt.

The trend of average compensation per employee shows much narrower short-run fluctuations than does the trend of average output per employee. In large measure this degree of stability reflects the fact that wage rates and salary levels are fixed for substantial periods and that their trend over time is notoriously "sticky". Such short-run fluctuation as does occur in average compensation per employee is thus usually a reflection of changes in employee "mix", in the average length of the work week, in the incidence of overtime hours at premium pay, or in the incidence of short-time working rather than sharp changes in the trend of wage rates.

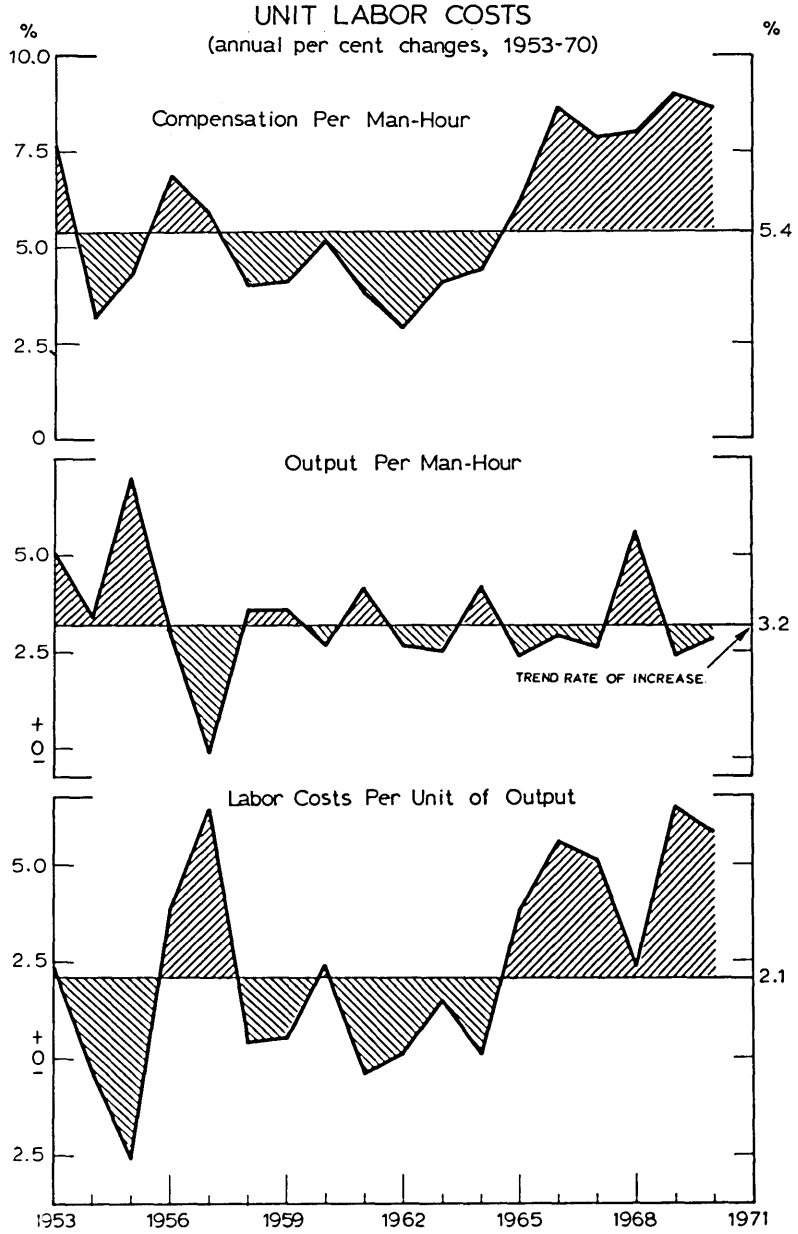
The consequence is that in the early stages of an upturn in economic activity, such as the early 1960s, the marked acceleration of productivity

[8] The underemployment arises because firms find it difficult and costly to reduce the number of their employees in proportion to the decline in their level of output during temporary recessions. This provides scope for unusually rapid productivity gains in the early stages of a business recovery.

Figure 6

NON-FARM COMMERCIAL ECONOMY:
LABOR COMPENSATION, PRODUCTIVITY AND
UNIT LABOR COSTS

(annual per cent changes, 1953-70)



gains may match or temporarily overtake the gradually accelerating rise in compensation per employee, so that unit labor costs remain stable or decline for a time. In due course, however, wage rates begin to rise more rapidly, productivity improvement flags, and unit labor costs move up sharply, reaching their cyclical peak with the onset of recession.

The impact of short-run fluctuations in productivity on the trend of unit labor costs is dampened somewhat by cyclical variations in the amount of overtime hours or short-time working. An upsurge in productivity is likely to be accompanied by a lengthening of the average work week and more overtime hours, which will temporarily raise average compensation per employee somewhat above trend. The opposite is likely to happen when productivity improvement lags.

Even so, however, the typical short-run pattern is for unit labor costs to rise more slowly for a time when productivity improvement speeds up, and to rise more rapidly when productivity lags. Thus, even without any marked change in the rate at which prices and wage rates are rising, a surge in productivity is likely to raise profit margins per unit and lower the income share of employees, as it did in the early 1960s. On the other hand, with slowing productivity growth, the rise in unit labor costs will accelerate and profit margins contract as they did in the later 1960s, altogether apart from changes in the rising trend of prices or wage rates.

The nature of the underlying relationship between unit labor costs, unit profits and the price level may be grasped most clearly if we abstract from short-term variations in productivity growth around its longer-term trend rate of increase. Consider an economy growing steadily at its long-term potential growth rate and at its normal level of capacity utilization. In these circumstances productivity might also be expected to be increasing steadily at close to its long-term trend rate of growth, and this, in conjunction with the trend of average money wage rates, will determine the rate of increase in unit labor costs. In these circumstances historical experience suggests that the respective shares of labor compensation and returns to capital are likely to be reasonably stable, with both labor costs and profit margins per unit of output increasing at about the same "normal" or long-term trend rates of growth. The rate of increase in prices per unit of output will thus be the mirror image of the rate of increase in unit labor costs and in unit profits.

This line of reasoning enables us to predict, at least as a first approximation, what rate of increase in the price level would be compatible with any given rate of increase in average wage rates, if the economy were to operate at normal levels of capacity utilization, productivity improvement and profitability. Thus if hourly wage rates were rising at an annual rate of eight per cent a year and the trend rate of increase in output per man-hour is three per cent a year, unit labor costs, profits per unit and the price level must all rise at roughly five per cent annually when the economy is operating "normally" in the sense defined above.

In the short run, of course, the rate of increase in the price level will lag behind or run ahead of the rate of increase in "normal" labor costs in response to short-run variations in the rate of productivity growth and in income shares. There can be little doubt, however, that the behavior of "normal" unit labor costs is a key element in the whole cost-price structure, and that changes in the trend of "normal" unit labor costs are largely a reflection of changes in the rate at which average wage and salary levels are increasing.

Summary

Though by no means the whole story, the aggregative relationships to which attention has been drawn in this chapter are suggestive of systematic (though lagged) linkages between changes in demand pressure on productive resources and changes in rates of price and cost increase. In themselves, however, they tell us little about the nature of the various mechanisms involved. Some understanding of the possible nature of such mechanisms and some feel for their relative importance can be gained only by descending from the level of broad aggregates to a consideration of the underlying price and wage-setting processes of individual firms and employees groups, and the nature of the international and regional influences involved. This is the subject matter of the next four chapters.

We begin with a discussion of the process by which particular wage rates are determined in particular labor markets—and thus average wage rates for the economy as a whole.

APPENDIX TO CHAPTER I

The Commission is indebted to Statistics Canada for supplying it with annual estimates, based on published and unpublished data, of the following series for the non-farm commercial sector of the Canadian economy for the period 1952 to 1970 inclusive:

Gross Domestic Product at factor cost in current dollars.

Gross Domestic Product at factor cost in constant (1961) dollars.

Persons Employed, obtained as the sum of "paid" and "other than paid" workers. The latter includes working employers, own account workers and unpaid family workers.

Man-hours, obtained as the sum of man-hours worked by "paid" and by "other than paid" workers.

Labor Compensation. This series includes wages, salaries and supplementary labor income for "paid" workers. It also includes an imputed labor income for "other than paid" workers based on the Commission's assumption that such income could be obtained as the product of the number of man-hours worked by "other than paid" workers and two-thirds of the annual average of labor income of "paid" workers, calculated separately for each industry division.

These estimates were made while the 1972 historical revision of the National Accounts was still in progress and revisions were also expected in the Estimates of Employees, so that many figures used are subject to change in the light of more recent information. In addition, all estimates for the years 1969 and 1970 were preliminary.

There are a number of advantages in analysing trends in the aggregate value, quantity and price of output, income shares, labor income and productivity at the level of the non-farm commercial sector rather than for the economy as a whole.

(1) The trend of agricultural output is subject to sharp, random year-to-year variations for climatic and other reasons which tend to obscure the trend of output in other sectors of the economy.

(2) Changes in the output of the government and non-commercial services sectors of the economy are typically estimated on the basis of changes in factor inputs because of the difficulties of direct measurement. Any resulting error in output measurement will affect the behavior of the implicit price deflator. Thus it may be advantageous to focus attention on that part of the economy where changes in the quantity and price of output can be measured more reliably.

(3) Analysis of trends in income shares for the economy as a whole is made difficult by the secular growth of government and non-commercial services, since these sectors generate employment income but not, with minor exceptions, profits or other returns to capital. It is reasonable to suppose that interest in the respective shares of

employment income and returns to capital applies primarily to those sectors of the economy which generate both types of income. For this purpose, the concept of domestic product seems more relevant than that of national product, since the latter excludes the substantial proportion of profits earned in Canada and remitted to non-resident shareholders as dividends.

Annual data for the non-farm commercial sector of the economy covering the period 1953 to 1970 inclusive are given in Table IV in index number form.

TABLE IV

Indexes of Selected Economic Aggregates—Non-Farm Commercial Economy, Canada, 1952–1970

1961 = 100

	W	E	H	GDP	GDPR	GDP / GDPR	W / GDP	W / E	GDPR / E	W / H	GDPR / H	W / GDPR
1952	59.83	88.53	92.62	59.32	67.40	88.02	100.85	67.58	76.13	64.59	72.77	88.76
1953	65.02	89.90	93.55	63.53	71.50	88.86	102.34	72.32	79.53	69.50	76.43	90.93
1954	65.48	88.70	91.34	64.62	72.20	89.50	101.33	73.81	81.39	71.68	79.04	90.69
1955	70.06	91.51	93.73	71.56	79.30	90.24	97.90	76.56	86.66	74.74	84.60	88.34
1956	79.56	97.05	99.61	80.53	86.80	92.78	98.80	81.98	89.44	79.87	87.14	91.66
1957	86.11	99.85	101.80	86.06	88.60	97.13	100.07	86.24	88.73	84.60	87.04	97.19
1958	86.92	97.29	98.78	87.17	89.10	97.83	99.72	89.34	91.58	87.99	90.20	97.55
1959	92.80	99.68	101.32	93.64	94.70	98.88	99.10	93.10	95.00	91.59	93.46	97.99
1960	96.87	99.60	100.57	96.92	96.50	100.43	99.95	97.26	96.88	96.32	95.95	100.39
1961	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
1962	106.58	103.40	103.60	107.30	106.44	100.81	99.33	103.08	102.94	102.87	102.73	100.14
1963	113.39	106.21	105.89	115.19	111.54	103.27	98.43	106.76	105.03	107.08	105.34	101.65
1964	123.50	110.95	110.51	126.44	121.35	104.20	97.67	111.31	109.37	111.76	109.81	101.77
1965	138.00	117.11	116.25	138.62	130.66	106.09	99.55	117.84	111.58	118.71	112.40	105.61
1966	155.30	122.69	120.36	153.12	139.25	109.96	101.42	126.57	113.50	129.02	115.69	111.52
1967	169.44	124.70	121.78	164.52	144.61	113.77	102.99	135.87	115.97	139.13	118.75	117.16
1968	182.03	125.50	121.17	177.53	151.96	116.83	102.53	145.05	121.09	150.22	125.41	119.78
1969	203.09	130.26	124.00	194.39	159.20	122.10	104.48	155.90	122.21	163.77	128.38	127.57
1970	220.17	131.01	123.64	207.63	163.09	127.31	106.04	168.06	124.49	176.08	131.91	135.00

W = *total labor compensation*; E = persons employed; H = man-hours; GDP = current dollar gross domestic product at factor cost; GDPR = constant dollar gross domestic product at factor cost.

SOURCES: Estimates based on Statistics Canada published and unpublished data. W includes imputed labor income of non-salaried working employers, own account workers and unpaid family workers based on PIC assumptions described in text.

chapter two

WAGE CHANGES AND LABOR MARKETS

Introduction

In Chapter I we have looked at the broad pattern of Canada's overall price and cost experience since the early 1950s in relation to the associated patterns of change in a number of related economic aggregates. This has carried us some distance in considering the plausibility of at least some of the hypotheses put forward to explain the nature of contemporary inflation. In this chapter, after some introductory discussion of the major issues, we will examine the way in which labor markets operate in determining the size of wage rate increases.

We have seen that both episodes of relatively rapid inflation in Canada in the last 20 years began with a build-up of unusually strong demand pressure on the economy's manpower and other resources, as have most such outbreaks everywhere in the world. This observation raises awkward problems for those who argue that we experience inflation not because of demand pressures but rather because of cost increases arising from all of us trying to take more out of the economy than we put into it. If so, why do these outbreaks of collective greed emerge only at exceptionally high levels of monetary demand in relation to productive capacity? And why have they subsided in the past during periods of slack demand pressure on capacity?

We have also seen that the respective shares of national income accruing to labor and to capital have varied systematically since the early 1950s in response to cyclical changes in the growth rates of nominal demand, real output and productivity. This observation poses difficulties for those who attribute

our present inflationary problems to the growth of monopoly power exercised by unions or corporations. If unions exert such a powerful influence over average wage levels in the economy, why did the share of income represented by compensation of employees decline persistently from 1957 to 1964? Similarly, if corporations have so much power to influence their environment, why were they unable to prevent a persistent decline in the income share going to profits from 1964 to 1970, culminating in a sharp fall in the absolute level of profits in the latter year?

In addition to raising questions of this kind about alternative hypotheses, the aggregative evidence strongly suggests that the response of costs and prices to changes in the rate of demand expansion normally lags behind the response of output and employment. If price and wage trends responded fully and immediately to a quickening of the rate of demand expansion, the growth rates of output and employment would remain unaffected by a surge of money demand. There are still a few markets in modern economies where prices respond in this flexible manner to short-run changes in demand but this is not the way the process works in most areas of the economy. Typically, the initial response to a stepping-up of the rate of demand expansion is not so much an immediate acceleration of price and wage inflation as a quickening of output and employment growth, a rise in profit levels, followed only some time later by faster rates of increase in prices and wages. Similarly, the typical response to a slowing of the rate of demand expansion first takes the form of a slowing of economic activity, a decline in profit levels, and whatever moderation of the rate of increase in costs and prices eventually occurs is unlikely to develop for some time.

Thus analysis of economic behavior at the aggregate level provides some support for the view that when inflation persists in the face of economic slack, this may be partly a matter of lagged responses in the process of cost and price adjustment. On the other hand, evidence that costs and prices do not respond very quickly or fully to changes in demand leaves unanswered the question of why this should be so.

While something can be learned by testing hypotheses against aggregative evidence for the economy as a whole, it is not surprising that research at this level does not provide very strong grounds for discriminating among alternative explanations of the phenomenon in question. For one thing, the historical experience which is of primary relevance for the hypotheses we are examining is very short. Since it is only the period of the late 1950s and that of the early 1970s which is regarded as providing an example of the "new inflation" in Canada, we have only two cases to analyse. It should not be expected that a great deal can be learned from such a limited sample. There is, of course, a wide range of experience at the aggregate level for other times and other countries which is also relevant, but for close-in work which involves drawing fairly fine distinctions we lack the extended repetition of events which would provide a measure of certainty.

The Problem Re-stated

The central question we posed in the preceding chapter was why inflation has persisted so strongly under recent conditions of economic slack. As we have seen, it is not possible to find a definitive answer to this question by examining the aggregative evidence alone. Rather, it is necessary to examine how things work out in individual markets to find a satisfactory explanation for the behavior of costs and prices at the aggregate level. Before doing this it is worth reminding ourselves how we should expect the prices of goods or labor services to respond to a decline in the rate of demand expansion in a typical product or labor market.

To take a concrete example, consider an economy in which real output has been growing steadily at its equilibrium rate—determined by labor force growth, capital accumulation and productivity improvement—of five per cent a year. Let us suppose that the nominal value of the output sold i.e., the level of demand in money terms, has been rising at a rate of 10 per cent a year. This means that the price level has been rising by five per cent a year and the average wage level by, let us say, eight per cent annually. It also means that in a typical product or labor market of this economy, the equilibrium rates of growth in nominal demand, output, employment, prices and wages characteristic of the economy as a whole also prevail.

What happens in these typical markets if the rate of expansion of aggregate demand is slowed down to seven per cent a year? Obviously, the effect on the growth rates of output and employment in this part of the economy will depend on the response of its prices and wages. If there is not an immediate and corresponding deceleration of the rates at which its prices and wages have been rising, underutilized physical capacity and higher unemployment will develop in this firm or industry.

Seeing markets in which supply temporarily exceeds demand at existing price and wage levels, an observer might well conclude that price and wage levels in these markets ought to be falling in absolute terms or at the very least should not be rising. This is based on a misreading, however, of what would happen if markets adjusted instantly and smoothly to a change in the rate of demand expansion of the kind postulated. If all markets were continuous auction markets, the rate of price increase in the typical market for output would not fall to zero or become negative. It would merely have to slow down to two per cent a year in order to restore the equilibrium rate of increase in real output of five per cent a year. Similarly, a slowing of the annual rate of increase in wages from eight per cent to five per cent would restore the balance between demand and supply in the labor market. In short, if market equilibrium were maintained throughout the adjustment process then supply and demand would continue to be equated at positive rates of increase in wages and prices rather than zero or negative rates of increase.

This helps to clarify what has to be explained when a relatively modest reduction in the rate of demand expansion in money terms has led to a rise

in unemployed resources. Under these conditions it is not necessary to explain why unemployment of labor and excess capacity in the typical market fails to lead to a decline in prices and wages or to zero change. All that needs to be explained is why rates of wage and price increase fail to adapt fully and at once to the slackened rate of demand expansion—in short, why a fairly high positive rate of inflation does not immediately give way to a lower positive rate.

The Need to Disaggregate

It is often convenient to talk about the economy as if it were one large organization and to discuss its "behavior" in terms not very different from those used to describe the behavior of individual firms and households. We know, however, that the concept of a national economy is a highly abstract notion. Such an abstraction simplifies the complexity of the real world to the point where basic economic relationships can be grasped by those concerned with economic management, but the degree of simplification can be serously misleading if carried too far.

The economy is not, in fact, a single entity, but rather a complex organism with a great many interrelated parts and a vast array of different markets, each of which has a number of participating firms, groups and individuals. It is these firms, groups and individuals operating in particular markets who determine particular prices and wages. Thus even if experience at the aggregate level were sufficiently extensive to permit reliable generalizations, we would still be uncomfortable in not being able to account for what happened in terms of the behavior of the decision-making units involved. It is the circumstances facing these individual units which condition their response to changing market forces, and the sum of these individual reactions shapes the response of the economy. Since, in fact, we have such a limited range of relevant experience for the economy as a whole it is essential that we test alternative hypotheses purporting to explain inflation by studying the behavior of firms, organized groups and individuals.

The Role of Uncertainty

If one bears in mind the complicated diversity of individual markets in which firms and individuals operate, it is little wonder that response to changes in overall economic conditions is far from swift. The market conditions facing particular decision-makers at any point in time differ widely and arise from many different sources. Some of these influences are specific to a particular enterprise, others are specific to a particular industry or region, and still others are related to general economic conditions. Of course, when overall economic conditions change, the situation in individual markets tends to alter in the same way; but this is certainly not true for all markets, especially when we are considering comparatively mild variations in general economic conditions such as those experienced over the last two decades.

Many sources of economic disturbance affecting particular product or labor markets are random, self-reversing occurrences to which firms would be unwise even to try to react since by the time these disturbances were perceived they would already be disappearing.

Changes in market conditions do not come neatly labelled for the benefit of those they affect. Perhaps a particular disturbance is simply a chance occurrence. Perhaps it is of more enduring character, but related specifically to the situation of the firm or industry. Perhaps it is of a more general character. But even when a particular economic decision-maker is aware that a general change in economic conditions is occurring, it is usually far from clear how the change will affect his own situation.

Thus most economic decisions are inevitably made in situations surrounded by a great deal of uncertainty. Not surprisingly, changes in market conditions are not perceived immediately, nor is the appropriate response at all clear. Considerable time may elapse before much reaction to changes in market forces can be expected to occur.

Uncertainty in Labor Markets

These considerations apply particularly in labor markets, and given the important role of unit labor costs in price determination which we pointed out in the previous chapter, are clearly of crucial significance. Labor is not some commodity with standardized specifications, like barley or coal, that can be acquired readily and easily through an organized market. Instead, individuals possess a very heterogeneous set of skills, characteristics and aptitudes that are relevant to employers. Similarly, a very wide variety of jobs are available in the economy, only some of which are appealing to particular individuals. This means that job-seeking and recruitment in the labor market often involve expensive and time-consuming processes of gathering information about available jobs and available job-seekers. It also means that it is virtually impossible for a particular job-seeker or employer to know fully the range of opportunities facing him, or to perceive very readily that circumstances are changing in ways requiring an alteration in existing patterns of wage-setting.

To see the nature of these problems more clearly, it is worth considering under what circumstances an employer might be induced to offer unusually large wage increases. He would tend to give increases larger than those generally considered to be the norm in relevant areas of the labor market when he wants to make it easier to attract people to his employ, or to make it easier to keep those who are working for him from leaving. This circumstance will normally arise when he feels that he is facing increasing problems in recruiting new employees or keeping his present ones. For this to occur, not only must existing or potential workers believe that their chances of getting better jobs elsewhere have improved, but the employer must perceive their reaction to that belief. Since people often resign in any case for other

reasons, and since other factors may also affect how easy it is to get workers, it is no wonder that it may take some time before the need for a different wage policy becomes evident.

It is equally difficult for employers to recognize a change in the labor market conditions facing them that would make wage increases smaller than the prevailing norm appropriate. One sign of such a change would be that employees were not resigning for pay reasons and would not leave even if lower than normal wage increases were forthcoming. Another indication of an easier labor market would be less difficulty in filling positions at the going wage rate or even lower rates. Since the circumstances facing an individual firm are often affected by random influences, however, it may well take some time before it is recognized that these indications of an easier labor market are the result of a general change in economic conditions.

Uncertainty about what is happening in particular labor markets leads to delayed reactions to a general change in economic conditions, and these response lags are increased by the time dimension of transactions in labor markets. It is easy when considering the effect of changes in supply and demand conditions in any particular market to slip into thinking of that market as generating price responses by a kind of continuous auction process. A moment's reflection on the nature of the labor market, however, makes it clear that there are very few cases indeed in which methods of granting wage and salary increases permit such immediate flexibility in rates of employee compensation.

Indeed if one is looking for an analogy, decisions on the part of employers and employees which determine the size of wage increases are more like decisions by landlords and tenants which determine property rents than they are to the bids and offers of participants in an auction market. This is obvious in the case of collective bargaining agreements extending over one, two or three years. Unlike someone offering an apartment for rent, the unionized employer is not of course guaranteeing the employment of particular union members for the contract period, but he is agreeing that over the life of the agreement he will pay stipulated wage rates to his employees.

It is perhaps less obvious that something very similar to arrangements of this kind exists even where there is no formal collective bargaining agreement and no union. Thus if wage increases are given annually, in effect the firm is entering into an agreement with employees for that period of time.

This periodic characteristic of most wage-setting means that there are limits to the extent to which there can be an immediate response to changes in economic conditions. At any point in time arrangements will already have been made stipulating the rates of compensation which will be received by most employees, whether for the next three months or for the next three years. Barring a very drastic change in circumstances these will in fact be the rates paid over the next three months or three years even though economic conditions may already be changing substantially. Thus even if there is a recognized change in labor market conditions generally employers

will have a tendency to postpone adjustments until the usual time for pay revisions comes around again. To the extent that an increased demand for labor is reflected in newly settled pay increases, there will of course be an immediate rise in the month-to-month average of wage and salary increases. It may take as much as a year, however, before most of the wage structure has adjusted, and for those employees with two or three-year contracts the adjustments will come even later. Similar delays in wage adjustment will occur when the change in labor market conditions is in the opposite direction.

Long-Term Considerations in Wage Determination

Once it has become widely recognized that a general change in economic conditions has occurred and the customary time has arrived for revising wage and salary levels, it might be expected that the altered situation in labor and product markets would quickly be reflected in the decisions taken. Since any such effect either on union or on non-union wage settlements in recent years has been surprisingly limited even after a considerable lapse of time, something more appears to be involved than simply a lagged reaction. In considering what these additional factors might be, we begin with a discussion of non-union labor markets, postponing until later the question of what effects the existence of unions might be expected to have on the process of wage adjustment.

What needs to be explained is why, when it has become evident both to employers and to employees that a substantial change has in fact taken place in labor market pressures, that the average size of pay increases shows such a limited reaction.

The answer may be that even if employers and employees have both come to recognize that at least a temporary change in the pressure of demand for labor had occurred, employers may not feel it to be in their long-term interest to take advantage of what may turn out to be a temporary situation. Instead, they may prefer to continue to offer something close to past wage and salary increases unless and until it becomes clear that the change is more than temporary.

It is not difficult to see why employees would prefer customary pay arrangements under which temporary economic set-backs brought little or no reduction in the usual size of wage or salary increases. If employees set a high value on wage treatment of this kind, it may also be advantageous for the firm or organization to maintain a reputation for being a "good employer" in this regard. Such a reputation may make it possible to get and keep a higher quality labor force for the same price, or one of equal quality at a lower price, than would be required if there were less stability in employer-employee relations.

The emphasis many employees place on security is a consequence of the fact that for most people the bulk of their income is derived from their jobs, rather than from material wealth or property. Markets in jobs have

important differences from markets in other assets. In the first place a man cannot make a permanent sale of his services nor can he even lease them on a long-term basis, since indentured labor is illegal.[1] Moreover, given that the individual must "own himself" there is no easy way in which he can diversify. He cannot exchange a piece of his equity in himself if he is a plumber in Toronto for a share of a dentist in Vancouver. This places him in a vulnerable position. If the price of his particular skill were to fluctuate like that of a commodity on a free market, the individual would be faced with a considerable measure of insecurity.

There is a good deal of evidence that most people are averse to risk—at least when a significant proportion of their total assets and income is involved—and studies of behavior in financial markets and the existence of the insurance industry tend to confirm this. Risk aversion means that many employees in an uncertain world will pay something to reduce that uncertainty; that is they will prefer a lower expected average real wage with a smaller potential variability, to a larger expected real wage with the prospect of wider variation. Many employers with reasonably stable demands for labor over the course of business fluctuations can go a long way towards meeting this preference of many of their employees. Some, particularly governments, can offer both job security and an implicit guarantee that wages and salaries will be kept broadly in step with comparable rates of pay elsewhere. Some private employers can offer virtually complete job security for all their regular employees together with a reputation for "fair" treatment. Other private employers faced with wider fluctuations in output can only offer a reasonable measure of job security for their established people, but they too can develop a reputation for basing their treatment of employees on considerations which are as long term as their economic situation permits.

This analysis may go some distance in explaining why few firms react to an excess supply of labor by holding down wages and salaries and by bringing in lower cost recruits to replace some of their existing employees. If a firm is prepared to grant wage increases higher than those required by current market conditions, and if it is also prepared to retain some existing employees even when the return in terms of current output[2] is well below the price they are paying for them, then there will be a sharp fall in recruiting and a form of "job rationing" will take place at the existing wage[3]. Those who have ration coupons—i.e., those with jobs—get something like their usual wage increase, while those without jobs cannot

[1] The market for university teachers is sometimes described by those looking for appointments as a slave market. When permanent tenure enters into the bargain in this market, however, it is the employer rather than the "slave" who binds himself.

[2] It will be worthwhile for firms to retain employees at some current loss in order to avoid future hiring and training costs. It is suggested in the text, however, that even higher current losses are justified if by establishing a reputation as a good employer the firm is able to hold equivalent staff at lower rates over the long run.

[3] This "job rationing" gradually disappears as demand rises and firms find it increasingly difficult to obtain recruits at the wage they are offering. Of course, in situations where unions have been able to raise the wage well above the free market price some "job rationing" may exist at all levels of demand.

easily get employment even if they would be prepared to undercut the market price. For the firm, buying less expensive labor would mean displacing some existing employees with consequential bad effects on personnel relations, and in any event the reduced price might still be above the immediate value to the firm of the labor services involved. Thus a different policy is followed with respect to labor than with respect to other cost elements. A manufacturer may ruthlessly replace one source of materials by another if the new supplier is prepared to shade the price, but he is usually much more loath to do this if people rather than things are involved.

The tendency to treat labor in a quite different way from other inputs has led to much stress being placed on the "social" aspects of labor markets. In a recent revision of his *Theory of Wages* the English economist, Sir John Hicks, recalled the attention he had given to this aspect of the labor market in his first edition 40 years ago, and pointed out the importance in this market of confidence in fair treatment over time and the avoidance of feelings of injustice. To the extent, however, that a "good employer" can obtain economic benefits over the longer run from the employment and pay practices associated with such a policy, his apparent "non-economic" behavior in the short run is capable of "economic" explanation in a longer-term perspective.

The extent to which firms and organizations will think it worthwhile to be "good employers" in order to maintain morale and avoid the loss of valued personnel will vary from firm to firm and industry to industry. Some firms in some industries rely sufficiently heavily on casual employees that there is little incentive to use techniques designed to maintain a good continuing relationship. In a number of these cases pay scales will be heavily influenced and sometimes determined by the legal minimum wage. In others, pay increases will respond fairly quickly to the difficulty or ease of hiring and retaining employees.

On the other hand, many firms and organizations have developed techniques which keep their employees reasonably happy without management having to spend an inordinate amount of time on personnel matters. As we shall see when we discuss the results of our empirical research, there has been a widespread adoption in recent years of "scientific" pay practices in which the pay increases of a firm or organization are related through pay surveys to the wage and salary increases given elsewhere. This lends a certain automatic quality to pay decisions and ensures that, except in the face of a very serious change in the fortunes of an individual company, a scaling down of pay increases may have to become fairly general and widespread before it has much effect on the pay increases of a particular firm.

There is reason to suppose that when firms have long-term pay policies this will have an asymmetrical effect on wage changes in response to changes in labor markets. Thus, when labor markets weaken the firm may feel it desirable to continue matching the increases of others unless there has been

a very drastic decline in its earnings. For some time, therefore, wage increases may not decline very significantly in the face of greater ease in hiring and retaining employees. On the other hand, when labor markets tighten and firms are no longer able to obtain enough employees they will find it profitable to pay what is necessary. Thus an equivalent change in labor market pressures may produce bigger increases in pay raises when the market tightens than the decreases produced when there is an equivalent degree of slackening.

We have now analysed some of the reasons for lags in wage response in non-union labor markets, and pointed out that if the changed conditions in labor and product markets are thought to be only temporary, there may be very little response at all. We now turn to an analysis of the unionized labor market.

The Effect of Unions on Wage Determination

The fact that unions are involved does not alter the problem of recognizing that a change in economic conditions has occurred. It is true that union leaders may be in a better position to assess the developing economic situation than individual employees, but the wishes and views of the union membership will necessarily play a large part in the decisions taken. Thus here, as in the non-union sector, there will be a good deal of uncertainty about the prospective market situation facing the firm, industry or the economy generally.

In addition, there is a time dimension to union contracts which is generally longer than that associated with periodic pay increases in non-union situations[4]. Thus the opportunity to react to a change in economic conditions is often subject to longer delays than when no formal bargaining takes place. Moreover, bargaining takes time and this in itself introduces further delays. Finally, the contract period extends for a considerable period ahead and this limits the degree of flexibility in the size of wage adjustments that can be expected.

We shall return to a discussion of these and other influences on the response of union settlements to changes in economic conditions. Before doing so, however, we digress briefly to consider the views of those who regard unions as a chronic source of upward pressure on wages and prices.

It is easy to understand how views of this kind come to be held. One of the main functions of unions is to try to raise the wages of their members. Since this is almost invariably done in the face of opposition from employers, it appears obvious that union activity usually results in higher wages than the employer would be willing to pay in the absence of the union.

In general, this is in fact the case. By bringing collective pressure to bear on their employers backed by the threat or use of strikes, unions are ordinarily

[4] While they are longer in the sense relevant here, they are not, of course, longer than the kind of implicit "contracts" we referred to in the earlier discussion of non-union labor markets.

able to win more favorable working conditions and higher rates of remuneration for their members than they could obtain otherwise.

The extent to which unions can accomplish these ends is subject to limits, however, since the process is not without consequences both for the union members and for their employers.

With given productivity increases, higher relative wages involve higher relative costs for the industry and result in either a reduction in profit margins or higher relative prices for its output. Higher prices in turn means that less output can be sold; the size of the reduction being dependent on the extent to which close substitutes for the product exist, and the extent to which the costs of competitors are also being pushed up.

The latter consideration suggests that the ability of unions to raise wages is greater when they can put pressure on most of the major suppliers in an industry than when they operate in only a small part of an industry. Even when they affect all of an industry, however, the usual result of higher wages is to raise unit labor costs and thus to reduce output and employment. The reduction in employment will be the greater the more readily employers are able to substitute other factors of production for labor.

It follows from these considerations that any union, be it large or small, is faced with a trade-off between levels of compensation and levels of employment for its members, and at any point of time it must decide how far it is desirable to press demands for higher wages. Given that these decisions have to be reached in an on-going economy with money wages rising year by year and a good deal of uncertainty about the market conditions likely to be facing the firm, the industry or the economy, these are difficult decisions to reach.

Over the years, however, such decisions are taken, bargaining occurs, trials of strength take place and unions obtain differentially higher wages for their members, the size of such differentials depending on the relative strength of the unions involved. Given the existence of these differentials, the question for unions is whether it is in the interest of their members to try to widen them further, even though this may adversely affect the amount of work available for their members.

On the face of it the answer seems to be clear. If the position of unions becomes more powerful than in the past, or if they learn to exert such power as they possess more vigorously than in the past, they may be able to widen even further the existing gap between the wages received by their members and those received elsewhere in the economy. In the absence of changes of this kind, however, it is difficult to see why these differentials would widen. Unless the extent of unionization of the labor force has increased, or the powers of unions have been strengthened, or they have learned to use their power with greater vigor, a convincing case cannot be made that the mere existence of unions results in continuing upward pressure on wage levels generally.

It has sometimes been argued that while unions alone cannot create inflation, they can do so in conjunction with those responsible for demand management. The easiest way to visualize this possibility is to think of a situation in which virtually all employees in a country belong to one big union. If, given the rate of demand expansion, the members of this union force large wage increases on employers, then unemployment will rise. If in response to public outcry against rising unemployment the government raises the rate of demand expansion, this will make possible an increase in prices, a decline in the rate of increase of real wages, and a resulting reduction in unemployment. The one big union, seeing its money income increases eaten up by price increases, could then demand another large increase in money wages and the process would be repeated.

It is evident that even if there were one big union and it were in a position to impose its will on the economy, it might not be able to bring about a rise in the rate of real wage increase through this technique. The conclusion might then be reached that bargaining should be on real wages rather than money wages and it would then not be possible for the government to avoid unemployment by lowering real wages through inflation.

In the case of North America, it is relevant to this argument that the labor forces of Canada and the United States cannot be described even approximately as being organized in one big union. It is true that there is no definitive way of determining the total influence of unions. It could be argued that the statistics which show only a third of Canadian employees as members of unions understate their influence. Many non-unionized employees of unionized firms obtain the same increases as unionized employees and there are many firms which regularly adopt union scales or better as a means of avoiding unionization. It could be maintained, therefore, that the proportion of the Canadian labor force which has its wages and salaries determined by union agreements is closer to one-half than to one-third.

It could be argued equally easily, however, that there are vast differences in the power of various union groups and that there are employee groups which are not formally certified which exercise more power than many unions. Any quantitative measure of those able to exercise a significant influence over their own wages and salaries is thus open to question. What is not open to question is that, with the degree of unionization in Canada between 1958 and 1964 very similar to that of recent years, inflation was not a serious problem during that period. It was not until a rapid expansion of demand set off a rise in wages and prices that conditions arose which lent some plausibility to the union-push theory. On the other hand, in a number of European countries, many informed observers have reached the conclusion that events can be most effectively explained in terms of the one big union hypothesis.

Both employers and unions are frequently baffled by the contention of many economists that there is considerable doubt that unions have had any substantial effect on the distribution of income between employees and

owners of wealth or property. The argument is a relatively straightforward one. Granted that unions can raise money wages in those parts of the economy in which they exercise their power, the level of employment in those sectors is adversely affected. Those who cannot find work in unionized industries may remain unemployed for some time, but over the longer run they will find their way into employment in other sectors. The pressure of labor supply in the latter areas of the economy will tend to lower relative wages. It is possible that the net effect will be to lower the average rate of return on capital and thus shift income from property owners to employees, but in many economies this does not appear to have happened. In an open economy like Canada's with large international flows of long-term capital, it is difficult to see how domestic labor practices could in fact have large or long-lasting effects on returns to investment without also having substantial economic effects of a more general kind. If returns to property are not reduced significantly as a result of union activity, the gains won by employees in the unionized sectors of the economy must be offset by correspondingly lower wage and salary increases in other sectors.

Whatever the long-run effect of unions on the share of real income accruing to labor, it seems clear that in the absence of an increase in union power or an increased use of that power, there is no reason to expect the average rate of money wage increases to become higher simply because a significant proportion of the economy's work force is unionized. On the other hand, the timing of response of such increases to changes in market conditions could be affected. We have already indicated that there are reasons for expecting longer lags in the wage adjustment process when collective bargaining is involved than when it is not. These lags include the delay before contracts come up for settlement, the time taken in bargaining and the length of the future period over which contracts take effect. When employers complain, however, about the unresponsiveness of union demands and union settlements to a change in economic conditions, it is not merely delays of this kind that they have in mind.

On the face of it there is a vast difference between the circumstances in which wage increases are granted in non-union situations and in unionized employment. In the one case an employer may, of course, decide to continue to give substantial pay increases until it is abundantly clear that any change occurring in the economic climate is more than temporary. In the union situation, however, an employer is faced with what looks like a much harder choice. Either he must grant a wage increase which he thinks is excessive, or he must be prepared to undergo a lockout or risk a strike with all the short-run consequences for profitability which such action implies. Duress of this kind appears quite unrelated to the considerations influencing wage decisions in the non-union sector.

It remains true, however, that both employers and unions must reach a judgment on the extent to which a change in market conditions is merely temporary or more fundamental and long lasting. If there is a difference

of view between management and labor on future market prospects, with employers more pessimistic than the unions, this disagreement may well be reflected in a rash of work stoppages.

It would appear that unanticipated inflation frequently tends to lead to a divergency of view on future prospects. In Figure 7 the proportion of working days lost through strikes and lockouts in the last half-century is plotted against year-to-year changes in the Consumer Price Index. It is noteworthy that the largest annual time losses have come during periods of abnormally rapid price increase.

Empirical Evidence

The quantitative studies carried out for the Commission on the factors influencing the size and timing of wage changes in Canada have confronted the usual complexities involved in analyses of wage determination.[5] In addition, they suffer from serious data limitations. It is unfortunately the case that we do not have enough relevant, detailed and reliable information on wages and salaries, fringe benefits, productivity, labor market conditions and income shares over a sufficiently long period to permit firm conclusions to be drawn.

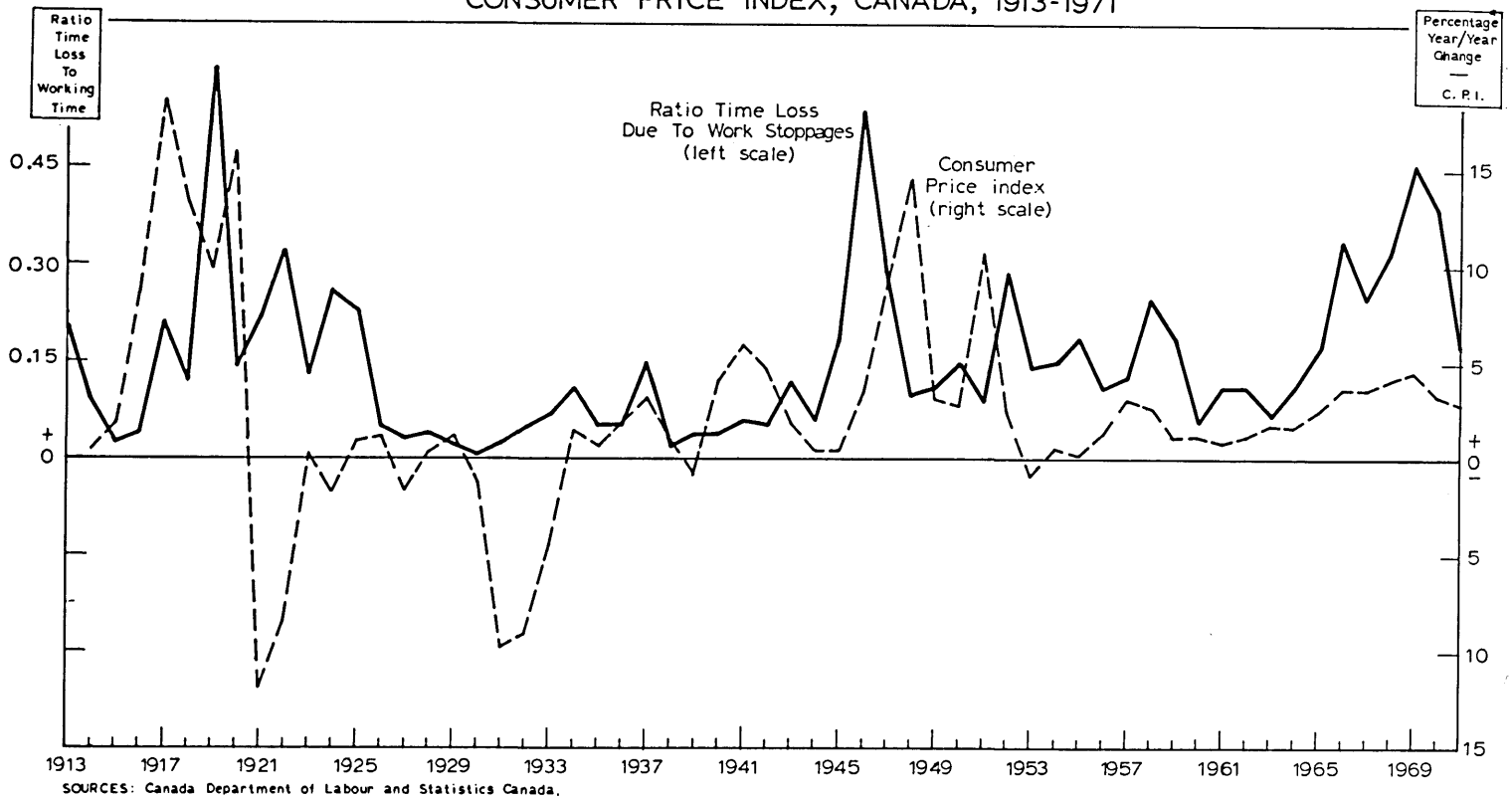
Our studies made use of the annual survey of prevailing wage rates compiled by the Department of Labour for major industrial groups, together with data on new wage settlements and base rates in force under major collective agreements in industries other than construction. In addition, use was made of series compiled by Statistics Canada recording average weekly wage and salary earnings, at much the same level of aggregation, and average hourly earnings in certain broad industrial divisions. These, unfortunately, are the only series on a monthly or quarterly basis which are available over any considerable run of years and are thus the ones on which research has concentrated even though they are inappropriate for many purposes. Various earnings, wage and labor-cost figures were employed to give a finer but still fairly general breakdown. In manufacturing industries where data are more reliable, average hourly earnings were examined both for the total and for major manufacturing groups, to establish the patterns shown over time and among various industries[6]. Finally, we have examined the wage changes of a limited

[5] Our own studies include those by L. D. Taylor, S. J. Turnovsky and T. A. Wilson, *The Inflationary Process in North American Manufacturing;* B. L. Scarfe, *Price Determination and Process of Inflation in Canada;* J. G. Cragg, *Wage Changes in the Canadian Economy;* J. G. Cragg, *The Use of Proxy Variables;* G. G. Johnson, *Non-Union Wage Changes in Canada;* and W. Thirsk, *Regional Problems of Inflation and Unemployment.* Earlier studies include R. G. Bodkin, E. P. Bond, G. L. Reuber and T. R. Robinson, *Price Stability and High Employment,* Ottawa, Queen's Printer 1966, Economic Council of Canada, Special Study No. 5; G. L. Reuber, *Wage Determination in Canadian Manufacturing Industries,* Ottawa, Queen's Printer, 1968, Prepared for the Task Force on Labour Relations; G. Saunders, *Wage Determination in Canada,* Canada Department of Labour, Occasional Paper No. 3, 1965.

[6] This investigation is contained in Taylor, Turnovsky and Wilson, *op. cit.* The wider investigations, which are even more hampered by the lack of information are found in Scarfe, *op. cit.*, and Cragg, *op. cit.*

Figure 7

ANNUAL TIME LOSS DUE TO WORK STOPPAGES AS A PERCENTAGE OF ESTIMATED TOTAL WORKING TIME, AND YEAR-TO-YEAR CHANGE IN CONSUMER PRICE INDEX, CANADA, 1913-1971



SOURCES: Canada Department of Labour and Statistics Canada.

sample of individual firms by interview, questionnaire and a study of their reported wage rates[7].

Studies based on this rather heterogeneous statistical information yield results which are broadly consistent with the hypotheses about wage and salary changes which have been put forward above. Particular studies, however, attach differing weights to the various factors involved, and the studies taken as a whole do not provide conclusive support for any one point of view. The findings of these studies contain enough anomalies to suggest that important issues remain unresolved, and that while more research may be needed, at least at present the gaps in the available information preclude the establishment of firm conclusions. This is not surprising. The statistics are inadequate in various ways, and it will be a long time before information is available of the kind needed to narrow the theoretical and empirical differences which still characterize debate on the determinants of wages and salaries.

The general conclusions of our studies are as follows. First, it appears that demand pressures in the labor market are an important determinant of wage and salary changes. In some cases these labor market conditions are best represented by the unemployment rate; in others, by vacancies, by changes in employment or by a combination of these quantities. Some studies, though not all, suggest that demand pressure in product markets and the level of profits may have additional effects.

Second, the studies tend to find that past experience with respect to inflation plays a role of the kind suggested in our discussion of implicit long-term arrangements between employers and employees. Thus, given the degree of demand pressure in the labor market, wages will increase more rapidly the more rapid has been inflation in the recent past. In some cases this effect is caught by past rates of changes of prices, in others by past rates of change of wages. In either instance, the finding is usually taken to indicate the importance for the wage-setting process of expectations formed on the basis of past experience. An additional, though related, factor is prevailing rates of pay, or recent pay increases, in certain other industries, confirming the belief that as employers and employees become aware of rates of pay in comparable occupations wages in their own industry tend to be adjusted.

There are also cases where investigators find that changes in wages in the United States have an effect on Canadian wages[8]. This has often been regarded as a non-market form of emulative behavior, but it is important to remember that general economic conditions in Canada are typically very much affected by those existing in the United States. As a result, rates of increases of wages in the United States may well provide a useful indication of the order of magnitude of increase that would be warranted by conditions in the Canadian market. This question will be discussed in greater detail in a later chapter. Quantitative studies of wage change have two other features

[7] Cf., Johnson, *op. cit.*

[8] Cf. especially Bodkin, Bond, Reuber and Robinson, *op. cit.*, and Taylor, Turnovsky and Wilson, *op. cit.*

which bear on the present discussion. First, they generally show that there are long delays before the full effects of the changes in market conditions which produce wage changes are realized. This, of course, is consistent with our discussion of the uncertainty that is particularly apparent in the labor market and with the mutual desirability of long-term arrangements. A second finding, indicating asymmetry in the response to unemployment changes, is consistent with the views expressed earlier about the implicit understandings that exist between many employers and their employees. It is found in most cases that starting from any particular unemployment rate, a given reduction in the rate is likely to lead to a greater acceleration of average wage increases than the amount of deceleration brought about by a comparable rise in the unemployment rate. It thus appears that greater losses of employment are involved in reducing the average size of wage increases by a stipulated percentage than the employment gains recorded when the average size of such increases rises by a similar percentage.

There are hints in some of the studies that the increasing share of income going to income taxes has been a source of upward pressure on wages through its adverse effect on levels of take-home pay[9]. In general, of course, efforts to offset the effects of the progressive income tax by increasing nominal wages and salaries cannot fully succeed, since rising average wage levels merely tend to produce a still larger share for taxes. Nevertheless, the public's attempts along these lines to resist the tendency of governments to claim an increasing share of income may have exacerbated the problem of controlling inflation.

The existence of substantial lags in the adjustment of wages to changing labor market conditions, together with the influence of past price and wage increases on current wage increases, mean that the connection between unemployment and inflation is not a simple one between less unemployment and higher rates of wages and price increase. Instead, the nature of the dilemma facing the economy is that low rates of unemployment tend to be accompanied, at least for a time, by accelerating rates of increase of prices and wages[10]. Thus to restore reasonable stability even in the rate at which prices are rising may, in the absence of other measures, require substantial unemployment once severe inflation has been allowed to develop. It also follows from these quantitative studies that if reliance were placed on demand restraint alone to deal with an entrenched inflation, a return to more modest rates of wage increase might well involve a long period of abnormally high unemployment.

In addition to carrying out broader quantitative studies the Commission initiated some research which concentrated more closely on the wage determination decisions of particular non-union firms in various parts of the country.[11] Some of the conclusions of this research are quantitative in nature

[9] Taylor, Turnovsky and Wilson, *op. cit.*

[10] We discuss more fully the question of acceleration of rates of increase of wages and prices when the unemployment rate is low in Ch. VI.

[11] See G. G. Johnson, *op. cit.*

but many of the more interesting responses drawn from questionnaires and interviews are qualitative in nature. The results of this study suggest that factors on both the supply and demand side of the market have contributed to the recent lack of responsiveness of wage increases to the existence of economic slack.

In discussing the extent to which pressures in the labor market had eased since the end of the 1960s and firms had experienced a more ready supply of labor, a number of employers pointed out that in fact the availability of willing and qualified people had not altered as much as might have been expected. Some support for this point of view is to be found in the recent behavior of the unemployment rate for males aged 25 and over. This rate reached a peak level of 5.6 per cent in the summer of 1970 and has since declined below five per cent. In the recession of the early 1960s, by contrast, it had reached a peak of 7.8 per cent.

Various factors were mentioned as contributing to this limited change in labor availability. These included the improved access of unemployed persons to private and public support, which allowed them to remain without jobs for longer periods and to be more selective in the jobs they wanted. This was frequently coupled with reference to changing attitudes to work, resulting in people effectively withdrawing from the labor market temporarily or permanently, although still considered to be unemployed.

Reference was also made by a number of employers to the effect on their labor costs of increases in minimum wages in recent years. A number of firms which had made a practice of operating close to minimum wage levels found it necessary to make upward adjustments in their wage structures. Table V includes an index of average minimum wage rates taking into account industries under both federal and provincial jurisdiction and using as weights the number of workers employed. This can be compared with the indexes of general wage rates, the industrial composite of average weekly wages and salaries, and average hourly earnings in manufacturing. Between 1965 and 1970 the average level of minimum wages rose by about 56 per cent while the other indexes of wage rates or earnings rose by 39 to 44 per cent. The further increase in minimum wages in 1971 was only marginally below the other three indexes. In view of the very large increases in average minimum wages which occurred in 1969 and 1970, it is not surprising that this appeared in the results of a survey made in 1971. Frequent mention was also made of increased competition from the pay scales of government.

These observations by private employers have been voiced often enough in the past not to occasion any surprise when they turn up in the results of a survey. What is perhaps more interesting is the impression gained of changing methods of handling wage and salary administration in a number of non-union firms, and the effect this may be having on the wage adjustment mechanism. What has happened in recent years is that a number of large non-union firms have adopted wage and salary administration plans often

referred to as job evaluation plans. The spread of practices of this kind has resulted from a desire to make wage-setting procedures more systematic and less arbitrary, thus giving employees more confidence in the "fairness" of the decisions taken.

TABLE V

Indexes of Minimum Wage Rates and Other Wage Measures, Canada, 1965-71

(year-over-year percentage changes, 1965 = 100)

	National Average Minimum Wage Rates		General Wage Rate Index		Average Weekly Wages and Salaries, Industrial Composite		Average Hourly Earnings Manufacturing	
	Index	Y/Y Change	Index	Y/Y Change	Index	Y/Y Change	Index	Y/Y Change
1965.....	100	—	100	8.9	100	5.2	100	4.9
1966.....	109.7	9.7	106.4	6.4	105.9	5.9	106.1	6.1
1967.....	115.1	4.9	114.5	7.6	113.0	6.7	113.2	6.7
1968.....	122.6	6.5	123.4	7.8	120.8	6.9	121.7	7.5
1969.....	135.5	10.5	133.1	7.9	129.3	7.0	131.6	8.1
1970.....	155.9	15.1	144.0	8.2	139.3	7.7	142.0	7.9
1971.....	168.8	8.3	156.5	8.7	151.3	8.6	154.7	8.9

There is a strong tendency for wage and salary administration plans of this kind to tie together increases occurring within the same firm, and to relate increases in the whole pay structure to those being granted by other employers. The effect is to reduce the responsiveness of the firm to changes in the ease or difficulty with which it can obtain or hold suitable personnel in its own immediate labor market. This means that a fairly wide response by a number of employers is necessary before the information obtained from pay surveys indicates the need for downward adjustment in the wage and salary increases granted by a particular firm.

These changes in wage-setting arrangements have had the effect of lessening the dependence of wage decisions on current labor market conditions and increasing their dependence on past rates of wage increase. In line with our earlier hypothesis on the nature of the long-term arrangements in labor markets, there appears to be some asymmetry in the process. Firms are prepared to give significantly higher increases in response to extreme tightness in the market for particular skills but are less likely to give sharply reduced increases in the face of extreme ease.

The tendency for large non-union firms to relate their pay increases very closely to those of other employers widens the network of relationships which binds together wage and salary increases over large areas of the economy and makes them less responsive to changes in current economic conditions. It has long been recognized that union demands and collective

bargaining settlements are frequently very much influenced by settlements obtained elsewhere in the economy. It has often been thought that in non-union sectors of the economy these responses would be much more flexible and less tied to what has happened or was happening elsewhere. There are examples to be found of considerable responsiveness by employers and employees to the ease or difficulty or finding jobs or suitable workers in their own labor markets. It appears, however, that institutional developments

TABLE VI

Duration of Major Collective Agreements

(as percentage of total number of agreements)

	Under 18 months	18–29 months	30 months or over
1954-59	47	43	10
1960-65	25	47	28
1966-71	16	52	32

SOURCE: Canada Department of Labour. Agreements covering units of 500 or more employees, excluding construction.

TABLE VII

Average Duration of Major Collective Agreements in Canada, Signed Each Year from 1953 to 1971

(months)

	Weighted By Number of Agreements	Weighted By Number of Employees Covered
1953	15.9	15.6
1954	16.5	18.7
1955	16.5	16.5
1956	21.1	22.0
1957	19.2	17.6
1958	20.6	21.8
1959	22.9	22.6
1960	21.5	21.3
1961	22.1	21.5
1962	24.2	24.0
1963	24.4	24.8
1964	25.0	24.7
1965	28.3	26.7
1966	26.7	27.3
1967	25.1	24.5
1968	25.1	24.8
1969	24.8	24.0
1970	25.5	25.8
1971	25.5	25.3

SOURCE: Economics and Research Branch, Canada Department of Labour.

in the non-union labor market in recent years have significantly reduced the degree of responsiveness of wage setting to current economic conditions.

So far as union wages are concerned, a comparison was made of the magnitude of increases in average earnings over the decade of the 1960s by industrial groupings which varied widely in terms of their degree of unionization. In general, the size of gains in average earnings in relation to degree of unionization failed to show any systematic pattern.

On the other hand, there is evidence that the average term of collective agreements between unions and employers has lengthened considerably since the 1950s. Data compiled by the Canada Department of Labour showing the percentage of agreements classified by duration for three successive six-year periods beginning in 1954 are given in Table VI.

The lengthening term of collective agreements in Canada over the last two decades can also be measured by the average length of major agreements signed each year. In Table VII, the estimated average duration of contracts is shown for recent years, weighted both by number of agreements and by number of employees covered.

chapter three

PRICES, PROFITS AND INFLATION

Introduction

Given the analysis in Chapter II of how wage and salary levels move in response to economic forces, it could be argued that we have already gone a considerable distance in providing an explanation of how the prices of goods and services are determined in response to changes in market conditions. After all, over a wide range of the economy prices can be thought of as made up of production costs per unit plus a mark-up. Costs in turn are in large measure made up of direct labor costs or labor costs entering indirectly through the prices of materials or services purchased by firms. For most sectors of the economy, therefore, the behavior of prices is dominated by changes in the trend of labor costs[1]. Changes in profit margins and similar returns to property in response to changes in economic conditions are generally of secondary importance in explaining price movements.

Returns to Capital as a Proportion of the Price of Output

The limited role of profits or of property income as a whole in the determination of overall price movements is sometimes illustrated by quantitative analysis of the various factor incomes and other payments derived from the prices at which output is sold. For example, taking 1970 and 1971 together, these income components were roughly as follows. About 78 per cent of the Gross National Product was made up of payments to factors

[1] In certain capital-intensive industries, of course, changes in the cost of capital dominate changes in labor costs as an influence on price movements.

of production, i.e., net national income at factor cost. The remaining 22 per cent was the sum of capital consumption allowances and indirect taxes less subsidies.

Since capital consumption allowances are not part of the net income of firms, it can be argued that they should be excluded from property income. Indirect taxes less subsidies are also not part of property income, and since they result from governmental decisions it can be argued that they too should be excluded from the factor payments under the control of firms when making price decisions.

We are then left with net national income at factor cost, of which roughly three-quarters is recorded as compensation for labor services and around one-quarter as returns to capital. It is this 20 per cent of Gross National Product, representing net returns to capital, which would seem to be the centre of any discussion on the role of mark-ups in influencing prices. Indeed, some would go further and suggest that it is the 10 per cent of the Gross National Product accounted for by pre-tax corporate profits which is the relevant magnitude for this purpose, a figure which indicates the relatively minor role of corporate profits in determining the level of prices in Canada.

This is not the only possible way of doing such arithmetic, of course, and somewhat different results would follow from the use of alternative concepts and estimating procedures for which an equally reasonable case could be made. The general impression left by such calculations would, however, be much the same. Compensation for labor services undoubtedly takes a much larger proportion of the total proceeds of sale of output than the share going to net profits, interest and miscellaneous investment income.

Those making a case that corporate profits have been a relatively unimportant source of our recent difficulties can reinforce their case by pointing out how sharply profits in fact responded to the decline in the rate of demand expansion around the end of the 1960s. From their high in the first half of 1969 to their low in the second half of 1970 total corporate profits fell by more than 10 per cent. Thus it can be argued not only that corporate profits are a minor element among the incomes derived from the price of output but also that they are highly responsive to a reduction in demand, and hence can hardly be blamed for contributing to the problem of continuing inflation during a period of economic slack.

There is something to be said for this point of view, but it fails to recognize the extent to which profits respond in a volatile way when demand growth speeds up as well as when it slows down. While profit margins are typically squeezed when demand growth slows down and thus have little to do with the persistence of inflation when unemployment is growing, by the same token the rapid growth of profits and widening of margins when demand growth accelerates obviously helps to initiate episodes of price and wage inflation.

It is easy to see why the economic system responds as it does to changes in the rate of demand expansion, but as we shall see later it is by no means easy to see how the nature of this response could be changed without the risk of adverse effects. Beginning from a position in which the economy has some unemployed capacity, a stepped-up rate of demand growth will have its first effect on output and employment. For the reasons discussed in the previous chapter it is not to be expected that the trend of wages will respond immediately. This means that while markets for output will have improved, the trend of normal unit labor costs (i.e., unit labor costs at normal levels of capacity utilization and normal productivity growth) will not at first reflect the strengthening of market demand conditions.

During this phase of quickened demand expansion actual unit labor costs will be moving in a way that is highly favorable to employers. The sharply rising volume of output will ordinarily lead to a rapid rise in productivity, reflecting the more effective utilization of labor within firms. The combination of a buoyant market for output, strongly rising productivity and a lag in the response of wage and salary increases to improved demand for labor will normally lead to a rapid rise in profits. This will happen even if output prices respond as slowly to changes in final demand as do increases in money wage rates, and such a profits bulge would be avoided only if there were a substantial slowing of the rate of price increase to reflect the parallel slowing of the rise of current unit labor costs. With the demand for output rising, however, market pressures tend to work against such a price response, and either as a result of the free interplay of demand and supply or because firms can raise prices without losing their share of the market there will be a tendency for the rate of price increase to accelerate rather than slow down.

The bulge in profits which occurs in the early stages of an acceleration of demand growth has feed-back effects on the economy. Rising profits provide encouragement for increased investment in plant and equipment and provide more cash flow to help finance such investment. In the past this has often meant that a moderate expansion which was gradually reducing the level of unemployed resources has become converted into an investment boom and eventually into a substantial overshoot of demand.

The same increase in profits which stimulates investment can also have a stimulating effect on wage demands and wage decisions, although the independent effect of enhanced profitability is difficult to disentangle from that of the strong demand for labor usually found at this stage of an economic expansion. To the extent that the wage demands of unionized employee groups and the wage offers of employers are influenced by the profitability of their firms or industries, the rise in profits helps to set the stage for larger wage and salary increases. Putting these effects together it is not difficult to see how the increase in profits generated by economic expansion can set in train the kind of cost and price increases which will later prove very difficult to reverse. It is thus not difficult to make the case that at least during the

initial stages of an inflationary outbreak the relatively small corporate profits tail can wag the whole economic dog.

The Response of Prices and Profit Margins to Changes in Demand

We now turn to how prices are determined and, in particular, to how they respond when economic conditions change. It will be recalled from our discussion of wage and salary determination that the existence of uncertainty together with the time dimension of wage-setting practices help to account for the long lags in the response of labor markets to changes in the rate of demand expansion. We also suggested that if employers and employees regarded a slowing of demand growth as only a temporary interlude, with inflation likely to continue over the longer run, it was quite possible that any such wage response would be relatively minor. This analysis seems to us to provide the main explanation for the trend of wage and salary increases, and hence of normal unit labor costs, during recent years.

The question then arises whether these same influences affect the size of the mark-ups over unit costs from which profits and other returns to capital are derived. It is evident that uncertainty raises difficulties in reaching price decisions which are very similar to those encountered in making wage decisions. The demand conditions which will prevail in the future for the output of the firm and the industry cannot be known with certainty. Moreover it is often difficult to appreciate and confirm changes in the demand situation which have already occurred, and it therefore takes time to make what are thought to be appropriate price adjustments.

This is not a problem for those who sell their output in organized markets where prices adjust immediately to balance off supplies and demands, and market participants must take the going price if they are to do any business. In fact, however, few products are sold in this way. A more typical pattern is that producers periodically set prices and then have to wait and see what level of demand will emerge. Since chance plays a large part in the day-to-day and week-to-week variations in demand, the discovery of underlying demand conditions and of the prices appropriate to these conditions is not clear and immediate.

The Commission's investigations of a wide variety of prices in the course of the price restraint program of 1970 confirmed that a substantial degree of uncertainty surrounds the making of many prices. Neither the exact timing nor the exact magnitude of the price changes could be fitted into a precise formula, and it was clear that the decisions involved were difficult ones. Indeed, it appeared that the outcome might well have been different had other people taken the decisions on the same evidence or had the same circumstances arisen at another time. This is hardly surprising since the market situations facing most firms at any point in time are highly complicated. For the same reason it is no surprise that prices do not respond instantaneously to changes in the market demand conditions facing firms.

The slowness of response that stems from the time required to appreciate that changes in the environment of the firm have taken place and to assess their magnitude is one form of delay. To this must be added lags in implementing decisions to change prices. Some of these may be almost mechanical in nature. A firm price contract may fix some prices for a period ahead, just as the issuing of a catalogue or the publication of a new price list may inhibit immediate changes. Moreover, the firms which set prices are interested in their earnings over the longer run. Given the likely reaction of customers to seemingly erratic pricing behavior, changing prices as frequently as in an auction market would not be a profitable strategy for firms to follow in many of the markets in which they sell. They are thus more likely to adopt a policy in setting prices that is likely to achieve acceptable results over a period of years than to attempt to react too closely to the immediate vagaries of the market. Indeed, responding to each short-run change in demand as it became evident might well have perverse results.

We have seen that there may well be some parallelism between the lags found in labor markets and those found in output markets, and therefore some parallelism in the response of wages and prices to changes in economic conditions. It is not surprising that there is also some similarity in the part played by expectations in the two markets. Those who set prices develop habits and strategies based on what has proved to be successful in the past. Following periods when prices generally have risen little and demand has been weak, counsels of prudence with respect to price increases may well prevail even when the economic climate seems to be improving. Conversely, following times when prices generally have been rising and strong demand has been experienced, there may be a tendency to believe that events will continue to justify price increases even though the immediate prospects might make them look dubious.

Economic Structure and Price Flexibility

In the above discussion it should be clear that we are discussing markets in which sellers have some degree of short-run discretion in choosing their prices. This element of discretion seems at odds with the image many people have of a competitive market—one in which the typical seller has no control over the price at which he sells. Before government marketing of grain, the grain farmer was a favorite textbook example of a competitive seller of this type. It has long been recognized that competition in modern economies rarely approaches the degree of "pure" competition found in some commodity markets where each seller is simply a price taker. Almost as rare is the firm with a clear-cut, unregulated monopoly. Rather, the vast majority of business firms lie between these extremes in a range which economists sometimes call imperfect competition. Such firms have some control over price, but their freedom of action is limited by the existence of other producers of similar products or of reasonably close substitutes.

Not only did the grain farmer of earlier years have no control over his selling price, but he also had very little in the way of steady or permanent employees. Most of the labor he needed, and frequently the land as well, was supplied by the producer himself or by his family. In response to a fall in demand, grain prices fell. Rather than reduce wages or wage increases, lay off employees, or work short time, the farmer and his family accepted a cut in the return to their own capital invested in the farm and to their own labor services.

We have already noted that the typical modern business firm has a substantial number of more or less permanent employees, and that it is significantly inhibited by information problems as well as by long-run profit considerations from cutting wages and salaries (or even moderating their rate of increase very sharply) during periods of excess labor supply. We now wish to consider the additional question of how much flexibility there is in the firm's margin over these costs in its price-setting behavior. Does the typical firm, imperfectly competitive or even monopolistic, use its discretionary power to delay its price response to changes in demand? Before turning to an analysis of the empirical evidence we have assembled in this connection, it is worth digressing for a moment to consider what economic analysis has to say about the effects of imperfect competition on the rate at which prices rise in the absence of uncertainty, that is, where economic units know what market demand conditions they face and will be facing in the future.

The Effects of Monopoly Power in Price Behavior

Traditional economic analysis holds that the mere existence of monopoly power, whether exercised by business firms, unions, professional groups or individuals, should not be expected to produce continuing inflation without a continuing rise in demand.

As we have noted, an individual business firm possessing some monopoly power is in a position to decide the price at which it is going to sell its product.[2] It is sometimes thought that this is enough to explain why there is a rise in the prices of goods and services sold by firms possessing some monopoly power. After all, the argument runs, if they can choose a higher price it is not surprising that they do so.

It is evident, however, that there are some difficulties here. It is clear enough that those firms possessing market power can charge higher prices at any given level of demand than they would otherwise be able to charge if there were more competitive conditions in their industry. Indeed, if they are interested in making as much profit as possible they not only can but will charge higher prices than under competitive conditions. The higher the price,

[2] There is, of course, a sense in which any firm even in the most competitive of industries, can decide on its own price, but if that price is above the competitive price it will sell nothing and if it is below it will shortly run out of capacity.

however, the less they sell and at some stage a further increase in the price will reduce rather than increase their profit. This is, then, the level of prices which will maximize their profit. If they are fearful of the entry of other firms or the possibility of governmental intervention and are concerned with how well they do taking one year with another rather than with making a sudden killing, the price charged may be lower than that which would maximize their profit in the short run. The general conclusion is, however, that at any given level of demand *higher* prices will tend to be charged by firms with some degree of monopoly power than they could charge otherwise, but these will not be *rising* prices.

Of course, if overall demand is rising strongly and continuously, and if we assume away uncertainty, prices of monopolistic firms will be rising over time in response to increases both in the demand for their output and in their costs. But these forces determining such price increases originate outside the firm, and similar price increases would just as surely be observed under such conditions in the most purely competitive of markets. On the same reasoning, a monopolistic firm would respond to a fall in demand by lowering its price, since the price level at which it realized its maximum profit would now be lower. The fact that we do not observe rapid response of this kind to a fall in demand is primarily due to the cost rigidities emphasized earlier. It is also, however, a reflection of the pervasive uncertainties which surround price-setting decisions, the rationality of price behavior based on rules of thumb which have proved useful in the past, and perhaps to a lesser degree the costs to producers and consumers alike of continual, erratic price movements.

What kind of price behavior would this line of reasoning lead us to expect over a series of economic fluctuations including periods both of boom and recession? Certainly we would not expect, as has sometimes been suggested, that firms with concentrated market power could succeed in raising their prices relative to competitive industries not only during periods of expansion but also during periods of recession—possibly by reducing their prices less under such conditions than firms exposed to strong competition. Why should monopolistic firms take several decades to exploit to the full such power as they possess to charge a relatively high price, rather than do so at once and then simply maintain their relative price advantage? Even if the extent of monopoly power in the economy were increasing steadily over time, the resulting long-run rise in the prices of concentrated industries could be expected to bring economic forces into play which would produce an offsetting relative decline in prices in competitive industries.

Another question of some interest is whether, during a period of expansion, there is any tendency for the prices of firms having some monopoly power to rise relative to those of firms selling under more competitive conditions. In the light of the preceding argument, this would imply that monopolistic prices fall relative to competitive prices during periods of recession. Are there systematic shifts in demand or in pressures on costs

that bear differently on concentrated than on non-concentrated industries over the course of business cycles?

It is difficult to find a clear-cut analytic answer to this question. To the extent that firms in certain highly atomistic industries resemble our hypothetical grain farmers, we might expect exceptionally large price increases in such industries during expansions and exceptionally small increases—or even substantial price reductions—during recessions. The price of the labor employed in such industries is relatively volatile, and quite apart from this, when firms are price takers what limits increases in their output is the higher unit costs involved in producing additional output. Thus, only with a rise in the industry's prices will any extra output be forthcoming at times of rapid demand expansion. As noted earlier, however, there are relatively few industries of this nature in modern economies.

Over the broad range of imperfectly competitive industries it is not easy to make any hard and fast judgments. Whether concentrated or less concentrated industries will have more flexibility in their wage and employment policy is not clear. Certainly in all industries, producers will be deterred from increasing their mark-ups by the extent to which competing suppliers are operating below capacity. It is difficult, however, to see why variations in the amount of excess capacity should differ systematically between highly concentrated and less concentrated industries.

In highly concentrated industries there may be special reasons for restraint in pricing policies during booms reflecting the fear, noted above, that high short-run prices and profits may attract new firms as well as government attention. Firms in a less concentrated industry may realize that high profits are likely to attract new entry, but given their relatively small size and consequent inability to affect the situation through their actions alone, they will have less incentive to hold down their prices. Certainly, it is the large firm in a highly concentrated industry that is likely to attract public—and therefore, government—notice. Thus there may be some basis, though a rather weak one, for supposing that more concentrated industries are likely to show more price restraint during expansions than competitive industries, together with less downward flexibility of prices in periods of slack demand.

Empirical Findings

When one turns to the empirical evidence on price-making in the Canadian economy, it seems to be consistent with the hypotheses outlined above[3]. This

[3] The following paragraphs are largely based on three studies done for the Prices and Incomes Commission: B. L. Scarfe, *Price Determination and the Process of Inflation in Canada*, study prepared for the Prices and Incomes Commission (Ottawa: Information Canada, forthcoming), esp. Ch. IV; Lester V. Taylor, Stephen J. Turnovsky and Thomas A. Wilson, *The Inflationary Process in Canadian Manufacturing*, study prepared for the Prices and Incomes Commission (Ottawa: Information Canada, forthcoming) esp. Ch. V; and D. G. McFetridge, "Short-run Price Adjustment in the Canadian Manufacturing Sector" in *Essays on Price Changes in Canada*, prepared for the Prices and Incomes Commission (Ottawa: Information Canada, forthcoming).

is true with respect to the reasons prices rise, the existence of response lags, and the effect of concentration or monopoly power. While particular studies may disagree among themselves on the exact nature and size of the effects, a fairly clear overall pattern emerges. In broad outline this pattern also appears when U.S. price changes are examined[4].

Research into price change suggests that four factors are at work. Each plays a separate role in price changes; that is, if one factor changes while the others do not, the price change described can be expected to occur. Of course, what usually happens is that all are changing simultaneously, and the outcome depends on the relative strength of the various forces at work.

First, when there is a rise in the demand for the output of an industry relative to its productive capacity, prices tend to rise. Further, a rise in prices tends to lower the amount demanded from an industry[5]. Conversely, when demand falls, relative to capacity, prices tend to fall. If at the same time unit costs were constant, it would be seen directly that the price change involved a change in the margin over unit costs. Usually, however, unit costs are also changing and, as we shall see, these changes too affect prices.

Second, prices tend to rise when there is a change in labor cost per unit of output at normal or trend rates of growth in output and productivity. Given the deficiencies of the information and the fact that "normal" unit costs cannot be observed directly but can only be inferred on the basis of rather arbitrary assumptions, it is interesting that nevertheless "normal" costs appear to be the operative concept in many of the cases examined[6].

The prices of goods and services purchased from other industries and used in the production process represent a third influence in the determination of particular prices. These are often of very considerable importance to the individual firm. Changes in these costs, however, reflect price increases in other parts of the economy and are not properly regarded as a separate influence in overall price changes. They reflect how price changes are transmitted from one part of the economy to another, not how prices come under pressure in the first instance.

Finally, prices in Canada tend to rise or fall when the prices of corresponding goods or services in the United States rise or fall[7]. We shall return to this factor in a later chapter.

On other issues, the conclusions emerging from the data are somewhat less clear-cut. For example, there is some evidence that prices tend to rise when capital costs rise or when taxes on profits rise[8]. The evidence, however, is a good deal weaker and the propositions much more in doubt than those we have already discussed. All these findings refer specifically to

[4] Cf. Taylor, Turnovsky and Wilson, *op. cit.*, Ch. VII.
[5] Cf. Scarfe, *op. cit.*, Ch. IV.
[6] It is possible that difficulties in identifying "normal" unit labor costs explain why they have not been found to be clearly relevant in other cases.
[7] The study by Scarfe, *op. cit.*, is an exception here. This factor is not stressed by him largely because he found it of minor importance rather than because he did not consider it.
[8] Cf. Taylor, Turnovsky and Wilson, *op. cit.*, Ch. V.

industry selling prices rather than to the prices paid by consumers. Little relevant statistical information exists to allow one to pursue the price-formation process through distribution channels[9].

The second major issue concerns lags in the response of prices to the forces which make them change. Here again the story told by the data seems very clear and the studies find that there are indeed lags of some importance[10]. Thus the response lags which we have been stressing in our discussion of inflation arise not only from the delays involved in the process of wage change, but also from delays in the price response to changes in demand or in costs. Furthermore, it seems that these response lags differ among various industries, with some responding more quickly than others. Thus the process of price adjustment to change either in general demand conditions or in general cost conditions is likely to involve substantial temporary variations in relative prices. It also appears to be the case that the speed of price response to changes in underlying influences is often different depending on which factor—demand, labor costs, material costs, or foreign prices—has changed[11]. This may help to account for the striking degree to which short-term relative price change occurs in the Canadian price system[12], a feature which cannot help but increase the uncertainty surrounding price decisions since other price changes are an important input into those decisions.

These response lags are, in part, evidence of the existence of discretion in the setting of prices. However, the pattern does not seem to be related in any clear way to industrial concentration or monopoly power. It has been suggested that powerful firms may react more strongly or more quickly to an increase in demand than to a decrease. Since there is always a good deal of variation in demand among industries even when overall demand is growing steadily, it can be argued that this may impart an upward or inflationary "bias" to the economy, since price increases made by those firms whose demand is rising will not be fully offset by the price decreases of those firms whose demand is falling[13].

Different price responses to increases in demand from those occurring when demand decreases can be observed in certain sectors of the Canadian economy[14]. However, the sectors involved constitute a distinct minority of the industries in the economy. Moreover, some of the industries involved appear to respond more quickly to weak rather than to strong demand, whereas the reverse might have been expected. Thus little overall support

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[9] Cf. M. Whybrow and C. Wiseman, "Trade Margin" in *Essays on Price Changes in Canada*, which discusses the difficulties and commences analysis in one of these areas.

[10] The McFetridge study is an exception, but he did not consider the possibility explicitly.

[11] Cf. Taylor, Turnovsky and Wilson, *op. cit.*

[12] Cf. J. G. Cragg and H. T. Young, "Patterns in Price Change" in *Essays on Price Changes in Canada*, study prepared for the Prices and Incomes Commission.

[13] Cf. C. L. Schultze, "Recent Inflation in the United States", Study Report 1, *Study of Employment, Growth and Price Levels*, Washington, 1957.

[14] Cf. Scarfe, *op. cit.*, Ch. IV

can be found for the view that asymmetries in the speed of price response have played a major role in the process of inflation[15].

Despite the failure to find any clear evidence for hypotheses of this kind in studies looking at the way different industries have set prices over time, the statistics do offer some hint that the prices of larger firms are comparatively slow to respond to general increases in demand, though not to decreases[16]. At the same time, the prices of firms in concentrated industries appear more likely to be unresponsive to slackening demand conditions than the prices of other firms[17]. These findings are very weak and inconclusive and their quantitative importance, even if they are true, seems to be small. While further research may alter the picture somewhat, the Commission's studies make it seem unlikely that differences in price-setting behavior associated with industrial concentration or the size of firms play any large or continuing role in the process of inflation.

[15] This is not to deny that on the cost side downward rigidities in rates of wage increase would tend to produce this effect.

[16] This is based on K. Dennis, "Market Power and the Behavior of Industrial Prices", in *Essays on Price Changes in Canada*, prepared for the Prices and Incomes Commission (Ottawa: Information Canada).

[17] Cf. Dennis, *op. cit.* Some of the findings of McFetridge, *op. cit.*, contradict this.

chapter four

UNEMPLOYMENT IN CANADA

Introduction

In the preceding chapters we attributed the relatively rapid pace of inflation in the latter half of the 1960s to the degree of demand pressure on Canada's productive capacity and manpower resources that was beginning to build up in 1964, reached its peak in 1966, and did not entirely disappear—at least in the more buoyant regions of the country—until early in 1970. The slowness with which inflation has tended to subside under more recent conditions of slack demand is attributed, in turn, to the persistence of patterns of wage and price-setting behavior which had become firmly established during this extended period of buoyant demand and relatively rapid inflation. The belief that such conditions now are normal and only to be expected seems to have lingered on in spite of the change in the immediate economic environment.

In the course of this analysis we drew attention to a rather puzzling observation. A degree of demand pressure sufficient to set off a subsequent acceleration of cost and price increases seems to have begun building up as early as 1964, when the seasonally-adjusted national unemployment rate, though falling, was still in the relatively high range of 4.5 to five per cent of the labor force. While the adjusted national rate subsequently fell as low as 3.5 per cent, it rose again towards the end of 1967 and remained in the four to five per cent range during the following two years. With unemployment back up to this level, the relatively rapid pace of inflation showed no clear tendency to accelerate further, but neither did it show definite signs of moderating. It was not until 1970, when the rate rose well above five per cent, that distinct

signs of a slowing of the rate of price increase became apparent. Evidence of a moderating rate of increase in wage rates has taken even longer to develop, and remains rather inconclusive in the first half of 1972.

On the face of it, it is both surprising and disturbing that a degree of demand pressure on capacity strong enough to cause rates of price and wage increase to accelerate should emerge at such a high level of national unemployment. Yet this observation is supported by the fact that although the Canadian economy has been exposed to sufficient intermittent demand pressure since the early 1950s to raise the Consumer Price Index by roughly 50 per cent, the national unemployment rate over the same period has averaged slightly higher than five per cent of the labor force.

It is true that over the same period the average level of unemployment in the United States, which is measured in much the same way as it is in Canada, has been only marginally lower than in this country. In other countries not only is unemployment measured in different ways, but there are also important differences in social and economic structure and in labor market characteristics which combine to make direct comparisons difficult to interpret. The impression is probably correct, however, that even if the statistical measures used in the various countries could be adjusted to provide a reliable basis for comparison, Canada's average unemployment rate would still turn out to be relatively high by international standards.

It is apparent that this phenomenon is intimately connected with an equally striking feature of Canadian unemployment experience—the persistence of marked regional differentials in unemployment rates. In the more outlying regions of the country, particularly Eastern Quebec, the Atlantic Provinces and British Columbia, well-above-average unemployment rates are characteristically found whatever the level of the national unemployment rate. In the densely populated and heavily industrialized areas of Southern Ontario, on the other hand, the labor market appears to function with a relatively high degree of efficiency by international standards and at comparatively low average levels of unemployment. Thus when the seasonally-adjusted national unemployment rate has been approximately five per cent, the actual level of unemployment of workers over 25 years of age at the seasonal low point in September has typically been about two per cent of the corresponding age group in the Ontario labor force. If labor markets in all parts of the country functioned as efficiently as this, the average Canadian unemployment level would not be greatly out of line with that of most other industrial countries.

The fact is, however, that at levels of aggregate demand which have generated a significant degree of strain on productive capacity and an unduly tight labor market in the industrial heartland of the country, unemployment has still remained relatively high in other important regions of Canada.

We shall be discussing at length the regional aspects of the problems of unemployment and inflation in the next chapter. The purpose of this chapter is to discuss some of the possible reasons why the Canadian

economy has encountered cost and price problems in recent years at levels of capacity utilization which have still left large pools of manpower unemployed. We proceed by examining some of the main aspects of unemployment in Canada in recent years, and relate these to certain characteristics of our labor markets which are particularly striking in regions of differentially high unemployment.

The Nature of Unemployment Under Normal Demand Conditions

It is highly unlikely that any economy, no matter how high the level of aggregate demand, could keep all those who wanted to work fully employed at all times.

This is not just a matter of the placement problems of new entrants to the labor force. Even when the overall level of demand for workers is ample, fluctuations are bound to occur in the employment requirements of particular employers and industries, reflecting relative shifts in demand and the seasonal or intermittent pattern of the production process long characteristic of many areas of the economy.

To a considerable extent, temporary declines in a firm's demand for labor services are accommodated in modern economies by means other than laying off existing employees, particularly in areas where demand rarely fluctuated very sharply and the relationship between employer and employee is typically regarded on both sides as of a continuing, long-term nature. When demand slackens, the work force may simply be employed less intensively, with less overtime and more short-time working. It is true that new recruitment may be cut back severely, and only in essential cases will there be hiring of immediate replacements for those who quit or retire. Typically, however, the decline in demand will not be fully reflected in the number of persons employed, although it may lead to lay-offs even by this category of employer.

In more volatile industries which rely heavily on casual labor, a decline in demand is much more likely to lead an employer to lay off workers almost immediately. For example, this is true of many areas of the construction industry. Even under normal conditions, many construction workers are accustomed to the risk of intermittent periods of temporary unemployment—which they seem prepared to accept up to a point—provided they regard their rate of pay for time worked as high enough to compensate them for this feature of their occupation.

In relatively affluent societies with a high degree of social mobility, a great many people also decide to change jobs for better positions, or because of dissatisfaction between themselves and their employer, or for other reasons. Some leave to accept a job offer, but many leave to find a suitable job and thus join the ranks of the unemployed.

In addition to employed persons who are laid off or quit to look for a more suitable job, the other main source of normal inflow into the ranks of the unemployed consists of new entrants into the labor force—young people

looking for their first job, immigrants and many individuals with a relatively weak attachment to the labor force who want only temporary or part-time work.

The outflow from the pool of recorded unemployment includes not only those who find new jobs, but also many who leave the labor force. Examples include young people who return to school, female workers who marry or have children, part-time or temporary workers who no longer want a job, persons who decide to enroll in educational or training programs, and "hard core" unemployed who become discouraged because of their lack of success in finding employment and give up the effort.

The size of the pool of unemployed workers depends on the respective rates of inflow and outflow through time. A relative change in these flows is also likely to change the average duration of unemployment.

Even when an economy is generating a sufficient number of job vacancies to suit the skills and preferences of those seeking employment, there are various reasons why the process of matching up individual job-seekers with the appropriate job vacancies is bound to take some time. Both employers and employees have to undertake a search process in order to find the best employees available for the job and the best jobs available for the job-seeker. Up to some point it pays both employers and job-seekers to accept the costs of undertaking a more thorough and lengthy search rather than accept the first applicant or first job opportunity that comes along. As we shall see, the process of matching off particular job vacancies and suitably qualified job-seekers is typically much more difficult, time-consuming and expensive in certain areas of the Canadian labor market than in others.

It would be difficult to regard the existence of some minimum level of unemployment largely of the kind described above as evidence that the level of aggregate demand in an economy was unduly low in relation to its productive capacity and manpower resources. We have argued earlier, however, that in recent years the highest level of aggregate demand pressure under which the Canadian economy seems to have been able to operate without causing the pace of inflation to speed up has been one which generated a national unemployment rate of the order of 4.5 to five per cent of the labor force. Is it at all reasonable to suppose that in the Canadian economy as it is presently constituted, and given the existing characteristics of its labor markets, such a high level of unemployment could be very largely of this frictional character?

In order to explore this question further, we proceed to a closer examination of some of the special characteristics of "normal" Canadian unemployment and of the labor markets in which it arises.

Labor Turnover, Unemployment and Vacancies

A remarkable feature of the Canadian economy—one which is also common to the United States—is the very large turnover of jobs which

occurs on a regular and continuous basis. Data on job turnover[1] ceased in 1966. For the period 1953 to 1966, however, figures relating to a substantial proportion of employment in Canada indicate that the number of separations per month (including those who resigned voluntarily and those who were fired or laid off permanently) averaged more than six per cent of the relevant employment total. The average number of hirings per month was a comparable percentage of the total number employed. Much of this turnover was concentrated in the construction and forestry industries, but even in the rather stable transportation, communications and other utilities sector average turnover ran at more than three per cent a month.

Much of this turnover is also a reflection of the large seasonal fluctuations in employment that normally occur in the course of the year. But this is only a part of the reason. Even when hirings and separations were at their seasonal lows, both measures are estimated to have run at rates greater than four per cent of employment per month[2]. While the data for hirings and separations cease in 1966, the records of the Canada Department of Manpower and Immigration indicate that rapid job turnover continues to be a very marked feature of employment in Canada[3].

Rapid job turnover might appear to go a long way towards accounting for Canada's high average unemployment rate. If each of these separations left the person involved without work for three complete weeks, this would account for the bulk of unemployment. In fact, however, it seems that most of the people involved found other jobs—or dropped out of the labor force—with no interval of unemployment or only a short one, and for this reason do not appear even to have been recorded as unemployed. Nevertheless, with turnover as high as this, it is easier to understand why the average unemployment rate in Canada has been so high.

The number of unemployed gives some indication of the supply of labor available to fill jobs. The corresponding concept on the demand side is job vacancies. Unfortunately, vacancy data of general coverage have not been available for the Canadian economy until very recently. These new figures are the outcome of the recently instituted Job Vacancy Survey. They start in the middle of 1970, and will help to fill important gaps in our knowledge of labor markets. They became available, however, at too late a date for extensive analysis by the Commission. In addition, they extend over too short a period to make extensive analysis very profitable, especially as they now refer only to a period when it is generally agreed that there was considerable slackness in the economy[4].

[1] Statistics Canada, *Hiring and Separation Rates in Certain Industries*, Catalogue 72-006, various issues.

[2] Cf. J. G. Cragg, *Wage Changes and Labour Flows in Canada*, Study prepared for the Prices and Incomes Commission (Information Canada, forthcoming), Ch. IV.

[3] Based on unpublished data referring to placements effected through the Canada Manpower Centres and National Employment Service. Earlier data were published in *The Labour Gazette*.

[4] Many people have noted the lowness of the vacancy figures when compared with unemployment figures. Needless to say, specific definitions have to be adopted to measure vacancies

The only data available on vacancies in Canada that extend over a considerable period refer to vacancies on file at Canada Manpower Centres[5] (and the former National Employment Service). These represent only a part of total vacancies, reflecting the limited extent to which employers rely on the government employment service, and are subject to other limitations. Nevertheless, the data do seem to cast some light on the behavior of labor markets.

These vacancy figures are of two types. The first gives the new vacancies notified to the employment service in the course of the month. The second is unfilled vacancies at the end of the month. Adding those unfilled at the end of the previous month to those notified in the course of the month gives an indication of total vacancies available during the month[6]. The unfilled vacancies indicate how many of the total remain to be filled at the end of the month.

Not surprisingly, there is a strong inverse relationship between unemployment and vacancies. Thus typically when there are more vacancies there are fewer people without jobs who are looking for work. Calculations for 1955 to 1970 indicate that a one per cent increase in the unemployment rate was typically associated with roughly a 0.8 per cent decrease in total vacancies as a percentage of the labor force[7], and was associated with an even larger percentage decrease in the rates of unfilled vacancies to the labor force. These data indicate that as labor markets become tighter in the sense that fewer people are seeking work, they also become tighter in the sense that more jobs are available.

Failure to fill the jobs which are open in the course of the month can be taken as an indication of the difficulty employers are having in finding suitable employees. The higher the proportion of total vacancies that are unfilled, the greater might be thought to be the difficulty being encountered and the tighter the labor market. This proportion also varies inversely with unemployment, a one per cent increase in the unemployment rate being associated with roughly a 0.5 per cent decrease in this ratio. Thus,

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just as in the case of any other series. For good reasons, the definition adopted for measuring vacancies is a fairly stringent one. In any case, the figures do not represent the number of jobs that could be filled in a period, which seems to be how some commentators are inclined to view them, and it is not clear yet how they should be compared with the unemployment rate. Leaving aside technical matters of measurement, however, the number of vacancies that would correspond to balance in labor markets, when the only problem is the time taken to match those wanting work with the jobs available, is not necessarily equal to the number of unemployed. This is because there is a time dimension to the process of search because job openings and people looking for work are both entering the labor market on a continuous basis. One does not expect people always to take or to be offered the first job they investigate and if the investigation process takes longer for job-seekers than for employers, one would expect there to be more unemployment than vacancies even when the markets are in balance.

[5] Recent values of these series are unpublished. The source is the same as that for placements mentioned in footnote 2, page 11.

[6] Strictly speaking, end-of-month and beginning-of-next-month figures differ for technical reasons and in the summation the latter are used. This is only an indicator even for possible placements by the Manpower Centres because, for example, employers may have filled the vacancies in other ways or changed their minds about wanting to hire someone.

[7] This calculation, and the ones referred to immediately below, are described in J. G. Cragg, *op. cit.*, Ch. V.

as the unemployment rate becomes lower, labor markets also appear to be tighter on the demand side in the sense that there are more vacancies and a larger proportion of them are not filled by the end of the month.

This relationship between the unemployment rate and the tightness of labor markets measured from the demand side appears to be fairly continuous. That is, as the unemployment rate declines, the difficulty experienced by employers in filling vacancies becomes steadily greater, as does the number they are trying to fill.

One disturbing feature of the data is that over the course of the last decade the degree of labor market tightness indicated by any given ratio of unfilled vacancies to total vacancies has been associated with progressively higher rates of measured unemployment[8]. Put differently, there has been a tendency over time for any particular unemployment rate to be associated with progressively higher ratios of unfilled vacancies to vacancies available. It is conceivable that this could reflect a trend towards increasing specialization of job requirements, but given the limitations of the data no firm conclusions can be drawn. The pattern may well reflect changes in the use made by employers of the government placement facilities rather than anything to do with general patterns in the labor market.

The difficulty which employers experience in filling vacancies when labor markets are tight is exacerbated by the behavior of voluntary separations. The more such separations occur the tighter the labor market becomes. The probable reason is that people realize it is easier to find jobs when labor markets are tight and hence are more apt to quit to seek better opportunities in such circumstances. This partly explains why vacancies increase when unemployment becomes lower[9].

The main point to be emphasized in this section, however, is that even during periods of relative stability in the total number of unemployed persons or in the total number of job vacancies in Canada, the underlying situation which generates these figures is anything but static. There is a continuous stream of separations from previous employment and new entrants into the labor force adding to the number of job seekers. There is also a continuous stream of new vacancies emerging, and of hirings to fill these vacancies reducing the number looking for work.

In Canada both these flows are normally quite large in relation to the total number of persons employed—much larger, perhaps, than is generally realized. Changes in the relative magnitude of these flows underlie the growing difficulty experienced by job-seekers in finding suitable positions as the unemployment rate rises, and the increasing problems encountered by employers in filling vacancies with qualified applicants as the unemployment rate falls.

Part of the mystery of why unemployment rates in Canada typically are so high revolves around why these flows are high and why the process

[8] Cf. Cragg, *op. cit.*, Ch. V.
[9] The behavior of separations and hirings is studied in Cragg, *op. cit.*, Ch. VI and VII.

of finding employment is not more rapid. Little is known about this. However, aggregate unemployment statistics do cover a wide range of very diverse experience in the process of job search and it is illuminating to investigate some of the patterns. Some typical differences in the unemployment experience of major categories of job-seekers are examined in the next section.

A Profile of Unemployment in Canada

There are two stereotypes of the unemployed which come to many people's minds when they think of unemployment. The first is that of the head of a household on whose earnings a family's well-being is crucially dependent, who is able, willing and well-qualified to work, but who has neither been offered a job nor is likely to be offered one as far ahead as one can see. The second is that of the person who is too lazy or inept or uncaring to find or hold a job. While instances fitting each of these stereotypes undoubtedly exist among the unemployed, neither is typical of the situation of most job-seekers included in the unemployment statistics recorded in Canada over the last couple of decades. Instead, a wide range of differing circumstances is concealed in the unemployment rates widely quoted. This section is concerned with giving a profile of unemployment as it has existed on average over the years 1965-70 inclusive.

The prime source of information on unemployment in Canada is the Labour Force Survey. This is a sample survey, currently of about 30,000 households, conducted each month by Statistics Canada. In the Survey, interviewers visit households selected as representative in order to determine the labor force and employment status of members of the household, usually during the second full calendar week of the month[10]. On the basis of this information, and through the use of "benchmarks" established from the Census and population trends, estimates of employment, unemployment and various pertinent characteristics of persons falling in these categories are arrived at. While the size of the sample is quite adequate for determining the major aggregates in the employment picture, it is too small to allow very fine classification of the unemployed.

Extension of the Survey to cover a substantially larger sample would be very costly, but in our view more information about the previous history and subsequent employment experience of those who become unemployed could be very helpful in illuminating the nature of the various kinds of unemployment concealed within the total figures. Many of the characteristics of the unemployed which are already measured could be given a clearer interpretation if reliable information were available on how they were distributed regionally or by age and by sex. It is just this sort of information which the Labour Force Survey, as presently conducted, cannot supply with any high degree or reliability.

[10] The "reference week" on occasion is the week before or after this.

The statistics produced by the Labour Force Survey pertain to the civilian population[11] over the age of 13. The prime interest is in the form of economic activity in which members of this population were engaged in the week to which the Survey refers. The three main characteristics established are being employed, being unemployed, and not being in the labor force. The average breakdown over the period 1965-70 inclusive, in terms of percentages of the population and of various sub-classifications, is shown in Table VIII.

TABLE VIII

Labor Force Status of Various Groups

(Percentages of Population Groups*
Averages of Monthly Data 1965-70)

	Total	Males 14–24	Males 25 and over	Females 14–24	Females 25 and over
Employed	52.8	52.1	81.6	39.2	30.3
Unemployed	2.5	5.25	3.4	2.4	0.7
Not in the Labor Force..	44.6	42.7	15.0	58.4	69.0

*Population Groups as defined for the Labour Force Survey rather than total population.
SOURCE: P.I.C. calculations based on data from Statistics Canada, *The Labour Force.*

The members of the population who were not in the labor force were engaged in a variety of activities which are summarized in Table IX. From these figures, it can be seen that the majority of those who are not in the labor force are housewives while persons in school account for another sizable group.

TABLE IX

Activities of Those not in the Labor Force

(Percentages of Total Not in the Labor Force
Averages of Monthly Data 1965-70)

Keeping House	59.7
Going to School	21.7
Other	18.6

SOURCE: P.I.C. calculations using unpublished data from the Labour Force Survey.

A person is defined to be unemployed if he is without work and actively seeking work or is on temporary lay-off from his job. Except for cases where there is good reason to believe that seeking a job would be a hopeless or unfeasible undertaking, or in the case of temporary lay-offs, a person will be classified as unemployed only if active attempts to find a job are being made in the reference week. There is, as a result of this

[11] Besides members of the armed forces, inmates of institutions (prisons, mental hospitals, etc.), Indians living on reserves and residents of the Yukon and Northwest Territories are also excluded.

conceptual framework, a shading off between being unemployed and not being in the labor force when job search becomes minimal or lackadaisical. In the case of many groups in the population who tend to have acceptable alternatives to not working, it is questionable how much reliance can be placed on the classification reported as distinguishing between those who are available for work and those who are not. Changes in these figures are, however, likely to be a useful indicator of changes in this situation even if the levels are not necessarily correct.

A highly important aspect of unemployment is the length of time unemployed persons remain without work. Most unemployment in Canada is of fairly short duration. A breakdown of the length of time that people who were recorded as unemployed had been without work is shown in Table X.

TABLE X

Duration of Unemployment

(Averages of Monthly Data 1965-70)

	Percentage of Unemployed		Percentage of Labor Force	
Temporary Lay-off	7.2		0.3	
Without Job and Seeking Work Under 1 Month	28.2		1.3	
"Short-term" Unemployment		35.4		1.6
Without Job and Seeking Work 1-3 Months	35.8		1.6	
Without Job and Seeking Work 4-6 Months	15.8		0.7	
Without Job and Seeking Work over 6 Months	13.0		0.6	
"Longer-term" Unemployment		64.6		2.9
Total		100.0		4.5

SOURCE: P.I.C. calculations using data from Statistics Canada, *The Labour Force*.

At first glance, these figures suggest that unemployment lasting more than one month is a very serious problem, as indeed it is. But the figures also indicate that the majority of those who become recorded as unemployed do not experience more than three months unemployment. This can be seen because the short-term unemployment is about equal to that which has lasted from one to three months. In those previous three months then roughly three times as many people became unemployed as are now recorded in the group whose first unemployment occurred in those months.

No figures are available on what happened subsequently to people in the various groups of Table X and whether they found employment or left the labor force. Data are available on what those who were unemployed in the previous month were doing in the current month and what those who were unemployed in the current month were doing in the preceding month. The percentages of the unemployed in the three main categories

are shown in Table XI. These data suffer from being based on people's recollections of what they were doing in the previous month, which may not agree with what would have been recorded in that month. They are also not reconciled with the duration of unemployment data.

Despite these problems, however, the figures are revealing. Of those currently unemployed, almost 40 per cent had not been unemployed in the previous month. Of the latter group, three out of four had been employed, while the remaining one out of four had not been in the labor force. Almost a third of those who recalled having been unemployed in the previous month had found employment, and the number who had dropped out of the labor force averaged less than one-tenth of those finding jobs. The data indicate, therefore, that much of recorded unemployment is a reflection of job turnover or temporary lay-off rather than of search by new entrants or re-entrants into the labor force, and that while many find a job within a month, for the majority of the unemployed another month's unemployment is normally to be expected.

TABLE XI

Changes in Status Among the Unemployed

(Averages of Monthly Figures 1965-70)

	Status in Preceding Month of Those Currently Unemployed	Status in Current Month of Those Who Recall Being Unemployed in Preceding Month
	(Percentage of Currently Unemployed)	(Percentage of Previously Unemployed)
Unemployed	61.4	65.3
Employed	30.2	32.3
Not in Labor Force	8.5	2.4

SOURCE: P.I.C. calculations based on unpublished and unreconciled data from the Labour Force Survey.

Unemployment strikes with very unequal incidence among particular groups in the labor force. For example, as Table XII shows, there are marked differences between men and women and among the different age groups in each category. Unemployment is much higher among younger workers than among the more mature age groups. Not only do women make up a much smaller proportion of the labor force than do men and so can be expected to be less numerous among the unemployed, but the unemployment rate among women is also much lower. Women are more likely to be engaged in housework when they are unemployed than are men and may be more apt to be classified as not in the labor force for the same degree of job-search activity[12]. At the same time, the existence of the pos-

[12] It is interesting that in the United States, where the key questions are somewhat different, the lower unemployment rate of women is not observed.

sibility of keeping house may make women less likely than men to search for a job if they feel that the prospects of finding employment are not good.

TABLE XII

Age-Sex Distribution of Unemployment and the Labor Force

(Averages of Monthly Figures 1965-70)

	Unemployment Rate by Labor Force Group	Number of Unemployed in Group as Percentage of Total Unemployment	Number of Labor Force in Group as Percentage of Total Labor Force
	(per cent)		
Males Aged			
14–19	11.9	15.4	5.9
20–24	7.3	13.8	8.6
25–54	3.8	36.7	43.9
55 and over	4.8	11.2	10.7
All men	5.1	77.1	69.1
Females Aged			
14–19	8.3	8.3	4.5
20–24	3.7	4.8	5.8
25–54	2.2	8.3	17.1
55 and over	1.9	1.4	3.5
All women	3.3	22.8	30.9

SOURCE: P.I.C. calculations based on unpublished detail from the Labour Force Survey.

Partly related to the high incidence of unemployment among youth, but also reflecting different behavior patterns, there is a noticeable difference between those who are married and those who are not with respect to unemployment. These patterns are summarized in Table XIII. It will be noticed that while married men account for almost 75 per cent of the male labor force, they account for little more than 50 per cent of unemployment

TABLE XIII

Marital Status and Unemployment

(Averages of Monthly Figures 1965–70)

	Married Men as a Percentage of All Men in Each Group	Married Women as a Percentage of All Women in Each Group
Population	64.8	63.5
Labor Force	74.1	54.2
Unemployment	51.1	36.7

SOURCE: P.I.C. calculations using unpublished data from Labour Force Survey.

among men. Similarly, and equally dramatically, married women account for 54 per cent of the female labor force but only 37 per cent of the female unemployed.

Finally, it is worth noting that over the period 1965-70, 40 per cent of the unemployed were heads of family units[13] while another nine per cent were not members of family units. Among family units experiencing some unemployment 37 per cent had no members who were employed while the remaining 63 per cent had at least one member employed.

There is also a noticeable difference in unemployment rates by educational attainment. A summary is shown in Table XIV. It should be noted that these figures apply to January or February[14]—months of high unemployment and low participation in the labor force. The most noticeable feature is the very strong tendency for those with lower educational attainment to have substantially higher unemployment rates.

TABLE XIV

Distribution of Unemployment by Educational Attainment

(Averages of Available Data 1965–70)

	Unemployment Rate as Percentage of Group Labor Force	Group Figure as a Percentage of Total		
		Unemployment	Labor Force	Population
No School	17.4	1.5	0.5	1.1
Some Public School	12.2	30.5	14.4	17.3
Complete Public School	6.8	21.2	17.9	17.7
Some High School	5.6	32.4	33.6	35.9
Complete High School	3.1	11.3	21.2	17.6
Some University	2.0	2.1	6.1	6.1
University Degree	0.9	1.0	6.3	4.3

SOURCE: P.I.C. calculations from unpublished compilations from the Labour Force Survey.

The incidence of unemployment also varies widely among industries. The data available are based on the industry of last employment, so that persons who worked casually in one industry but who had a more permanent attachment to another are likely to be misclassified while no classification is possible for those who joined the labor force for the first time. Though subject to these limitations, the breakdown shown in Table XV is at least broadly indicative. It will be seen that two industries which are highly

[13] "A family unit is defined as 'a group of two or more persons who are living together in the same dwelling and who are related by blood, marriage or adoption'. . . . The head of a family unit is defined generally as the person who is mainly responsible for the maintenance of the unit. However, in families consisting of husband and wife (with or without unmarried children), the husband is always designated as the head . . ." *The Labour Force*, Feb. 1972, p. 43.

[14] The relevant questions were only asked once a year, in one of these months. In 1968 the question was apparently not asked at all, hence that year is excluded from the calculations.

seasonal have very high unemployment rates. These are forestry and construction. While forestry workers constitute a very small fraction of the labor force, construction is a much larger sector and it accounts for a very large proportion of unemployment—in fact more than double its share of the labor force.

TABLE XV

Industrial Composition of Unemployment and the Labor Force*

(Averages of Monthly Figures 1965–70)

	Unemployment Rate as Percentage of Group Labor Force	Unemployed Group as Percentage of Total Unemployment	Labor Force in Group as Percentage of Total Labor Force
Forestry	18.6	7.4	2.0
Mining	4.4	2.3	2.6
Manufacturing	4.3	32.8	37.5
Construction	11.7	26.4	11.1
Transportation, Communication and other Utilities	4.2	12.1	14.1
Trade	3.1	16.7	26.1
Finance	1.7	2.3	6.7

*The unemployed who cannot be classified by industry are ignored.

SOURCE: P.I.C. calculations based on data from *The Labour Force*.

Finally, there are also very marked differences in the typical regional patterns of unemployment, as shown in Table XVI. It will be noted that unemployment rates are highest in the Atlantic region, Quebec and British Columbia. The regional differences are particularly marked among men, though here again it is possible that a scarcity of employment opportunities for women may be more apt to show up in their not being in the labor force than in their being unemployed. As can be seen from Table XVI, females account for the highest percentage of the labor force in Ontario, followed by British Columbia, the Prairies, Quebec and the Atlantic region in that order.

Very marked regional patterns have long been a feature of Canadian unemployment. We discuss the nature and origin of these persistent regional differentials in the next chapter.

The strongest impression which arises from this review of unemployment is the very wide diversity among the typical unemployment rates of different groups. The underlying reasons for this diversity are many and varied. Unemployment strikes most severely at the young, the poorly educated, the unmarried, those in the eastern regions of the country and those usually engaged in forestry and construction. Some of these differences in unemployment experience reflect different behavior and attitudes towards the need to keep a job. Some reflect the seasonal or intermittent pattern of de-

mand for labor in particular industries or occupations. Some reflect the tendency on the part of many employers to try to provide greater job security for their more experienced, older, and better qualified employees.

TABLE XVI

Regional Breakdown of Unemployment

(Averages of Monthly Figures 1965–70)

	Unemployment Rate as Percentage of Regional Group Labor Force	Group Unemployment as Percentage of Total Unemployment	Group Labor Force as Percentage of Total Labor Force
Males			
Atlantic	8.6	11.0	5.8
Quebec	7.0	30.5	19.8
Ontario	3.4	18.8	25.1
Prairies	3.2	8.2	11.6
B.C.	5.9	8.9	6.8
Females			
Atlantic	3.5	1.8	2.4
Quebec	4.2	7.8	8.4
Ontario	2.9	7.5	11.9
Prairies	2.2	2.4	5.1
B.C.	4.6	3.2	3.1

SOURCE: Statistics Canada, *The Labour Force.*

Seasonal Variations in the Labor Force, Employment and Unemployment

Whatever the underlying trend, the level of unemployment in Canada typically moves up and down through a wide range during the course of each year in accordance with a strongly marked seasonal pattern. These fluctuations are in turn the product of marked seasonal variations in the size of the labor force and in the number of people employed. Given the extremes of the Canadian climate, many kinds of economic activity are much less feasible or attractive at certain times of the year than at others.

The seasonal pattern of labor force participation is largely a reflection of the school year, although seasonal variations of more than trivial magnitude occur in the case of all age groups. To a considerable extent, the pattern of seasonality in employment resembles that of the labor force. The residual differences are great enough, however, to produce wide seasonal variations in the level of unemployment. In percentage terms the seasonal fluctuations in unemployment are much larger than those in employment or in the labor force, although in terms of the number of people involved they are much smaller.

A useful way of measuring the normal range of seasonal variation in these series is to compare the number who were employed or in the labor

force at the normal seasonal peak with the corresponding number at the seasonal low point. Needless to say, seasonal fluctuations vary in magnitude, timing and intensity from year to year and cannot be quantified simply by examining the raw data. Estimates made by the Commission, using the age-sex breakdown of the figures available from 1953 to 1970, suggest that the magnitudes shown in Table XVII would be typical of the differences between the seasonal maximum and minimum levels expressed as percentages of the maximum[15]. While the procedures used in calculating these figures do allow for different seasonal patterns for the various age-sex groups, they are undoubtedly under-estimates. Some who were employed or in the labor force when these series reached their seasonal lows were probably holding jobs of a seasonal character or would drop out of the labor force for seasonal reasons at some other time of the year. Nevertheless the figures are impressive. They suggest that something like 11 per cent of the jobs in the economy are of a seasonal character, and more than nine per cent of those who participate in the labor force do so on a seasonal basis. This seasonality is most striking among the younger age groups, many of whom are normally at school or university, but it is also appreciable among those aged 25 and over.

TABLE XVII

Seasonality of Employment and Labor Force

(Estimated differences between seasonal maxima and minima as percentage of maxima)*

	Employment	Labor Force
Males 14–24	29.8	27.4
Males 25 and over	5.6	1.9
Females 14–24	17.9	21.7
Females 25 and over	5.8	5.5
Total	11.0	9.4

*Calculated on the assumption of a constant, seasonally-adjusted unemployment rate of 4.7 per cent throughout 1969.

SOURCE: P.I.C. processing of data from the Labour Force Survey.

Seasonality in employment and in the labor force generates seasonality in unemployment to the extent that seasonal entrants to the labor force are unable to find work and to the extent that employment ends for seasonal reasons without the desire for employment also ending. The resulting seasonal pattern in unemployment is very pronounced, as will be seen from Figure 8 which plots monthly unemployment rates for the decade of the 1960s.

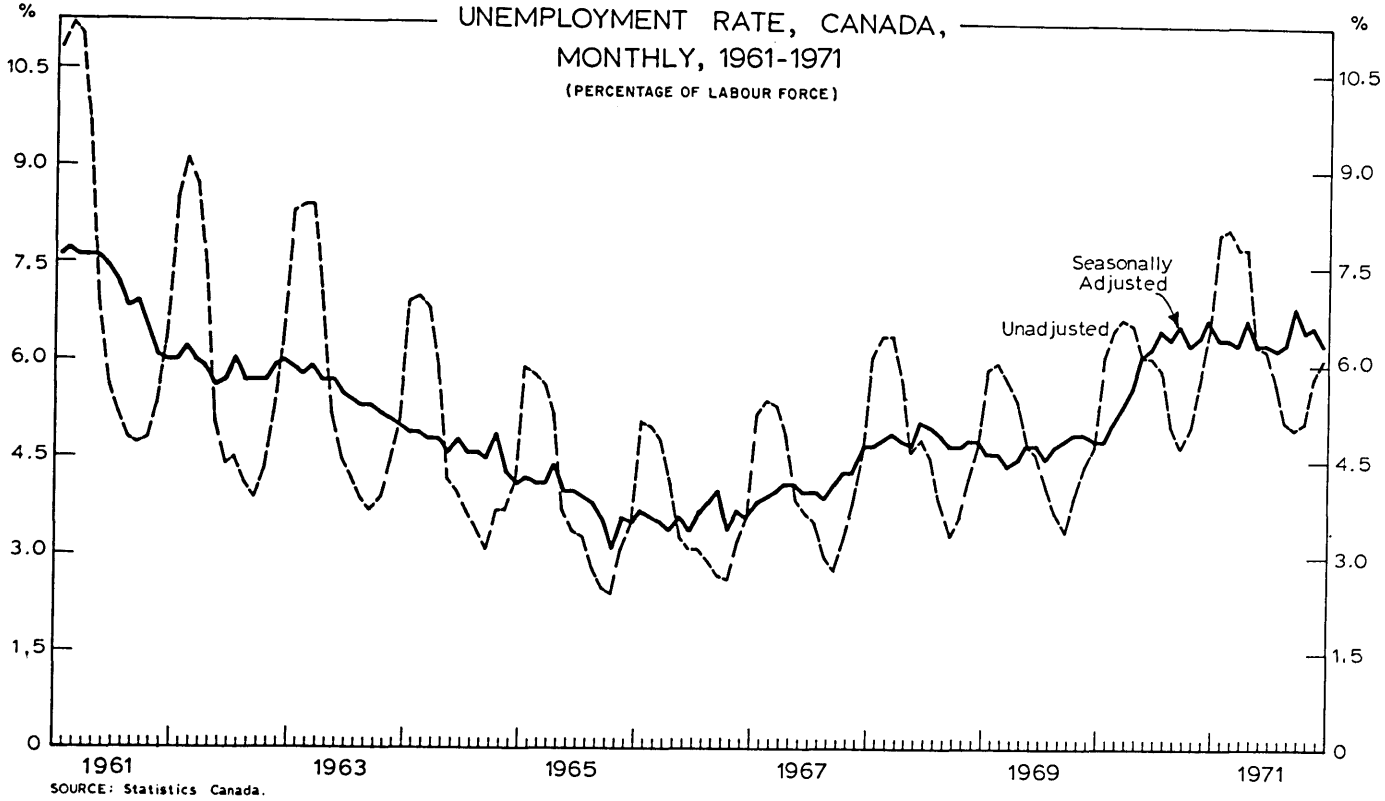
Allowance has to be made for these normal seasonal movements in drawing inferences about the underlying trend of unemployment from the monthly figures. The method usually adopted for doing this is to use 'seasonally-adjusted" unemployment rates. Seasonal adjustment is a statistical technique which estimates the typical amount of seasonality in a series and tries to allow

[15] For details of the estimates, Cf. Cragg, *op. cit.*, Ch. IV.

Figure 8

UNEMPLOYMENT RATE, CANADA, MONTHLY, 1961-1971

(PERCENTAGE OF LABOUR FORCE)



SOURCE: Statistics Canada.

for it so that figures for different months may be compared. (The figures represent an average over the year, however.) If seasonality contributes to the amount of unemployment experienced in the course of the year, the seasonally-adjusted rate will be higher than it would be if there were no seasonality.

It is likely that seasonal influences do increase the average level of unemployment which Canada experiences. It does this in two rather different ways. First, some workers with a fairly strong permanent attachment to the labor force work at seasonal jobs. When these jobs terminate, the workers involved experience periods of unemployment which would not occur if the jobs were not seasonal. Much of this sort of seasonality affects the unemployment rate for men over 25. It will be seen from Table XVII that the seasonality in the employment of adult males is much larger than the seasonality in their labor force participation. If the seasonality in their employment could be reduced, the average unemployment rate would be lower[16].

The second way that seasonality contributes to unemployment comes from the need for those whose participation in the labor force is seasonal to find jobs. Needless to say, this requires some searching for the available jobs and this search cannot be expected always to be successful immediately, or even in the period for which work is desired. Thus one would expect seasonality in labor force participation to produce some unemployment.

It is not clear to what extent seasonality in employment and seasonality in labor force participation are independent phenomena. In considerable measure one complements the other. Insofar as seasonality in labor force participation would exist in any event, it can be argued that seasonality of employment helps to keep the level of unemployment from being even higher, and that much of the seasonality in employment arises from the seasonal pattern of when people are available. On the other hand, if seasonal employment were not provided, quite possibly there would be fewer seasonal participants in the labor force.

As can be seen from Figure 8, the seasonality in the unemployment rate has been decreasing with present unadjusted rates in the winter months being lower relative to annual rates than was the case ten or fifteen years ago. There are a number of factors which have been working in this direction. First, there has been a relative shift in employment away from highly-seasonal industries in which many workers with a permanent attachment to the labor force look for seasonal jobs and are subject to seasonal lay-offs. Second, there has been some reduction in the degree of seasonality in such industries—particularly in construction, where the initial impetus of the Winter Works Programs seems to have resulted in permanent changes in techniques of a kind which reduce seasonality of employment. Third, some manpower training programs are deliberately counter-seasonal in their operation. They thus

[16] It is worth noting that the recent programs to remedy the problem of seasonal unemployment are aimed at both types. The Opportunities for Youth Program can be regarded as directed against the second type, while the Manpower Training Program and the Local Initiative Program attack the first.

tend to reduce unemployment in the worst months of the year to the extent that they engage people who would otherwise be unemployed or whose jobs are filled by workers who would otherwise be unemployed. The operation of these programs may have the effect of lowering the unemployment rate by as much as 0.5 per cent[17].

It might appear obvious that this has improved the underlying unemployment situation but the change which has occurred is not that simple. While the winter unemployment problem has been reduced the higher proportion of young people in the labor force and the higher proportion of this group who remain in school and seek temporary jobs has led to employment problems in the summer months[18].

Changes in the Composition of the Labor Force

The typical unemployment experience of various subgroups within the labor force differs widely. For example, young men have typically and continuously experienced much higher unemployment rates than other groups. Mature females have typically experienced relatively low unemployment rates. Over the last 20 years or so there have been marked changes in the composition of employment and the labor force. Some have arisen from demographic trends such as the greatly increased proportion of young people in the population. Others reflect changes in social and economic behavior, such as the increased participation of women in the labor force and employment.

These changes in population and the labor force are summarized in Table XVIII. The question arises as to whether these compositional changes have had a substantial effect on the meaning of the unemployment rate over the years since the early 1950s. If the historical rates of unemployment actually

TABLE XVIII

Changes in Labor Force and Employment Composition

(Percentage of Total Contributed by Group)
(Annual Averages of Monthly Figures)

	Population			Labor Force			Unemployment		
	1953	1964	1969	1953	1964	1969	1953	1964	1969
Males 14–24	11.3	13.1	14.5	14.9	13.6	14.8	29.1	28.3	29.1
Males 25 and over	38.6	36.6	35.2	63.0	58.0	53.4	59.0	53.0	46.0
Females 14–24	11.7	12.8	13.8	8.7	9.2	10.7	6.8	10.4	14.0
Females 25 and over	38.4	37.5	36.5	13.4	19.2	21.1	5.1	8.3	10.9

(Individual columns may not sum to 100 due to rounding error.)

SOURCE: P.I.C. calculations using data from the Labour Force Survey.

[17] See R. R. Kerton, *An Evaluation of Canadian Manpower Policies*, study prepared for the Prices and Incomes Commission, (Ottawa, Information Canada, forthcoming).

[18] This topic is discussed at greater length in Cragg, *op. cit.*

experienced by each separate sub-group are taken as given, but the weight of each sub-group in the total population of labor force is held constant over the period so as to eliminate the effect of these compositional shifts, are the overall unemployment rates calculated in this way greatly different from those actually recorded in the past? The answer to this question appears to be in the negative so far as Canada is concerned, although similar calculations for the United States do show substantial differences[19].

Table XIX gives the comparative unemployment rates for Canada for selected years based on two alternative assumptions: first, that the composition of the labor force had been the same in all years, and second, that the composition of the population from which the labor force is drawn had been the same in all years. The base composition of the comparison was 1969. Under both assumptions the unemployment rates actually experienced by each group in the year shown are taken as given, while the actual participation rates are used in the second calculation. It will be seen that the increase in the labor force participation of mature women, who have an unusually low unemployment rate, has been offset by the increased proportion of youth in the population and by some upward drift in the average unemployment rate for mature women. Thus while changes have occurred in the relative numerical importance of the various groups these shifts do not seem to have had much net effect on the level of the national unemployment rate over time because of the extent to which they have been mutually offsetting[20].

TABLE XIX

Effect of Changing Composition of Labor Force and Population on the Unemployment Rate

	Actual Unemployment Rate	Unemployment Rate Standardized to 1969 Labor Force Composition	Unemployment Rate Standardized to 1969 Population Composition
		(per cent)	
1956	3.4	3.3	3.6
1961	7.1	7.0	7.4
1966	3.6	3.6	3.6
1969	4.7	4.7	4.7

SOURCE: P.I.C. calculations based on the Labour Force Survey data.

Cyclical Changes in Unemployment

The unemployment rates for all groups tend to move together as the national unemployment rate changes. Higher unemployment tends to strike all groups in the labor force and all regions of the country. Its impact on

[19] Cf. G. A. Perry, "Changing Labor Markets and Inflation", *Brookings Papers on Economic Activity*, No. 3, Washington: Brookings Institution, 1970.

[20] It is sometimes argued that the relevant question is what unemployment rates would arise if the rate for "prime age" males (in the age range, for example, 25-54 or in some cases 25-44) were constant. Simulation results indicate (Cf. Cragg, *op. cit.*, Ch. V) that the rate would have declined from 1953 until the early 1960s and then risen again.

some groups is greater than on others, however, and this is reflected in some alteration in the character of unemployment as the overall level rises.

Increases in the percentage of the national labor force unemployed have a disproportionately strong effect on the unemployment rate among younger male workers. This group already tends to have the highest unemployment rates by a substantial margin. On the other hand, increasing levels of national unemployment affect female workers, especially ones over 25, less than proportionately. Estimates of the unemployment rates for other groups that have typically been associated with various levels of the seasonally adjusted unemployment rate for males 25-44 are shown in Table XX.

TABLE XX

Estimated Structure of Unemployment Rates Given the Rate for Males 25–44

Rates for Males 25–44	3%	4%	5%	6%
Males 14–24	7.2	9.0	10.8	12.6
Males 25 and over	3.0	3.9	4.9	5.8
Females 14–24	5.6	6.3	7.0	7.7
Females 25 and over	2.2	2.4	2.7	3.0
All groups	3.7	4.6	5.5	6.4

SOURCE: PIC calculations based on Labour Force Survey. Based on work in Cragg, *op. cit.*

The variations in the experience of different groups are, if anything, more pronounced when regional patterns are examined. Not only do the eastern regions of the country experience more unemployment at all times but the unemployed proportion of the labor force in these regions increases more than it does in other regions when unemployment rises. Patterns based on the experience of the last 17 years are shown in Table XXI.

TABLE XXI

Estimated Regional Variations in Seasonally-adjusted Unemployment Rates

National Rate	4%	5%	6%
Males—Atlantic	6.3	7.9	9.4
Females—Atlantic	3.7	4.0	4.3
Males—Quebec	6.2	7.7	9.1
Females—Quebec	4.6	5.2	5.9
Males—Ontario	2.7	3.7	4.7
Females—Ontario	3.1	3.5	3.9
Males—Prairies	2.9	3.6	4.4
Females—Prairies	2.6	2.9	3.2
Males—B.C.	5.5	7.0	8.9
Females—B.C.	4.7	5.2	5.8
Ontario—25 and over	2.0	2.6	3.3
Ontario—25 and over in September	1.3*	1.8*	2.4*

*Estimates of actual unemployment rates, not adjusted for seasonality.

SOURCE: PIC calculations from Labour Force Survey Data using regression techniques.

As we shall see in the next chapter, it is undoubtedly the case that the labor market in Ontario functions more smoothly than in other parts of the country in matching the flow of people who want work with the flow of jobs that become available. This is reflected in the lower unemployment rates typically experienced in Ontario. But even in Ontario there are special problems associated with unemployment among the young and with seasonal patterns. Thus, while a rate of five per cent unemployment on a national basis tends to produce a rate of about 3.6 per cent in Ontario, this, in turn, produces an unemployment rate of only 2.6 per cent among those over the age of 25. That, in turn, as the final entries in Table XXI indicate, produces a rate of only 1.8 per cent in the month of September.

It is evident that the persistence of marked regional differentials in unemployment underlies Canada's relatively high average unemployment rate since the early 1950s. The reasons for these differentials are discussed in the next chapter. The special problems of regional and youth unemployment are among the prime reasons why symptoms of excess demand for labor—notably a tendency for the rate of increase in wage rates to accelerate—have begun to develop at such high overall levels of unemployment. Were all our labor markets like those for persons over the age of 24 in Ontario, it seems possible that the economy could operate on a sustained basis at much lower rates of national unemployment. Conversely, it is less surprising that the average national rate we have managed to maintain since the early 1950s has been as high as five per cent when it is realized how low an unemployment rate this implies in the Ontario labor market, especially at the peak of seasonal tightness in September.

A higher unemployment rate does not simply mean that more people are unemployed. It also means that those who are unemployed remain so for a longer period of time. The magnitudes are highly uncertain, but one estimate is that someone who becomes recorded as unemployed can expect to remain unemployed on average about three months when the unemployment rate is four per cent. If the rate is five per cent, the average is likely to be three and one-half months, while at six per cent it is over four months[21].

These figures probably overstate the average duration of unemployment for two reasons. First, many who are unemployed remain so for such a short period that they are not so classified in the monthly survey, while the calculations apply only to those who are recorded as unemployed. In addition, the survey may well pick up some people as being unemployed who are in fact unable or unwilling to take any of the jobs which would be available to them. This category of reported unemployment would tend to be of very long duration and thus could produce an impression of the average duration of unemployment which would be quite atypical of the experience that most jobseekers can expect. However, while this estimate of the average duration of unemployment (based on the recorded figures) is almost certainly too high,

[21] Based on Cragg, *op. cit.*, Ch. V.

the differences indicated above in the average duration of unemployment as the overall level rises are unlikely to be similarly biased.

Unemployment Comparisons With Other Countries

Canadian rates of recorded unemployment are among the highest in the world. Among major industrial countries for which comparisons are made regularly, only the United States and, occasionally, Italy come close to the figures recorded in Canada.

Unfortunately, direct comparison of unemployment rates among countries is rendered difficult because of differences in the methods used to collect the data. Even countries which use sample surveys of households to determine the figures do not use identical concepts, definitions or procedures in gathering the data, and such differences introduce an element of non-comparability into the recorded data whose magnitude cannot be precisely assessed. Other countries base their unemployment statistics on sources of information other than sample surveys, and comparisons are made still more difficult.

Various attempts have been made to adjust unemployment figures for different countries to try to achieve a measure of technical comparability of the data. How successful these attempts have been is highly questionable, although it is likely that the results are more comparable than are the figures originally issued. One such attempt to provide greater statistical comparability is shown in Table XXII.

TABLE XXII

Unemployment Rates in Various Countries Adjusted to U.S. Concepts

	Canada	U.S.	Great Britain	France	Italy	West Germany	Sweden	Japan
1960	7.0	5.5	2.3	2.2	4.3	0.8	N.A.	1.7
1961	7.1	6.7	2.1	1.9	3.7	0.5	1.5	1.5
1962	5.9	5.5	3.0	1.9	3.2	0.4	1.5	1.3
1963	5.5	5.7	3.8	1.9	2.7	0.5	1.7	1.3
1964	4.7	5.2	2.6	1.6	3.0	0.3	1.5	1.2
1965	3.9	4.5	2.3	1.8	4.0	0.3	1.2	1.2
1966	3.6	3.8	2.4	1.8	4.3	0.3	1.6	1.4
1967	4.1	3.8	3.8	2.3	3.8	1.0	2.1	1.3
1968	4.8	3.6	3.7	2.7	3.8	1.2	2.2	1.2
1969	4.7	3.5	3.7	2.1	3.7	0.8	1.9	1.1
1970	5.9	4.9	4.0	2.2	3.4	0.5	1.5	1.2
1971	6.4	5.9	5.3	2.7	3.4	0.7	2.6	1.3

SOURCE: Monthly Labour Review, U.S. Dept. of Labor, June 1972.

Apart altogether from differences in measurement techniques, there are important differences in social and economic structure which help to explain why European countries appear to be able to maintain much lower average

unemployment rates than North American countries. The first difference has to do with the manner in which young people typically make the transition between school and employment of a permanent nature. In Europe this appears to be a much smoother transition than in North America, and it gives rise to much less temporary unemployment among young people. The educational system appears to place much more emphasis on the teaching of technical and vocational skills of immediate practical value to new entrants into the work force, and arrangements for placing school-leavers in apprenticeship programs, informal on-the-job training or permanent employment appear to be highly developed and widely used. In North America, by contrast, there seems to be a strong aversion to early job specialization for teenagers and their immediate placement in life-time occupations. In any case, with the notable exceptions of the United States and Italy, most other countries have much lower unemployment among younger members of the labor force than typically occurs in Canada, and new entrants are much less likely to spend considerable periods "floating" from job to job until they find a more permanent position satisfactory both to themselves and to their employer.

The better unemployment record of other countries is not confined to younger members of the labor force, but is of more general applicability. There is apparently a much stronger feeling of social pressure or obligation on employers to try to avoid lay-offs or dismissals which might be justified by variations in market conditions. This attitude probably is strongest in Japan, where job security until retirement appears to be virtually guaranteed. Reinforcing the effects of this tradition, penalties for job dismissal in the form of payments employers are required to make are often stronger in other countries than in Canada. In many cases there are requirements for prior notification to government agencies when large-scale lay-offs are in prospect. Arrangements for placement of those involved seem better established and possibly more effective than in Canada, where such programs are still in their infancy. Although solid information is not available, it seems likely, that matching the greater reluctance of employers to dismiss employees is a stronger tradition of loyalty to particular employers by their work force and much less of a tendency to quit to seek better or different opportunities.

These differences, relating to the extent of job turnover, are reinforced by the fact that in many other countries the small "family business" enterprise, plays a substantially larger role in the economy. This is particularly the case in agriculture and in the commercial sector. In such enterprises unemployment is virtually ruled out, though substantial underemployment and shrinkage of income may occur from time to time. Furthermore, with this form of business organization playing a larger role, there is more chance that those who lose their jobs will return to working in the family business and thus not be counted as unemployed.

For these and other reasons, it is evident that the different institutions, attitudes, and practices of other countries help them to maintain much lower average unemployment rates than appear to be feasible at present either in

Canada or in the United States. It is possible that changes in North American attitudes and practices would permit lower average unemployment. It can be argued, however, that many of the reasons for the lower unemployment rates in Europe and Japan arise from institutional features which inhibit efficiency as well as lower unemployment. In any event, the existence of these differences seems to go a long way towards accounting for the very different average levels of unemployment that prevail from country to country.