SEASONAL UNEMPLOYMENT IN CANADA, 1955 TO 1970

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1955 TO 1970

By

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SCOPE AND CONTENTS: The purpose of this thesis was to determine whether or not the average seasonal increase in unemployment from 1965 to 1970 had changed appreciably from the average which obtained during 1955 to 1960. Estimates of the average seasonal increase in unemployment indicated that its magnitude was smaller during the late sixties than during the late fifties. Regression equations were also estimated for each category, and these indicate that factors other than the general level of economic activity were responsible for the declining summer-to-winter increase in unemployment. Analysis of the employment indices suggests that this estimated decline has been mainly due to the changing industrial composition of the economy towards industries which are less prone to severe seasonal fluctuations in employment and unemployment.

ACKNOWLEDGMENTS

I wish to thank Professor F.T. Denton for suggesting the topic of this thesis and for his advice and assistance during the preparation of this study.

I also wish to thank Professor B.G. Spencer and Professor J.E.L. Graham for their constructive criticisms and helpful comments.

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I

INTRODUCTION

Canada has been severely hampered in the full utilization of its economic resources due to the polarity of its climatic conditions during the course of a year - especially the extremely cold temperatures which occur during the winter months. This has particularly been evident in the differences between the summer and winter unemployment rates.

Public concern with the winter unemployment problem in the mid-fifties led the Federal Government to establish a program designed to help alleviate this problem. First, an intensive publicity and promotion campaign was launched by the Department of Labour and the National Employment Service in order to inform the public about the problem and, in so doing, encourage increased winter construction. Second, the Canadian Government issued a directive urging all departments and agencies to plan their activities so as to maximize winter employment. As a result, the departments mainly concerned with the construction field (Public Works, Transport, Defence Production, National Defence, Finance, Defence Construction Limited, and Central Mortgage and Housing Corporation) shifted to the winter months a large proportion of their construction, purchasing, and postponable repair and maintenance work. In addition, the provincial governments

were urged to change their work schedules in order to facilitate increased winter employment.[1] Despite these efforts, however, seasonal unemployment steadily increased from the early fifties until 1957.[2]

In July 1958, the Federal Government organized a conference to discuss Canada's seasonal unemployment problem. In attendance were representatives from the provincial governments, industry, labour, consumers, universities, and other private organizations.[3] Some of the suggestions for increasing winter employment which arose from this conference were subsequently incorporated into the Federal Government's winter employment program.

In the autumn of 1958, the Municipal Works Winter Incentive Program was introduced. Under this program, the Federal Government agreed to pay a percentage of the direct labour cost on municipal projects that would not have usually been carried out during the winter. In addition, the

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[1] "Seasonal Unemployment in Canada", The Labour Gazette, LX, No. 7 (July 1960), 694-698.

[2] Douglas Hartle, "Seasonal Unemployment in Canada, 1951-7", Canadian Journal of Economics and Political Science, XXIV, No. 1 (February 1958), 93-98; and David C. Smith, "Seasonal Unemployment and Economic Conditions", in Arthur M. Ross, ed., Employment Policy and the Labor Market (Berkeley and Los Angeles: University of California Press, 1965), pp. 191-209.

[3] The Labour Gazette, 1960, p. 695.

Supplementary Government Winter Construction Program allotted funds to Federal projects undertaken in specified development areas and in high winter unemployment areas. The Winter House Building Incentive Program and promotion of National Housing Corporation Home Improvement Loans were instituted to increase winter residential construction. Farm Improvement Loans and Small Business Loans were also promoted in order to stimulate winter employment. Finally, the "Do It Now" publicity program of the Department of Labour and the National Employment Service was intensified both nationally and locally.[4]

In 1960-1961, the Canadian Senate conducted hearings on manpower and employment, during which the problem of seasonal unemployment was once again discussed.[5] In its Conclusions and Recommendations, the Senate Committee noted:

> In recent years a number of constructive and helpful steps have been taken under the leadership of the Federal Government to alleviate seasonal unemployment. However, in spite of these efforts the seasonal fluctuations in employment continue to be very large. More can be done by suitable planning and timing of public investment. It might involve some additional effort and cost but these would be small as compared with the repeated annual wastage resulting from high levels of seasonal unemployment.[6]

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[4]Canada, Department of Labour, Economics and Research Branch, The Impact of Winter on the Canadian Worker (Ottawa: Queen's Printer, 1965), pp. 33-36.

[5]Senate of Canada, Special Committee on Manpower and Employment, Proceedings, Nos. 1-24, and Final Report (Ottawa: Queen's Printer, 1961).

[6]Senate of Canada, Final Report, pp. 5-6.

This thesis will attempt to demonstrate that the average seasonal increase in unemployment which prevailed during the late sixties, i.e., from the third quarter of 1965 to the first quarter of 1970, is smaller than that which obtained during the late fifties, i.e., from the third quarter of 1955 to the first quarter of 1960. In addition, regression analysis will be used to show that this decline in the seasonal increase in unemployment was due to factors other than the general level of economic activity which prevailed during the periods considered.

Before, however, examining the determinants of seasonal unemployment and why it is of concern to both the public and private sectors of the Canadian economy, a general economic view of the labour market will be put forth in Chapter II. Chapter III indicates the characteristics of the five basic categories into which unemployment is usually divided, with special emphasis on seasonal unemployment. The Chapter closes with the definition of seasonal unemployment which will be used in the ensuing analysis.

Why is seasonal unemployment a problem? Is it, in fact, desirable to eliminate some of the fluctuations in employment and unemployment which do occur? These questions will be considered in Chapter IV.

In Chapter V a general picture of the seasonal variations in employment, indicating the regional differences, together with a general indication of the seasonal variations

in unemployment, noting once again the regional differences, will be presented. The characteristics of the seasonally unemployed with respect to distribution by region and, also, by sex and age group will be examined in Chapter VI, while the industry and occupation group distributions will be presented in Chapter VII. Finally, the duration of unemployment for those who have been laid off due to seasonal fluctuations in the demand for their labour services will be considered in Chapter VIII.

Chapter IX presents the results of the regression analysis carried out to determine whether or not the decline in the magnitude of the seasonal increase in unemployment, which is observed when the late sixties are compared with the late fifties, is independent of the general level of economic activity. It will be seen that the coefficient attached to the average unemployment rate, which is used as the measure of the general level of economic activity, is insignificant in all of the cases considered.

Chapter X summarizes the findings of this study and suggests the direction which further analysis might take.

II

THE LABOUR MARKET

In economic terminology, the word "market" refers to the interaction of the buyers and sellers of a factor of production, good, or service which simultaneously determines the price and quantity exchanged. Thus, a labour market is one in which the negotiations between the buyers (prospective employers) and sellers (prospective employees) simultaneously determine the price (wage rate) and quantity (employment in terms of man-hours) exchanged in the market.

While the word market itself does not specify any particular geographic area, general and official governmental usage usually considers the labour market as referring to a more or less specific area, in addition to a somewhat nebulous occupational limitation. Defining the labour market in these microeconomic terms, rather than in a macroeconomic context, may be justified by pointing out that it would not be realistic to consider the whole of Canada as one labour market when it is known that very few workers from Quebec will move to Ontario or Alberta in response to higher wages and improved working conditions which may prevail in the latter two areas, and that a change in the wages of Winnipeg carpenters will have limited, if any, effect in Toronto. In addition, the fact that the characteristics of the perfect labour market - a homogeneous labour force, perfect mobility,

and perfect competition - are not present in the Canadian economy cannot be ignored. Thus, perhaps the most realistic definition of a labour market is to designate it as "any geographic area within which labour mobility is adequately fluid to make the labour force responsive to changes in wages and working conditions".[1]

In Canada there are 110 labour market areas, each comprising an area "in which there is a concentration of industry to which most of the workers living in the area commute daily".[2] Each area, depending upon the degree of industrialization and population density, is designated as either Metropolitan (areas with a labour force of 75,000 or over); Major Industrial (areas with a labour force of 25,000 to 75,000, of which 60 per cent or more are engaged in non-agricultural activity); Major Agricultural (areas with a labour force of 25,000 to 75,000, of which 40 per cent or more are engaged in agriculture); and Minor Areas (with a labour force of 10,000 to 25,000). Ninety to ninety-five per cent of all paid workers are found in these areas.[3]

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[1] Stephen G. Peitchinis, The Economics of Labour: Employment and Wages in Canada (Toronto: McGraw-Hill, 1965), p. 36.

[2] "Explanatory Note to 'Classification of Labour Market Areas'", The Labour Gazette, LXIII, No. 6 (June 1963), 491.

[3] The classification of labour market areas and the summary table titled "Labour Market Conditions" have not been published since March 1967. See The Labour Gazette, LXVII, No. 3 (March 1967), 184.

The demand and supply conditions which prevail in each of these markets, in addition to those obtaining in the various "sub-markets"[4] operating within the above geographic classifications, when aggregated determine Canada's average wage and employment levels. When the supply of labour exceeds the demand for labour, unemployment occurs. The shifts in the demand for and supply of labour which result in unemployment are considered in Chapter III.

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[4] In one Metropolitan Area, the following sub-markets might be operating: the demand for and supply of plumbers, which would constitute one market; the demand for and supply of computer programmers, which would comprise another market; and so on for each specific occupation group.

III

TYPES OF UNEMPLOYMENT

There are five basic types of unemployment: cyclical, structural, technological, frictional, and seasonal. In addition, short-term unemployment due to irregular factors may also arise. Although each category bears the name of its principle cause, these five categories are not mutually exclusive, and the amount of responsibility that can be attached to each type for the total number of unemployed persons at any one time may vary considerably. Thus, since the measurement of total unemployment poses some difficult technical problems, the problem becomes compounded when an estimate of the specific effect of each component is desired.

Cyclical unemployment arises when contractions occur in the general level of economic activity. The demand for labour decreases due to reductions in the level of aggregate demand for the products and services produced by the labour input. Structural unemployment is caused by shifts in the economy's demand structure which are not matched by suitable changes in the structure of the occupational composition of the labour force. In this case there is a mismatching between demand and supply rather than a gap between the over-all demand for and supply of labour. Technological unemployment may arise when more efficient methods of production are introduced and workers are not immediately able to shift their services

from one process to another. In this case, net employment at the aggregate level may not necessarily increase; only the composition of the unemployed may change. Frictional unemployment arises when workers change jobs, when new workers enter the labour force for the first time, or when people re-enter the labour market after an absence. Frictional unemployment is primarily associated with mobility in the labour market and the difficulty of changing jobs without losing any time.[1]

The fifth basic type of unemployment - seasonal unemployment - is the one with which this thesis will be concerned. Seasonal unemployment is that which results from regular, annual fluctuations in economic activity, and it is this regular annual occurrence which distinguishes it from the other types of unemployment. In Canada, year after year, regardless of the phase of the business cycle, the number of unemployed persons starts to rise in the autumn, increasing more rapidly as winter approaches, reaches a maximum in February or March, and then begins to decline, reaching a minimum in September.

Seasonal variations in the demand for labour are caused by sharp temperature changes; peaks and troughs in the operation of certain industries because of the raw

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[1] Everett Johnson Burtt, Labor Markets, Unions, and Government Policies (New York: St. Martin's Press, 1965), pp. 394-399; and Peitchinis, pp. 195-204.

materials which they employ; the seasonal nature of certain production processes; and custom and style changes.[2]

Climate is the most fundamental cause of seasonal variations in the demand for labour. Production in industries such as fresh-water shipping, summer resorts, and, to some extent, agriculture and construction, completely ceases during the winter months. The cessation of shipping along the St. Lawrence Seaway from the beginning of December to the beginning of April results in a decline in employment, not only for those workers directly engaged in the transportation industry, but also for those employed by industries which may severely curtail their activities during the winter months, such as the grain elevators at Thunder Bay. The decreased tourist trade during the winter affects employment in hotels, resorts, and transportation. The decline in agricultural activity during the winter in turn affects the processing of perishable crops, some meat packing industries, as well as the farm implement and transportation industries. Decreased construction activity during the winter months also reduces the demand for building materials and construction equipment. Furthermore, fluctuations in consumer demand for certain "seasonal" products such as ice cream, beer, and carbonated beverages - products which cannot be stored for long periods

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[2] Peitchinis, p. 204.

of time - result in variations in the demand for labour in these industries.[3]

The decline in employment caused by the cold weather in the above cases is, unfortunately, only partially offset by increases in the demand for labour in the fuel and logging industries during the winter months. In fact, improved technology in the Eastern Canada logging industry has resulted in the employment peak shifting from the winter months to the autumn.[4]

Seasonal variations in employment may also be caused by custom and style changes. For example, the annual re-tooling carried out in the automobile industry in Canada and the United States halts production for a number of weeks. Similarly, clothing style changes and the production of merchandise for commercialized holidays, such as Christmas and Easter, cause seasonal fluctuations in employment since further production is stopped once the level of anticipated demand for that season has been reached.

While the preceding paragraphs have been concerned with seasonal fluctuations in employment which are due to

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[3]H.D. Woods and Sylvia Ostry, Labour Policy and Labour Economics in Canada (Toronto: Macmillan, 1969), p. 373; and Peitchinis, p. 205.

[4]Duncan R. Campbell and Edward B. Power, Manpower Implications of Prospective Technological Changes in the Eastern Canadian Pulpwood Logging Industry, Canada, Department of Manpower and Immigration, Research Monograph No. 1, June 1966.

changes in the demand for labour, seasonal employment variations may also occur in the supply of labour. These supply fluctuations are mainly caused by so-called seasonal workers who enter and leave the labour force during specific periods of time. These workers include students, who generally seek employment from June to September; persons who enter the labour force during the summer to work in camps and resort areas but who leave the labour force once the season is over; and young mothers who enter the labour force from September until June while their children are at school. In addition, there are the seasonal workers who are employed in short-season agricultural activities, such as picking fruit or tobacco, and who enter and leave the labour force as the demand for their services rises and falls.[5]

For the purpose of analysis, seasonal unemployment is defined, in this thesis, as the ratio of the net difference between the number of persons unemployed in the first quarter of a given year and the third quarter of the previous year to the number of persons unemployed in the third quarter of the previous year. Symbolically, this may be written as

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[5]Peitchinis, p. 206. Since 1966, seasonal workers from the Caribbean have been admitted to Canada to help Ontario farmers in growing, harvesting, and canning fruit and vegetables during the period from May 1 to November 15. It is expected that approximately 1,450 workers will be needed this year. See The Labour Gazette, LXX, No. 6 (June 1970), 396.

$$SU_t = (U1_t - U3_{t-1})/U3_{t-1}$$

where SU = seasonal unemployment

U1 = number of persons unemployed in the first quarter

U3 = number of persons unemployed in the third quarter.

Since the level of cyclical unemployment has been found to affect the "measured" level of seasonal unemployment,[6] four- or five-year averages will be used to help eliminate some of the cyclical component. For example, when the period 1965 to 1970 is being considered, this means that the third quarter figures for 1965 to 1969 inclusive have been averaged and that the first quarter estimates for 1966 to 1970 have been averaged to yield the final third and first quarter estimates for that particular period. While this method of calculating seasonal unemployment may, at times, result in either an over- or understatement of its magnitude, it does give a good general indication of the seasonal fluctuations which prevail in the Canadian economy.

In the following analysis, the terms "seasonal unemployment", "summer-to-winter increase in unemployment", "seasonal increase in unemployment", and "seasonality" are used interchangeably and refer to the definition of seasonal

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[6] The Labour Gazette, LX, No. 5 (May 1960), 446.

unemployment just noted. When the summer-to-winter increase in unemployment is given in percentage terms, this means that "SU" has been multiplied by one hundred. Third quarter averages have been used to calculate the summer employed and/or unemployed, while first quarter averages may be considered synonymous with the winter.

IV

THE IMPORTANCE OF ELIMINATING SEASONAL FLUCTUATIONS

Before analyzing the seasonal variations in employment and unemployment, the question of whether or not it is, in fact, desirable to eliminate some of the fluctuations which do occur should be considered.[1]

It has been suggested that a higher cost economy will result if seasonal fluctuations are eliminated. This contention, however, does not take into consideration a number of important factors:

First, when seasonal fluctuations are allowed to continue year after year in certain industries, costs arise which are borne by society and not by the industries concerned. These industries fully utilize their capital and labour input for short peak periods each year. Consequently, these capital and manpower resources are either idle or grossly under-utilized during the remainder of the year. If these under-utilized resources were channelled into other industries, society would reap higher levels of income. Furthermore, related industries are also induced to gear their operations

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[1] Labour Gazette, 1960, p. 445-446. In 1960, the Federal Department of Labour published a series of three articles dealing with Canada's seasonal unemployment problem. This chapter summarizes the reasons, put forth in Part 1 of the Series, why some of the seasonal fluctuations should be eliminated.

on a seasonal basis, thus further reducing potential income and output in the economy.

Second, the wage rates in seasonal industries are often higher than they would otherwise be because they do not operate at full capacity for twelve months each year. Thus, if the seasonal fluctuations in these industries could be eliminated, wages (and salaries) would be lower and, hence, unit costs would be lower.

Third, prices and wages tend to be flexible only in an upward direction. Thus, while upward pressure on wages and prices created by seasonal industries may occur during peak periods, these prices and wages will be maintained during the slack season, rather than moving downward. As a result, prices might be somewhat higher than would be the case if seasonal fluctuations in production did not occur.

Fourth, technological improvements have made possible continued winter operations in industries where it was not previously feasible, and this trend is expected to continue. Although the increased mechanization may reduce seasonal variations, it may also make them more expensive in terms of capital resources. There is, however, some evidence that seasonal fluctuations in output and employment can be, and have been, reduced without additional costs being incurred.

Fifth, skilled immigrants from other countries may be discouraged from entering Canada's labour force because seasonal unemployment tends to create the impression in other

countries that total unemployment in Canada is extremely high.

Finally, since advertising has been successful in persuading people to buy certain goods, it might also be successfully utilized in telling people when to buy in order to stabilize output and employment throughout the year.

Although the introduction of seasonal benefits under the Unemployment Insurance Act has reduced some of the economic hardship imposed on those laid off due to seasonal fluctuations, the under-utilization of capital and manpower resources is a serious problem which should not be ignored. Elimination of some of the seasonal variations in employment and output would greatly assist Canada in achieving its economic potential.

V

SEASONAL VARIATIONS IN EMPLOYMENT AND UNEMPLOYMENT

1. Technical Definitions and Reliability of Estimates

Although the primary concern of this thesis is to examine whether or not the estimated average seasonal increase in unemployment is smaller in the late sixties than occurred in the late fifties, seasonal variations in the labour force and in employment should not be neglected, since it is from these labour force and employment variations that seasonal unemployment results.

Before examining these labour force and employment variations, however, the technical meanings of "labour force", "employed", and "unemployed", as used by the Dominion Bureau of Statistics in its Labour Force Survey, should be noted, since it is this Labour Force Survey which is the source of all of the labour force, employment, and unemployment data used in this study (with a few exceptions which are duly noted). The statistics used in the calculations and the charts are the seasonally unadjusted estimates, unless otherwise noted. The following definitions are from the Dominion Bureau of Statistics' monthly publication, The Labour Force:

The "labour force" is composed of persons in the civilian, noninstitutional population, 14 years of age and over, who reside in Canada (with the exception of residents of the Yukon and Northwest Territories, and Indians on

reserves) and who, during the reference week, were employed or unemployed.

The "employed" includes all persons who, during the reference week:

(a) did any work for pay or profit;

(b) did any work which contributed to the running of a farm or business operated by a related member of the household; or

(c) had a job, but were not at work because of bad weather, illness, industrial dispute, or vacation, or because they were taking time off for other reasons.

Persons who had jobs but did not work during the reference week and who also looked for work are included in the unemployed as persons without work and seeking work.

The "unemployed" includes all persons who, during the reference week:

(a) were without work and seeking work, i.e., did not work during the reference week and were looking for work; or would have been looking for work except that they were temporarily ill, were on indefinite or prolonged layoff, or believed no suitable work was available in the community; or

(b) were temporarily laid off for the full week, i.e., were waiting to be called back to a job from which they had been laid off for less than 30 days.

The estimates contained in the Labour Force Survey are based on information obtained from a sample survey of 30,000 households and, as such, are subject to sampling and other kinds of error. In general, the smaller the sample, the larger the sampling error. The reliability of the Labour Force Survey estimates is noted in each issue of The Labour Force. The questionnaire used in the Labour Force Survey is reproduced as Appendix A.

2. Seasonal Variations in Employment

Chart 1 illustrates the annual fluctuations which took place in Canada's total labour force and employment levels from 1955 until the end of 1969. The peak in employment usually occurs in August, with the low point occurring in February and March. This is true of all regions except the Atlantic, where the summer peak occurs in July; British Columbia, where the winter turning point is in January; and the Prairie Region, where the winter turning point is either January or February.

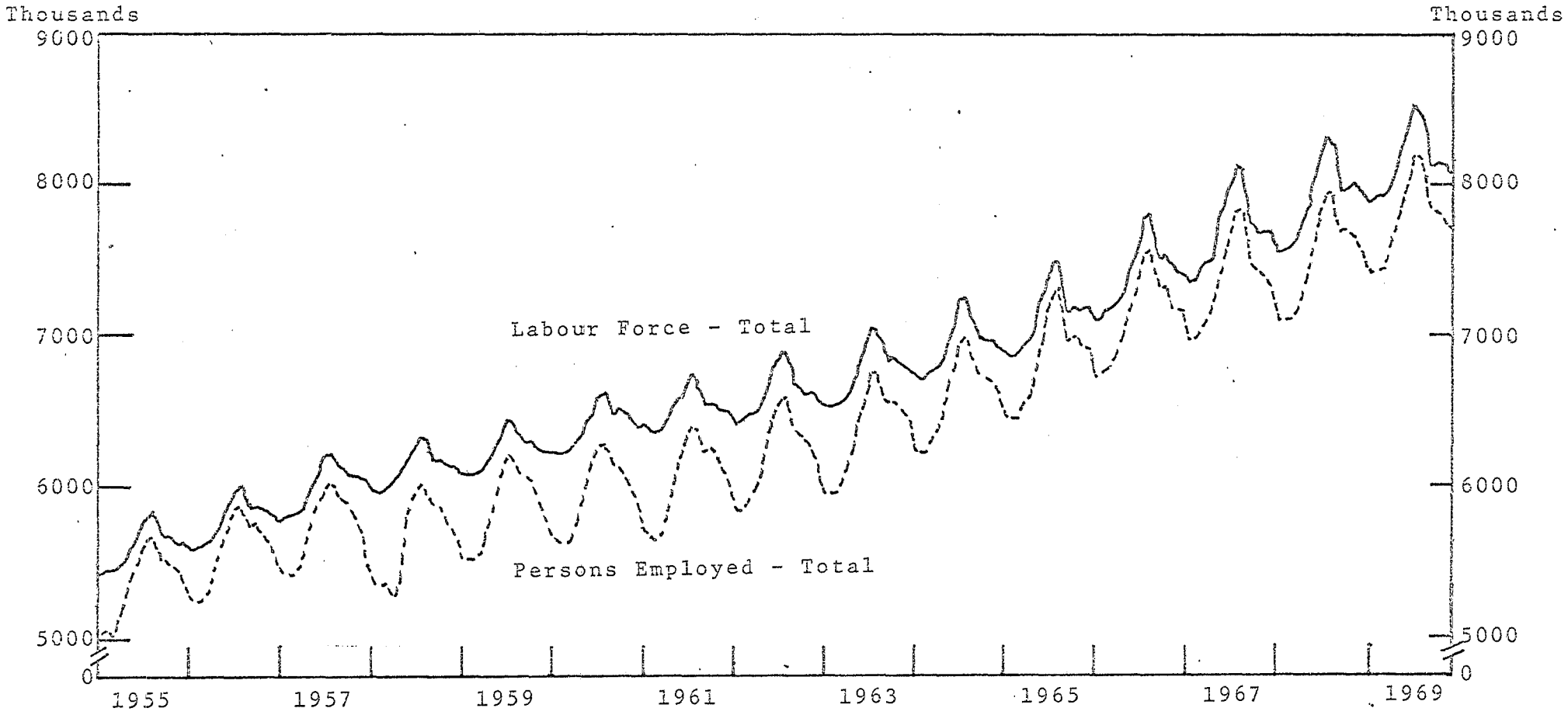
Chart 2 shows the labour force and employment behaviour in the nonagricultural sector of the Canadian economy. In this case the magnitude of the seasonal decline in the labour force is noticeably less than the seasonal decline in employment levels. This chart, as in the case of Charts 1 and 3, shows only the net reductions which occur in the labour force and employment levels. Many more jobs disappear due to seasonal reasons than is shown by the net change; however, new jobs appear during the summer-to-winter period, thus reducing the net downward movement which occurs from the summer peak to the winter low.

A major reason for the relatively small decline in the nonfarm labour force when seasonal jobs terminate is that most of these jobs are held by men, especially those in the 25 to 64 age group, and a characteristic of these workers

CHART 1

LABOUR FORCE AND PERSONS EMPLOYED - TOTAL

BOTH SEXES, CANADA, JANUARY 1955 TO DECEMBER 1969



Source: D.B.S., Labour Force Survey

LABOUR FORCE AND PERSONS EMPLOYED - NONAGRICULTURE AND AGRICULTURE
BOTH SEXES, CANADA, JANUARY 1955 TO DECEMBER 1969

CHART 2

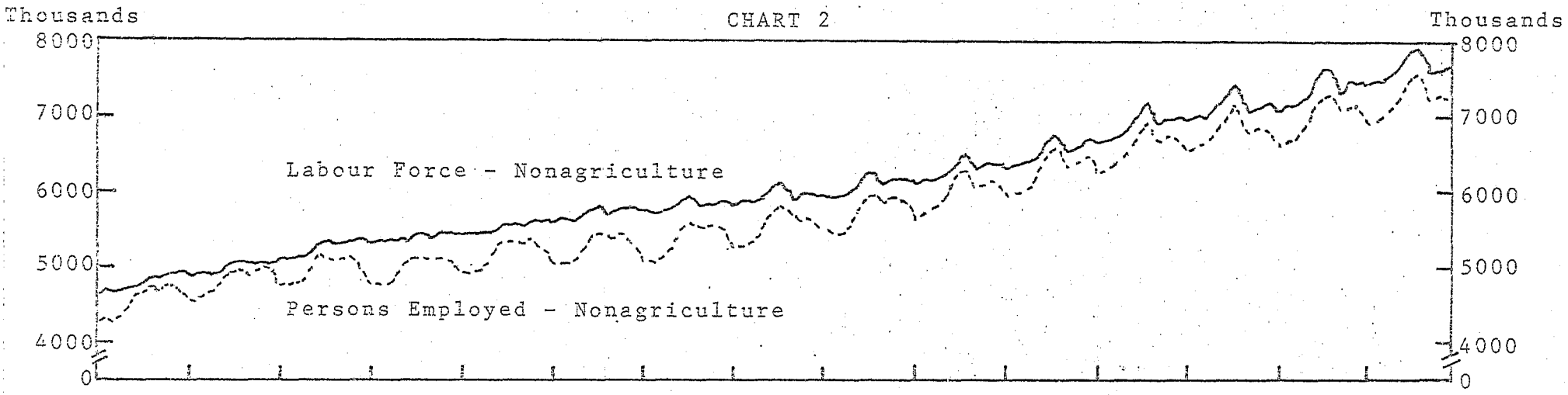
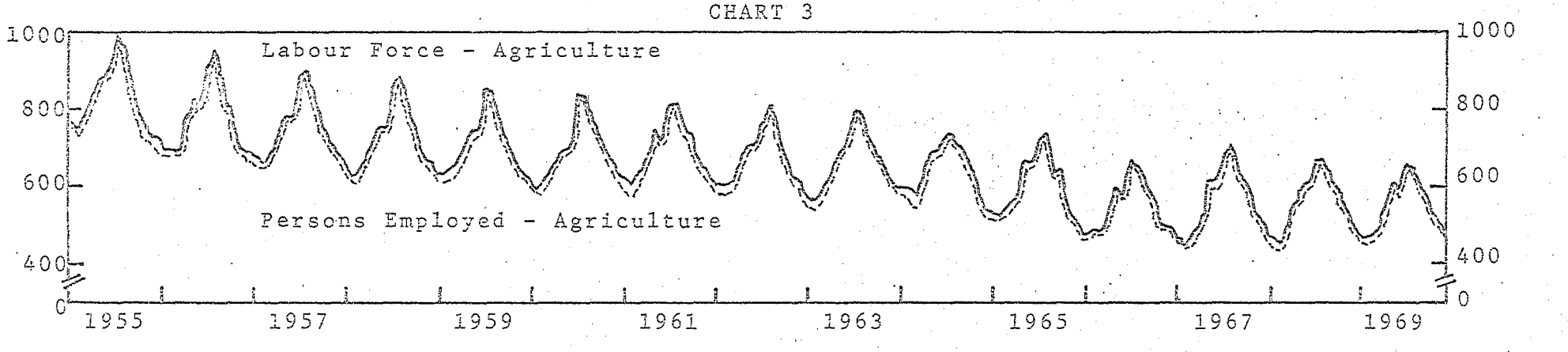


CHART 3



Source: D.B.S., Labour Force Survey

is that they tend to remain in the labour force, regardless of the reason why they lost their jobs.[1]

Chart 3 shows the seasonal variations in employment and the labour force in the agricultural sector of the economy. Note that the seasonal fluctuations in the farm labour force and employment levels differ from the non-agricultural group in that the seasonal variations are more pronounced and, secondly, that the seasonal pattern of the farm labour force and farm employment are almost identical. While a large number of the farm workers who are laid off at the end of the growing and harvesting season withdraw from the labour market, some may seek employment in nonfarm industries; however, the exact magnitude of this latter group is not known.[2]

These summer-to-winter fluctuations may also be represented by a statistical measure known as a seasonal index (or factor). A seasonal index is the ratio of the actual value to the value with the seasonal influences removed. This seasonal index will be less than one during months when the original observation is low for seasonal reasons, and it will be greater than one in months when the original observation is high due to seasonal reasons. By

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[1] Gil Schonning, Economics and Research Branch, Proceedings, No. 16, p. 1074.

[2] Proceedings, p. 1075.

convention, the average of the seasonal indices for the year is taken to be one. Hence, the dispersion of the seasonal indices about the annual average of one may be considered as the measure of the seasonal amplitude of a series.[3]

The seasonal indices used in this study were computed by the Dominion Bureau of Statistics using the X9 Version of the United States Bureau of the Census Method II Seasonal Adjustment Computer Program.[4] In the charts that follow, the published seasonal indices have been multiplied by one hundred. As a result, the yearly mean will be one hundred instead of one.

Chart 4 shows the seasonal amplitude of total, non-agricultural, and agricultural employment. Note that non-farm employment exhibits a seasonal swing from peak to trough of approximately 7 percentage points, while the swing in farm employment exceeds 30 percentage points. As mentioned earlier, the seasonal pattern of nonfarm employment, which

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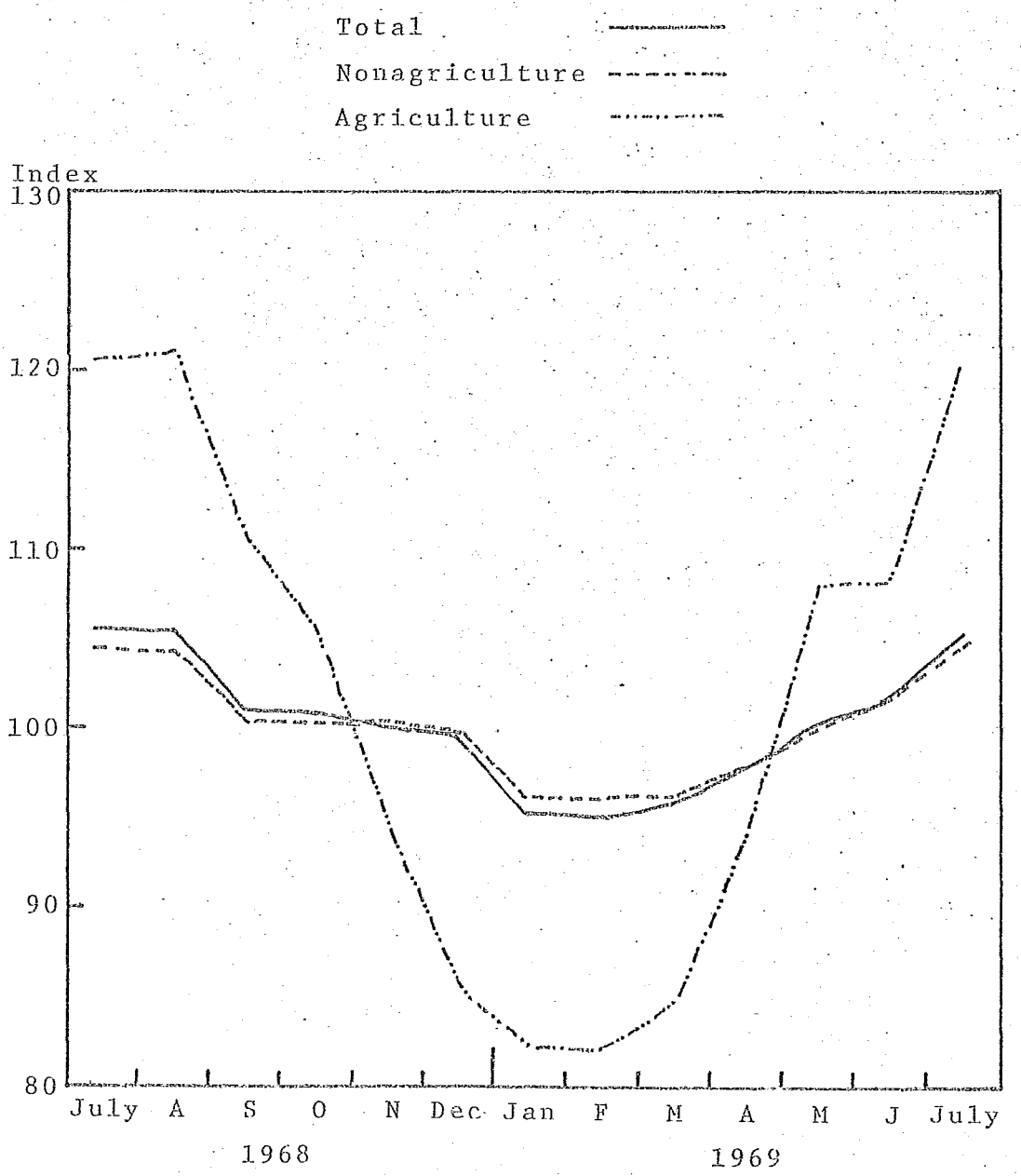
[3] Smith, p. 193.

[4] Dominion Bureau of Statistics, Seasonally Adjusted Labour Force Statistics, January 1953 - December 1969. A general description of the Bureau of Census Method II may be found in Julius Shiskin, "Electronic Computers and Business Indicators", Journal of Business, XXX, No. 4 (October 1957), 219-267; reprinted as Occasional Paper 57, National Bureau of Economic Research; and Julius Shiskin and Harry Eisenpress, "Seasonal Adjustments by Electronic Computer Methods", Journal of the American Statistical Association, LII, No. 280 (December 1957), 415-449.

CHART 4

SEASONAL INDICES OF PERSONS EMPLOYED
TOTAL, NONAGRICULTURE, AND AGRICULTURE
BOTH SEXES, CANADA, JULY 1968 TO JULY 1969



Source: D.B.S., Labour Force Survey

accounts for more than 85 per cent of total employment, is fairly regular and, thus, predictable - although the amplitude does expand or contract slightly, depending upon the prevailing business conditions. The seasonal pattern of farm employment is, however, more irregular due to the influence of crop conditions and weather.[5]

Examination of the seasonal indices for total employment (Canada) indicates that winter employment appears to be slightly less influenced by seasonal influences during the late sixties than it was during the late fifties, while summer employment is exhibiting a larger deviation from the mean. A similar pattern is evident when the seasonal indices for nonagricultural employment are considered, while agricultural employment appears to have been increasingly affected by seasonal influences during the last fifteen years. While changes are occurring in the amplitude of the seasonal indices, the trend appears to be smooth, rather than possessing any sharp turning points. The final seasonal factors for total, nonfarm, and farm employment in Canada, in addition to the final seasonal factors for the labour force, Canada, total and nonagriculture, have been reproduced in Appendix B. On the average, seasonal influences appear to be more evident in the late sixties than in the late fifties for both the total and nonagricultural labour force.

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[5] Proceedings, p. 1075.

3. Regional Differences in Employment Variations

The extent of the seasonal variations in total and/or nonagricultural employment in Canada and the five regions of Canada is shown in Charts 5 to 8.

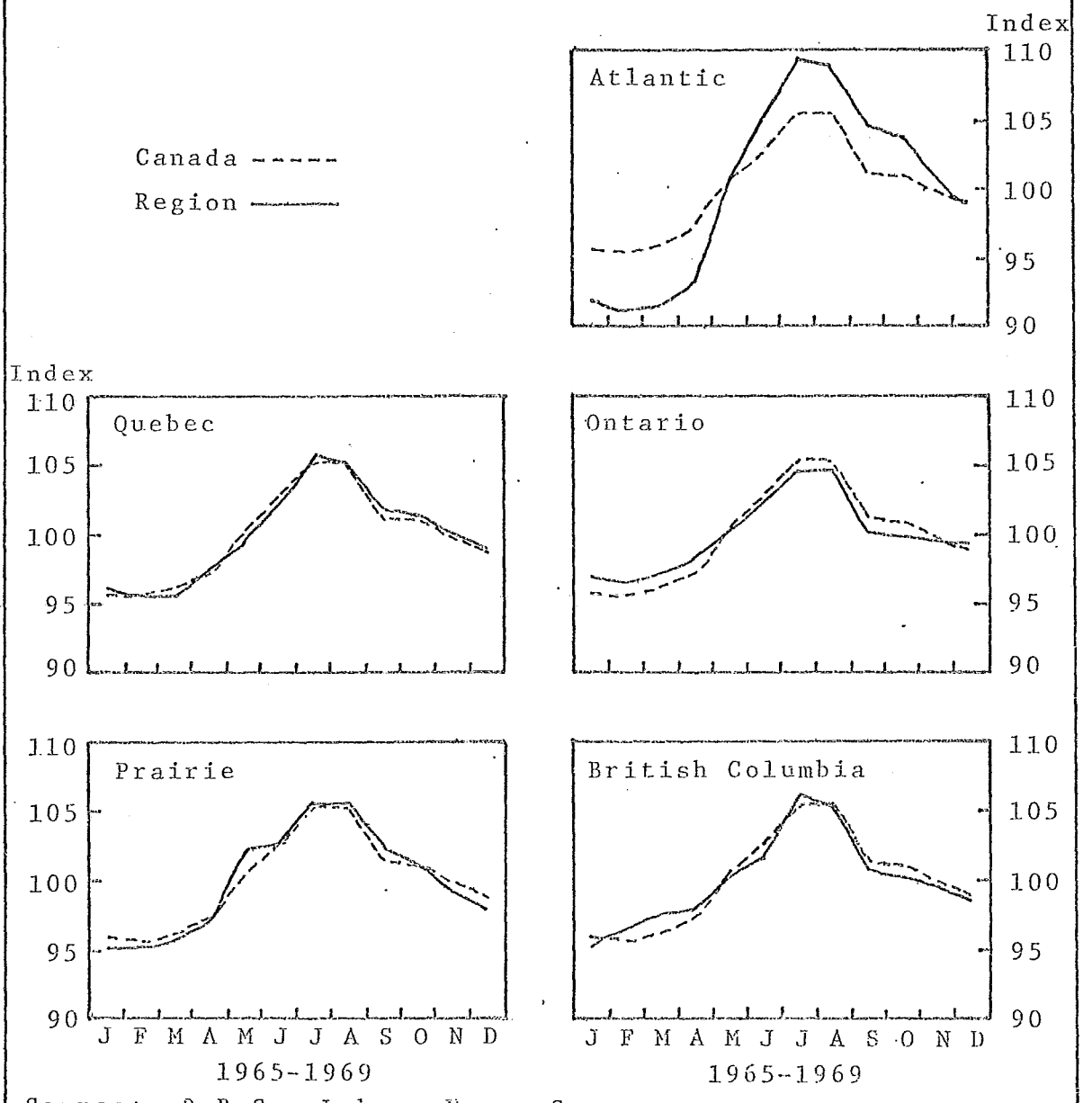
The broken line in Chart 5 shows the average seasonal indices of persons employed in Canada in the late sixties, and these have been superimposed on the regional indices for the same period in order to afford a comparison of the regional and national employment variations. A comparison of the average seasonal indices of Canada with each of the regions for the late fifties yields a pattern similar to that observed for the period from 1965 to 1969.

In Chart 6, the average seasonal indices for 1955 to 1959 (broken line) have been superimposed on the corresponding average 1965 to 1969 seasonal indices for Canada and each region in order to give some indication of the difference between the two periods. The effect of seasonal influences on employment variations appears to have decreased during the first quarter for Canada and each region, except Ontario, when the two periods are considered. The Prairie Region is the only one in which the summer decline in seasonality is clearly observable.

Charts 7 and 8 show the seasonal indices of persons employed in the nonfarm industries compared with the total employed in the five regions for 1955 to 1959 and 1965 to

CHART 5

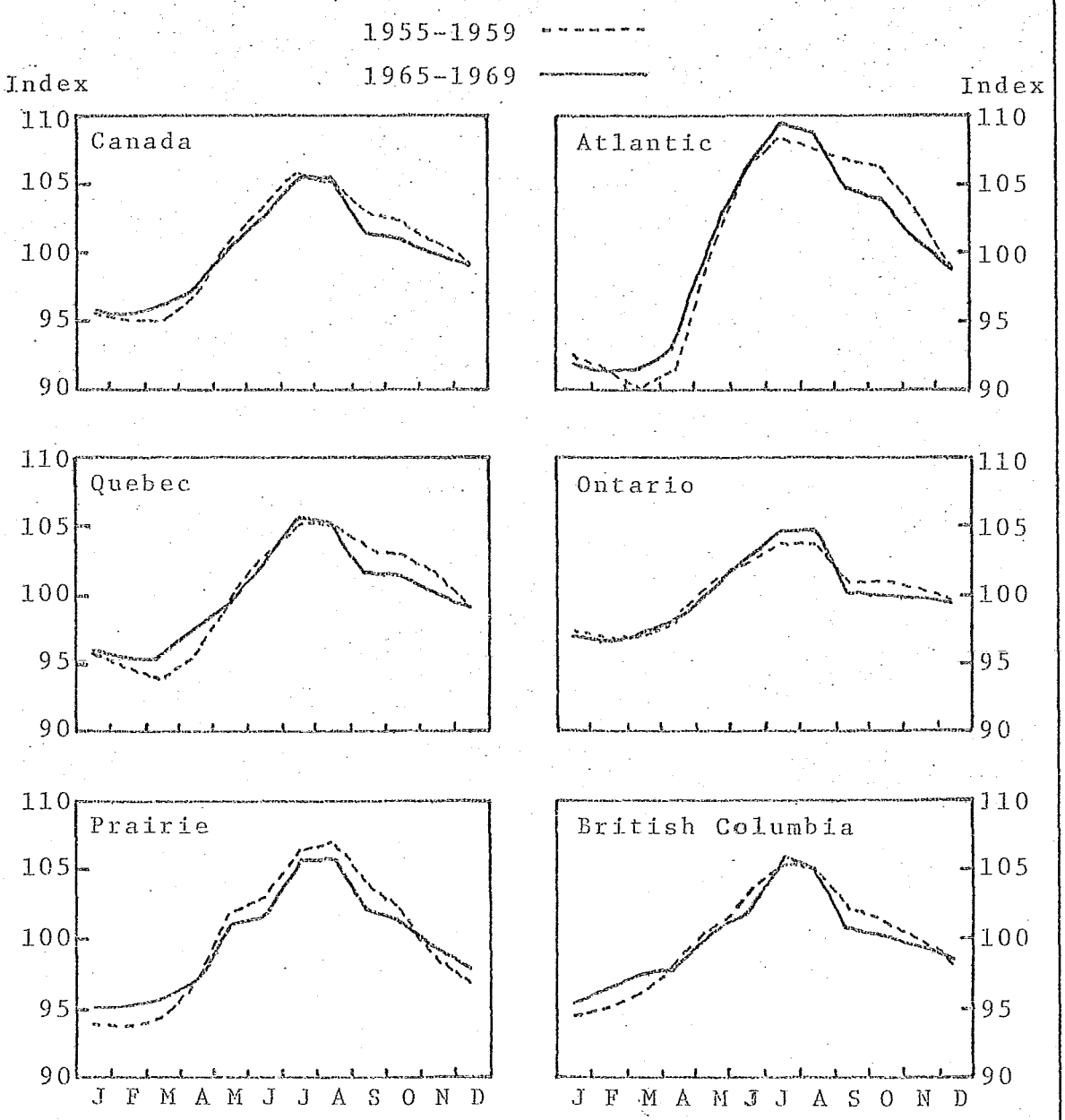
SEASONAL INDICES OF PERSONS EMPLOYED
TOTAL, BOTH SEXES, CANADA AND REGIONS
AVERAGE FOR EACH MONTH, 1965-1969



Source: D.B.S., Labour Force Survey

CHART 6

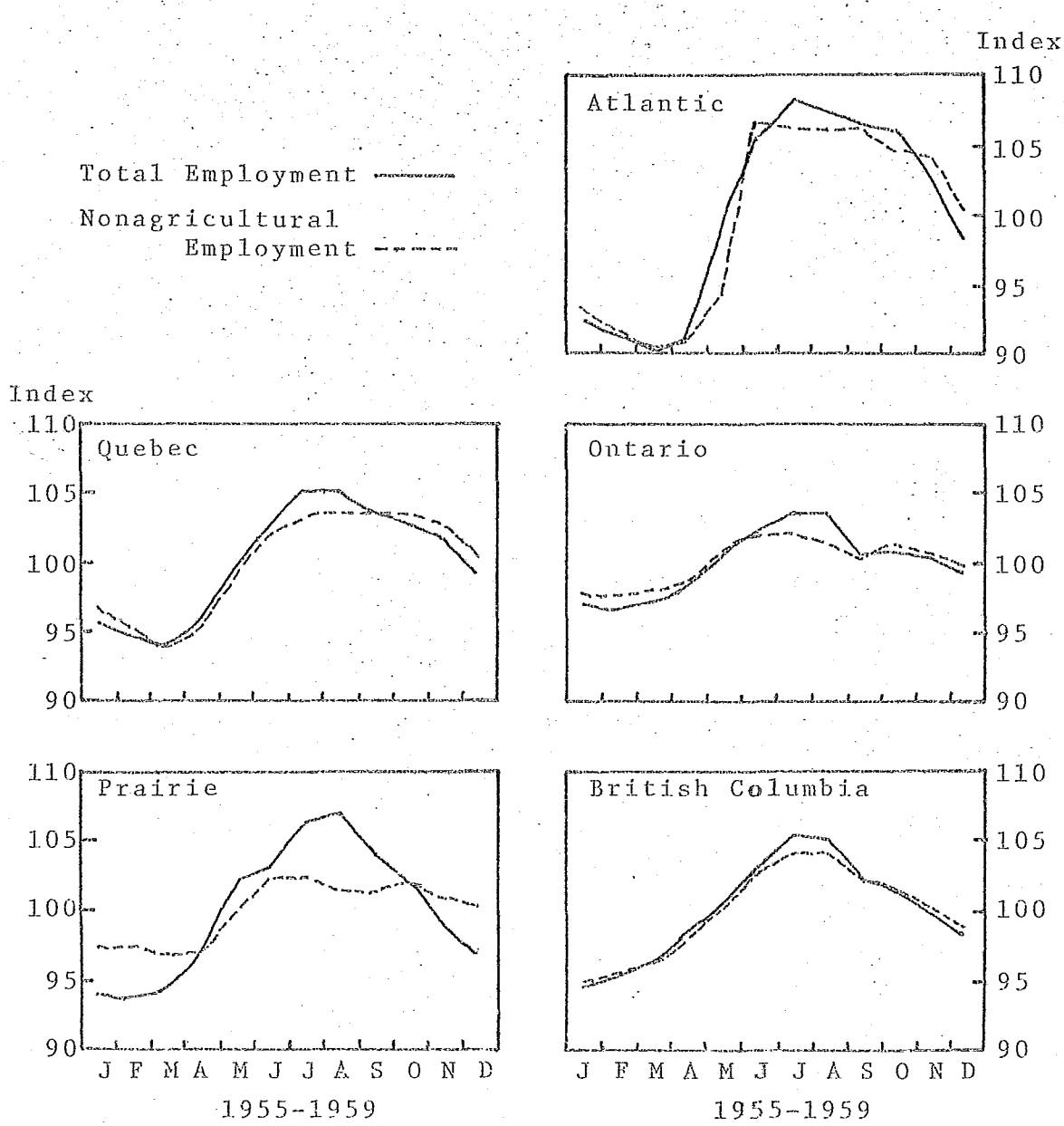
SEASONAL INDICES OF PERSONS EMPLOYED
TOTAL, BOTH SEXES, CANADA AND REGIONS
AVERAGE FOR EACH MONTH, 1955-1959 AND 1965-1969



Source: D.B.S., Labour Force Survey

CHART 7

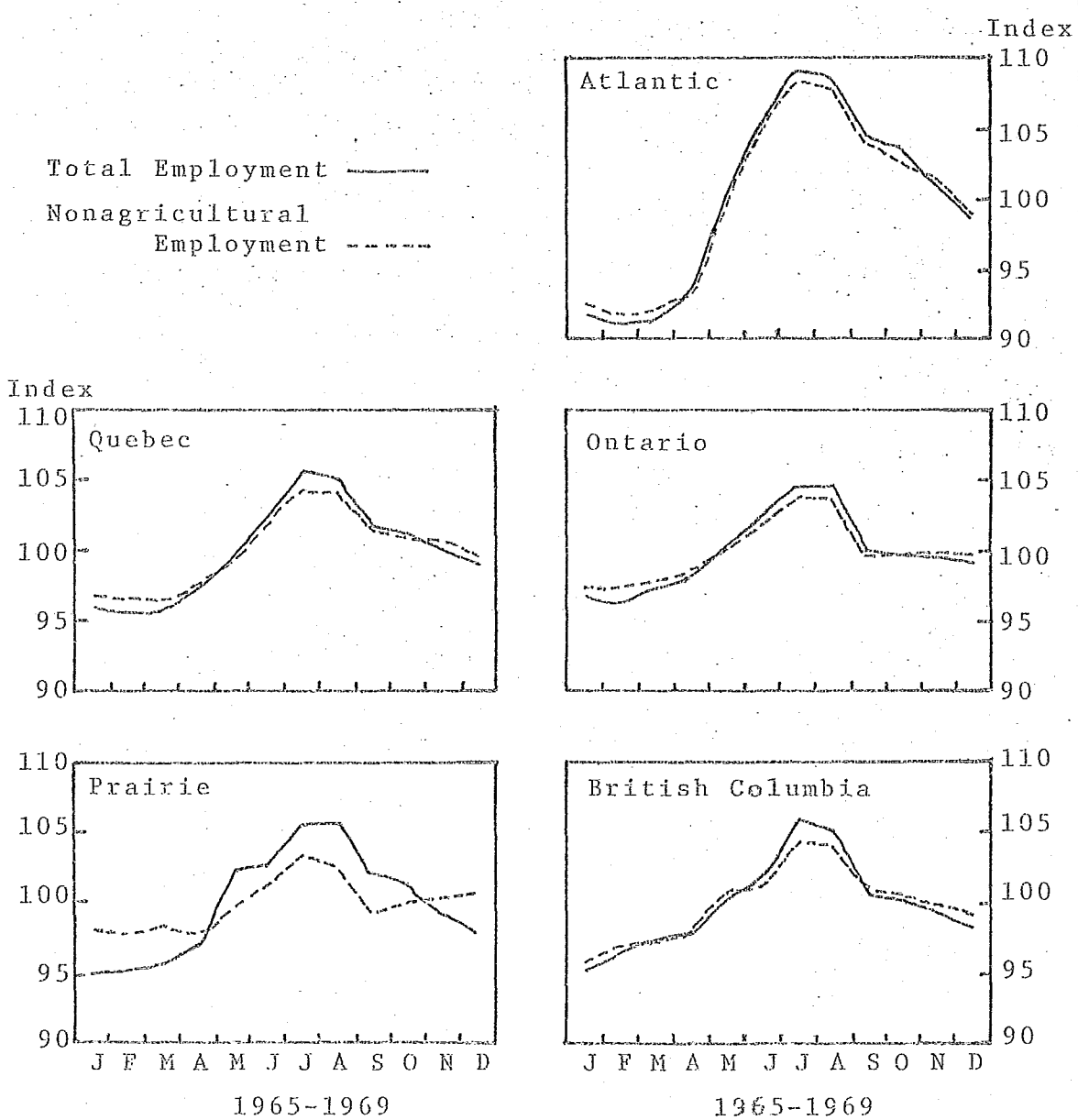
SEASONAL INDICES OF PERSONS EMPLOYED IN NONAGRICULTURAL INDUSTRIES IN CANADA'S FIVE REGIONS BOTH SEXES, AVERAGE FOR EACH MONTH, 1955-1959



Source: D.B.S., Labour Force Survey

CHART 8

SEASONAL INDICES OF PERSONS EMPLOYED
IN NONAGRICULTURAL INDUSTRIES IN CANADA'S FIVE REGIONS
BOTH SEXES, AVERAGE FOR EACH MONTH, 1965-1969



Source: D.B.S., Labour Force Survey

1969, respectively, thus indicating the importance of agriculture in the seasonal pattern of the various regions. Comparing Charts 7 and 8 shows that employment fluctuations in agriculture have become relatively smaller during the late sixties.

As noted previously, peak employment occurs in July or August in all regions, but the winter trough occurs earlier in the West than in the East - in British Columbia in January, in the Atlantic Region in March. The magnitude of the seasonal swings in employment is also considerably different among the five regions, with the Atlantic Region having an amplitude of more than twice that of Ontario. As will be shown in Chapter VII, the industries that give rise to the largest seasonal variations in employment are the primary industries, construction, and the industries that process their products or supply them with goods and services. The regions in which these industries are concentrated have the largest seasonal variations in employment.

4. Seasonal Variations in Unemployment

While the seasonal amplitude of total employment indicates that between 400 and 500 thousand fewer persons are employed in winter than in summer, not all of these workers become seasonally unemployed in winter. Students returning to school leave the labour force as do farmers, unpaid family workers, and others who prefer not to work during the winter months. This shift in labour supply reduced the number of persons who form part of the labour force during the summer peak but who are not part of the labour force during the winter trough by an estimated average of more than 300 thousand workers in the late sixties, thus reducing the number who would otherwise become seasonally unemployed.

Chart 9 shows the seasonal swing of the unemployed in Canada. The seasonal indices for each month were averaged for four years, beginning in March 1965 and ending in February 1969. Four-year averages were also calculated for March 1955 to February 1959 to determine whether or not the seasonal amplitude of unemployment had changed. The seasonal swing appears to have decreased somewhat during the late sixties when compared to the late fifties. Although the seasonal variations in unemployment may vary slightly from year-to-year, the curve shown in Chart 9 depicts the general pattern.

While the seasonal swing in total employment is determined by the net difference in the number of jobs which

CHART 9

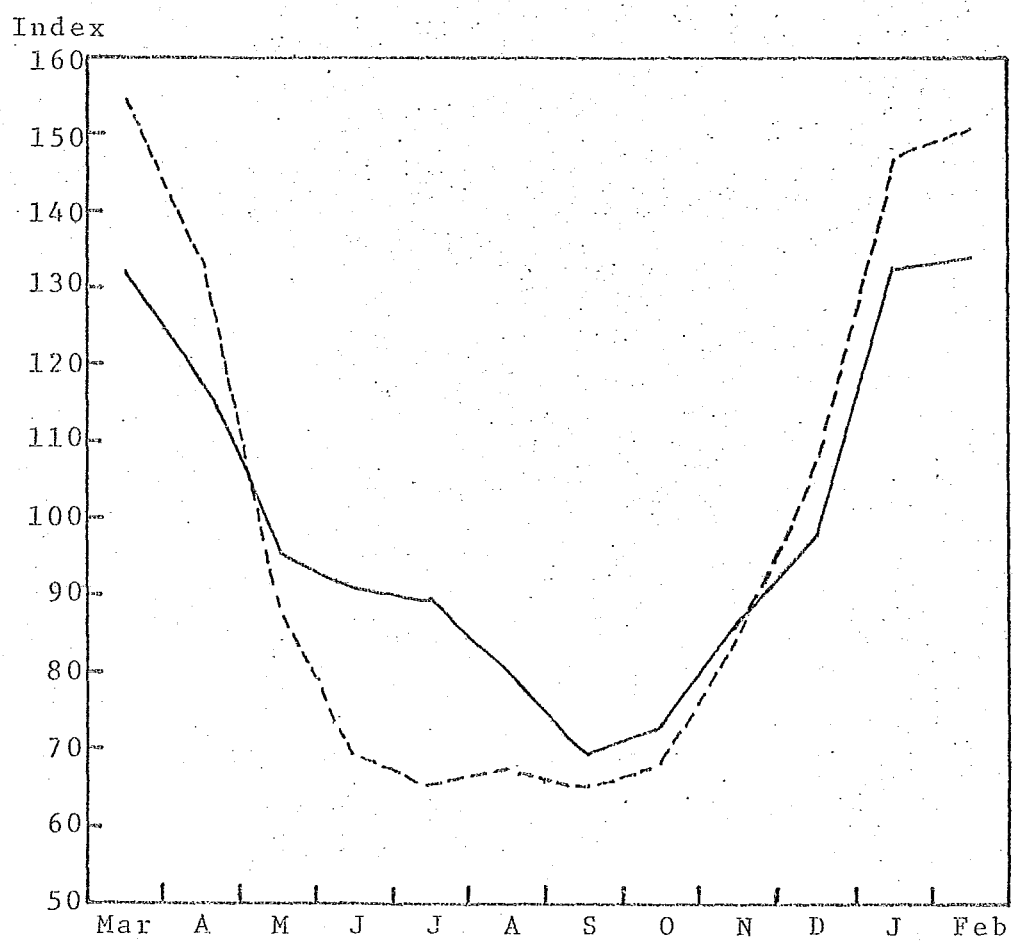
SEASONAL INDICES OF PERSONS UNEMPLOYED

TOTAL, BOTH SEXES, CANADA

MONTHLY AVERAGE FOR FOUR 12-MONTH PERIODS

MARCH 1955 TO FEBRUARY 1959 - - - - -

MARCH 1965 TO FEBRUARY 1969 ———



Source: D.B.S., Labour Force Survey

are filled between the summer and winter, seasonal unemployment is affected by a number of other factors. First, some of the persons who are laid off may decide to leave the labour force rather than seek other employment. Secondly, most seasonal workers enter the labour market during the summer when employment in the seasonal industries is at its highest; when laid off they may or may not leave the labour force. Of those who leave, a small number may re-enter the labour market during the autumn or winter to seek employment in other seasonal industries. Thirdly, there is no clear-cut division between those workers who have been laid off from seasonal industries and those who have lost their jobs because of cyclical or other reasons. The former may try to seek more permanent positions while the latter may seek work in seasonal industries. Thus, it is very difficult to assess precisely the magnitude of seasonal unemployment from one year to the next, especially under varying economic conditions.[6]

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[6] The Labour Gazette, 1960, p. 452.

5. Regional Differences in Unemployment Variations

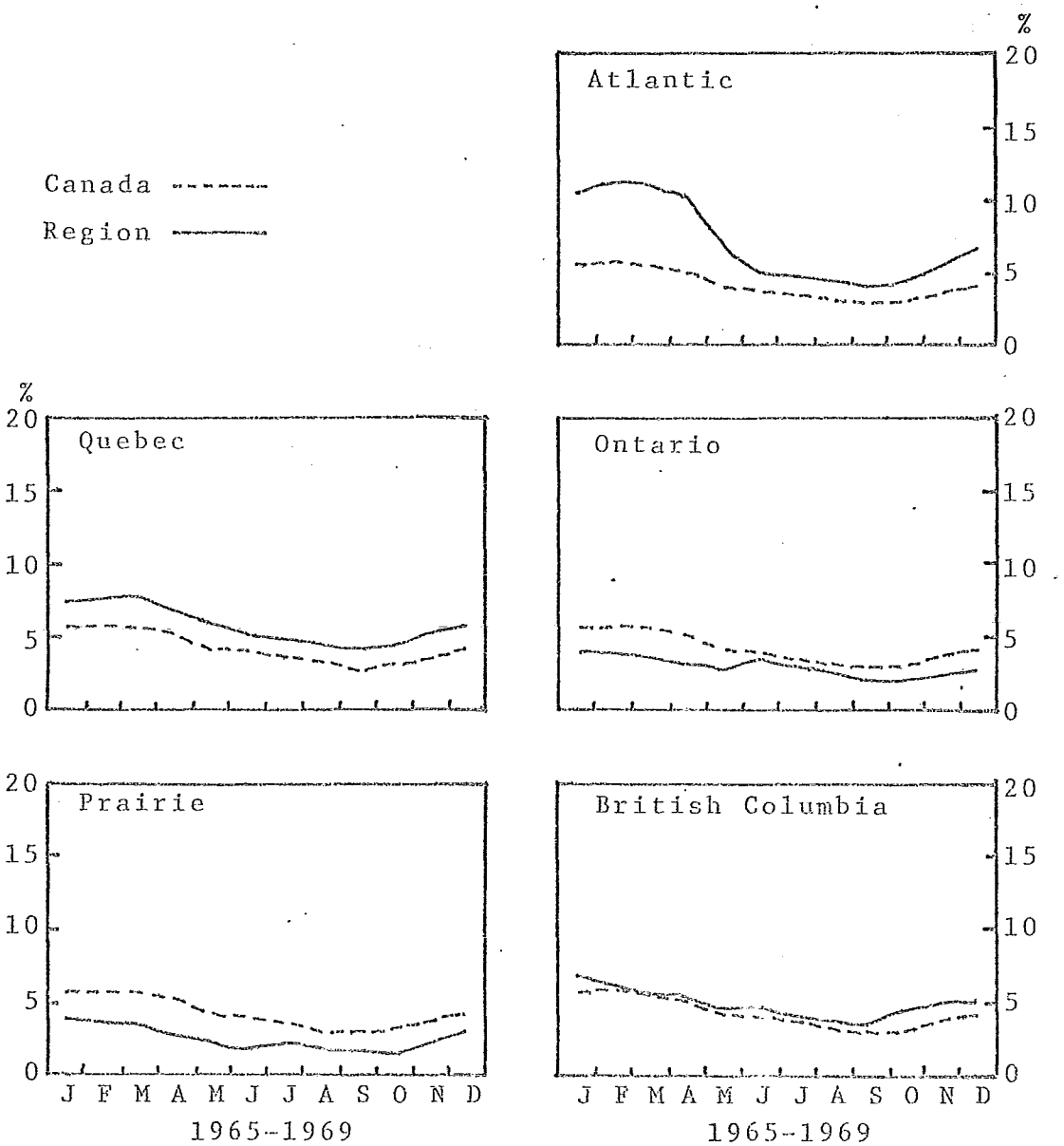
The regional differences in unemployment variations during 1965 to 1969 are shown in Chart 10, which illustrates the unemployed in each region as a percentage of the labour force in that region. In addition, Canada's average monthly unemployment rate for the late sixties has been superimposed on each region, by means of a broken line, in order to facilitate comparison of the regional average with the national average.

The Atlantic Region exhibits the largest variation in unemployment between the winter and the summer, with the smallest occurring in Ontario. This is partly due to the industrial composition of the two regions. In the Atlantic Region, the primary industries, which exhibit the largest seasonal variations, are relatively large, while the manufacturing sector is relatively small and closely associated with the primary sector; the opposite is true in Ontario.

Chart 11 shows the average seasonal amplitude of total unemployment in Canada and the five regions for both the late fifties and the late sixties. In each case the variations about the yearly mean of one hundred appear to have been reduced during the latter period. Nevertheless, the seasonal variations still prevail. Therefore, the regional distribution of the seasonally unemployed will be examined more closely.

CHART 10

THE UNEMPLOYED AS A PERCENTAGE OF THE LABOUR FORCE
TOTAL, BOTH SEXES, CANADA AND REGIONS
AVERAGE FOR EACH MONTH, 1965-1969

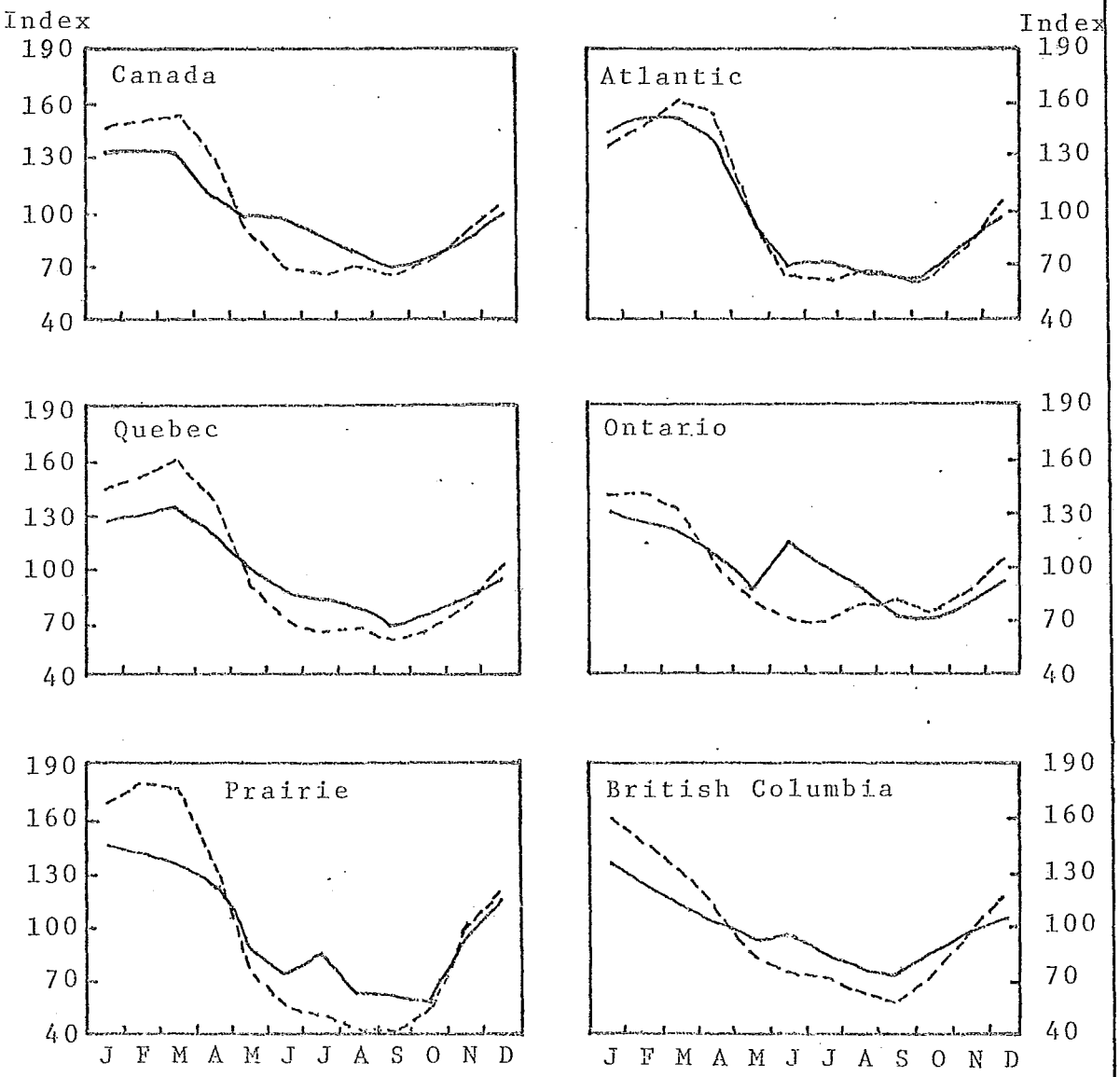


Source: D.B.S., Labour Force Survey

CHART 11

SEASONAL INDICES OF PERSONS UNEMPLOYED
TOTAL, BOTH SEXES, CANADA AND REGIONS
AVERAGE FOR EACH MONTH, 1955-1959 AND 1965-1969

1955-1959 - - - - -
1965-1969 ———



Source: D.B.S., Labour Force Survey

VI

CHARACTERISTICS OF THE SEASONALLY UNEMPLOYED - PART I

1. Regional Distribution of the Seasonally Unemployed

Canada's seasonal unemployment problem is due mainly to its northern climate, and each region is affected to the extent that the industries prevailing in that region are affected by the weather. Thus, a region in which a major part of the labour force is employed in the primary industries, construction, and transportation will have considerably more seasonal unemployment than one in which the labour force is primarily engaged in varied manufacturing and service enterprises.

The former "industry mix" is most predominant in the Atlantic, Quebec, and Prairie Regions; thus, it is not surprising to find that these are the three regions with the largest seasonal unemployment problem. Ontario, with its varied manufacturing base, is least affected by the seasonal influences. Although British Columbia is heavily dependent upon the primary industries, the milder climate on the west coast tends to reduce the seasonal effect.

Table 1 shows the summer-to-winter increase in unemployment in Canada and the five regions for the late fifties and the late sixties. Note that the average summer-to-winter increase in unemployment has decreased considerably when the 1965 to 1970 period is compared with the 1955 to 1960 estimates.

TABLE 1

SUMMER-TO-WINTER INCREASE IN UNEMPLOYMENT
CANADA AND REGIONS
FIVE-YEAR AVERAGES, 1955-1960 AND 1965-1970

	Summer-to-Winter Increase - %	
	1955-1960	1965-1970
Atlantic	138.7	116.7
Quebec	158.3	63.7
Ontario	92.3	44.2
Prairies	307.1	104.2
British Columbia	136.8	58.1
Canada	142.3	67.0

Source: Dominion Bureau of Statistics, Labour Force Survey.

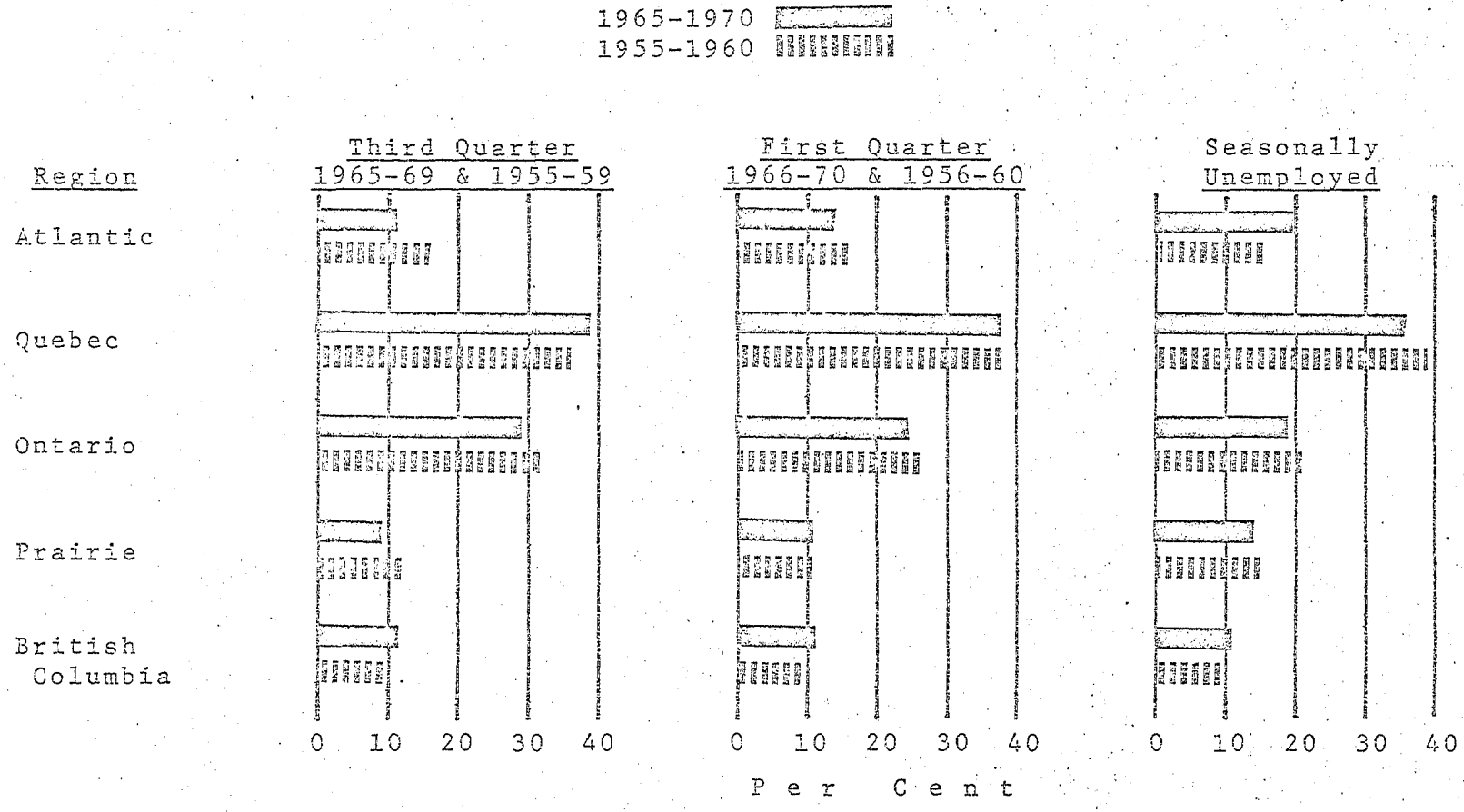
In the earlier period, the Prairie Region exhibited the largest summer-to-winter increase, with Quebec and the Atlantic Region placing second and third, respectively. During the last five years, however, the Atlantic Region has incurred the highest average summer-to-winter increase, with the Prairie and Quebec Regions in second and third place. The ranking of British Columbia and Ontario as fourth and fifth highest remains unchanged.

Chart 12 shows the percentage distribution of unemployed persons for the five regions for 1955 to 1960 and for 1965 to 1970, while Chart 13 shows the percentage distribution of employed persons by region for the same two periods of time. The "seasonally disemployed" estimate is the difference between the number of persons who are employed in the third quarter of one year and the first quarter of the next year. Not all of the seasonally disemployed become seasonally unemployed, however, for some may instead choose to leave the labour force.

A comparison of Charts 12 and 13 shows that the Atlantic and Quebec Regions contribute a considerably larger percentage of the seasonally unemployed than of the winter employed. Quebec contributed nearly 40 per cent of the seasonally unemployed during both five-year periods, with the Atlantic and Ontario Regions coming second and a close third in 1965 to 1970. Note, however, that although Ontario and the Atlantic Regions each contribute approximately 20 per

CHART 12

PERCENTAGE DISTRIBUTION OF UNEMPLOYED PERSONS BY REGION
TOTAL, BOTH SEXES, FIVE-YEAR AVERAGES, 1955-1960 AND 1965-1970

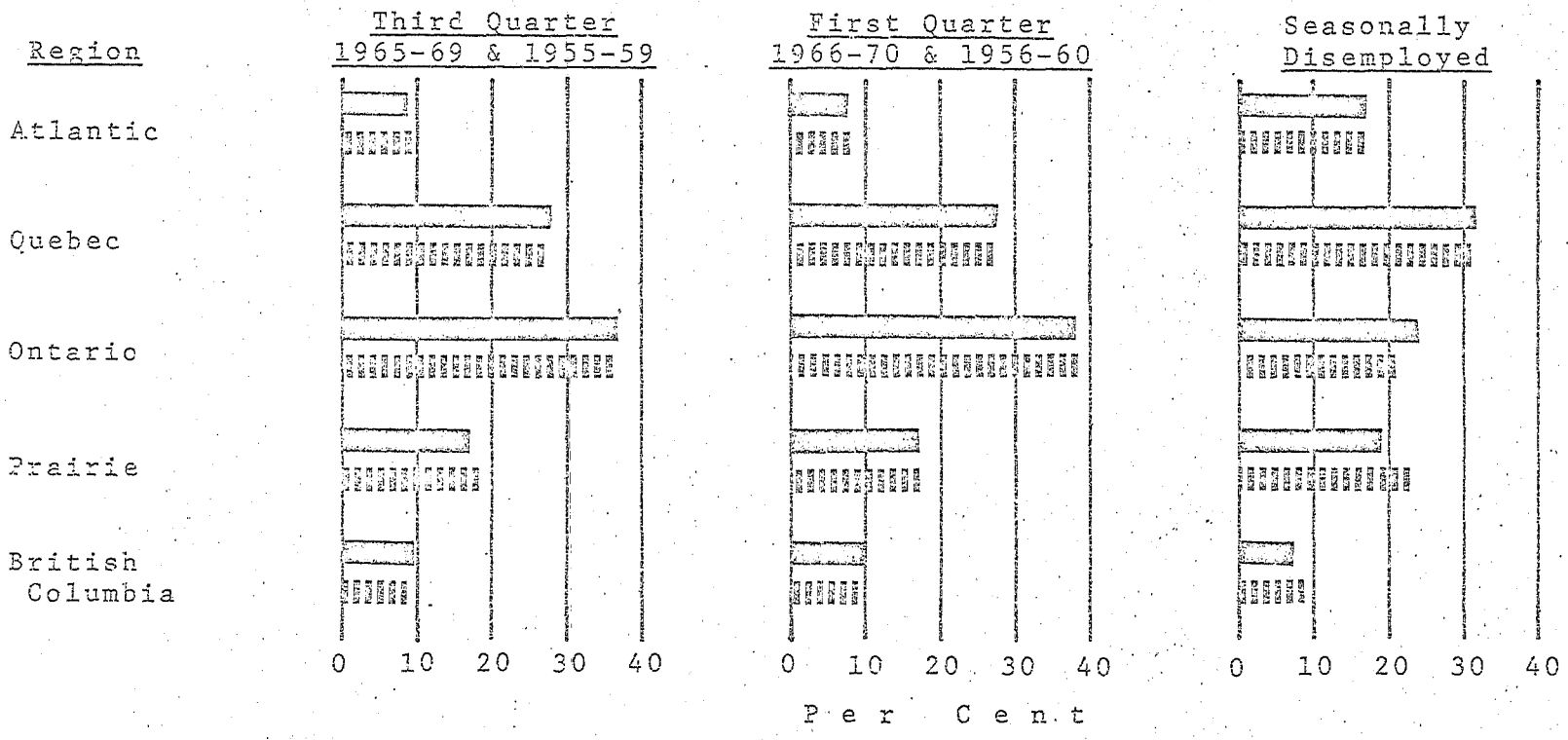


Source: D.B.S., Labour Force Survey

CHART 13

PERCENTAGE DISTRIBUTION OF EMPLOYED PERSONS BY REGION
TOTAL, BOTH SEXES, FIVE-YEAR AVERAGES, 1955-1960 AND 1965-1970

1965-1970
1955-1960



Source: D.B.S., Labour Force Survey

cent of the seasonally unemployed, Ontario contributes over 35 per cent of the employed in winter while the Atlantic Region accounts for only 8 per cent of the winter employed. In addition, it may be noted that although the Atlantic and Quebec Regions contain about 36 per cent of Canada's labour force, they account for nearly 60 per cent of the percentage distribution of the seasonally unemployed, while the other three regions, which contain more than 60 per cent of Canada's labour force, contribute 40 per cent of the workers who are laid off due to seasonal influences and who choose to remain in the labour force.

It has been suggested that some of the following reasons may account for this disparity between the Atlantic and Ontario Regions.[1] The larger seasonal variations in employment in the Atlantic Region undoubtedly contribute to some of the unemployment variations; however, other factors which influence the labour market behaviour of those who are laid off must also be considered.

First, the length of the layoff period is considerably longer in the Atlantic than in Ontario, due mainly to the shorter growing season in the Maritimes. Farm income is much lower in the Atlantic Region than in Ontario, with the per capita income in the Atlantic being only a little more

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[1] The Labour Gazette, 1960, p. 454.

than half that in Ontario.[2] In addition, if the winter lay-off period is not too long, those who are laid off may leave the labour market if they consider their earnings during the remainder of the year to be sufficiently high to warrant this "holiday". Table 2 lists the average weekly wages and salaries, by industry group, for the Atlantic and Ontario Regions. Note that the average weekly wages in Ontario are considerably higher than in the Atlantic Region for all industries. Note also that the average weekly earnings in the so-called seasonal industries are higher than in the non-seasonal industries.

Secondly, the Ontario winter labour market does not appear to be as depressed as in the Atlantic. In fact, Ontario's winter unemployment rate is less than half that prevailing in the Maritimes, indicating that perhaps workers in Ontario who are laid off due to seasonal influences affecting the demand for their services may find other jobs more readily than their counterparts on the East Coast.

Finally, the income received by other members of the laid-off workers' families, not only during the unemployment period but also for the entire year, may affect the labour market behaviour of the seasonally unemployed. Regional differences not only prevail in the average income per family,

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[2]The average incomes for the Atlantic and Ontario Regions for 1965 are noted in Appendix C.

TABLE 2

AVERAGE WEEKLY WAGES AND SALARIES, BY INDUSTRY, 1957 AND 1968

	Atlantic		Ontario	
	1957	1968	1957	1968
Forestry	58.41	76.20	80.80	124.97
Mining, including Milling	67.58	117.88	84.99	138.67
Manufacturing	60.48	90.30	73.79	119.96
Construction	60.31	103.49	83.06	142.42
Transportation, Communication, and Other Utilities	58.55	102.98	71.72	127.05
Trade	44.27	73.00	57.64	87.82
Finance, Insurance, and Real Estate	56.41	91.90	63.17	109.36
Service	35.71	60.89	58.58	82.63
Industrial Composite	57.16	90.55	70.63	113.52

Source: Dominion Bureau of Statistics, Review of Employment and Average Weekly Wages and Salaries, 1957-67, pp. 38, 43-45; 1966-68, pp. 78-80, 88-94.

but also in the labour force participation rates of the distaff members of the family. In 1969, the labour force participation rate for women residing in the Atlantic Region was 28 per cent (an increase from the late fifties' rate of 20 per cent), while 37 per cent of Ontario's female population, 14 years of age and over (an increase from approximately 30 per cent in the late fifties) were in the labour force.

2. Distribution of the Seasonally Unemployed by Sex and Age Group

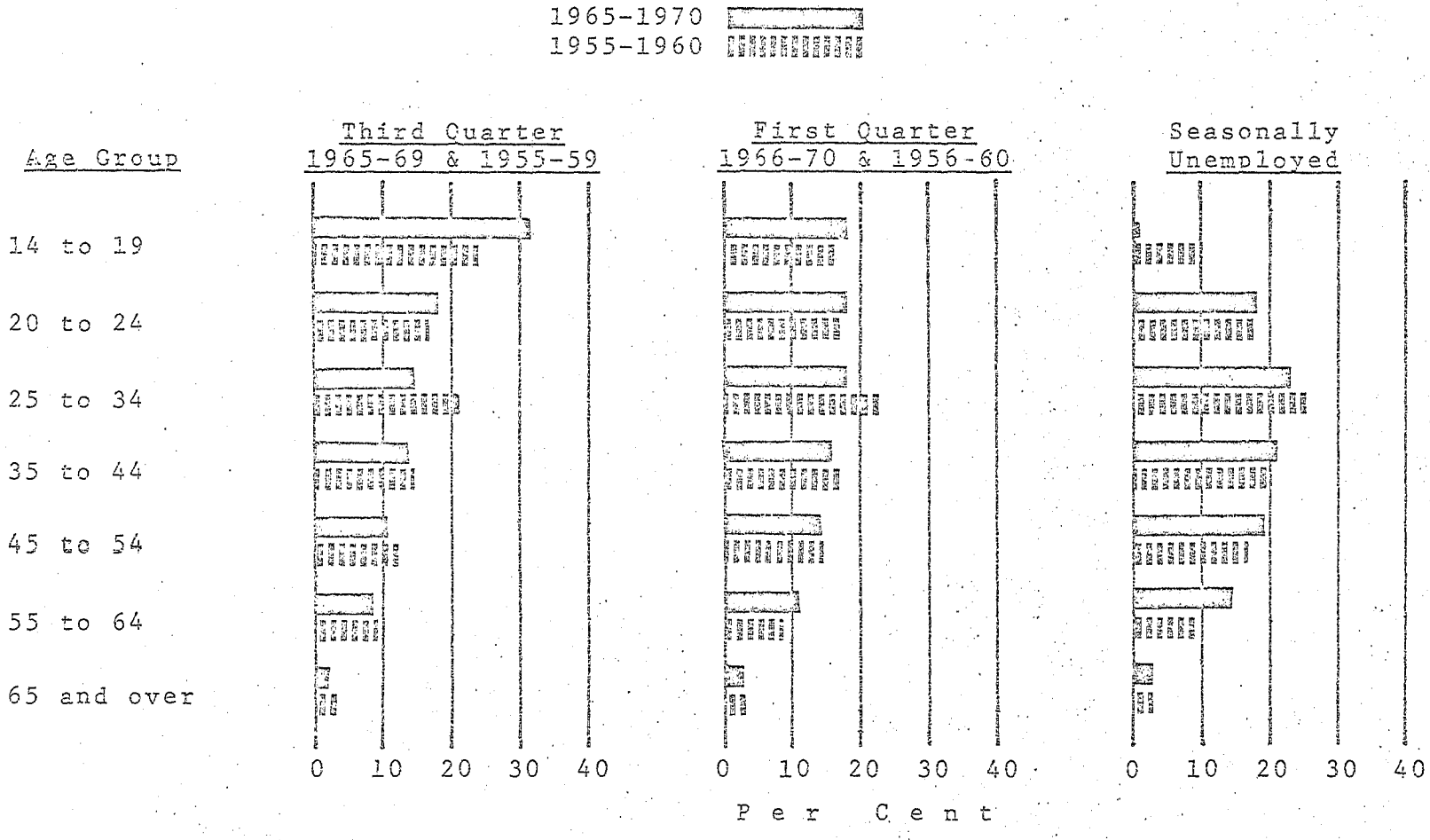
Who are the seasonally unemployed? Are they male or female, young or old? A comparison of Charts 14 and 15 shows that the seasonally unemployed are essentially males rather than females, since the exclusion of women from Chart 15 does not change the relationship among the age groups to any significant degree. Note, however, that the exclusion of young women slightly reduces the ratio of the 14 to 19 age group to the other age groups for the first and third quarters. This is due to the high proportion of young women among the female unemployed.

This absence of pronounced seasonal fluctuations in female unemployment is not surprising since, when the labour force and employment fluctuations for both sexes are considered, it can be seen (Chart 16) that the female labour force and employment levels do not exhibit the obvious peaks and troughs observed in the case of male employment and, to a lesser degree, labour force estimates. A major reason for this difference is that the majority of women are employed in the service, trade, and finance industries, which are subject to very few seasonal fluctuations. On the other hand, male employment tends to be concentrated in the goods-producing and transportation industries, many of which are highly seasonal. In addition, it was noted earlier that men employed in the nonagricultural sector remain in the labour force when laid off; women, on the other hand, tend

CHART 14

PERCENTAGE DISTRIBUTION OF UNEMPLOYED PERSONS BY AGE GROUP

TOTAL, BOTH SEXES, CANADA, FIVE-YEAR AVERAGES, 1955-1960 AND 1965-1970

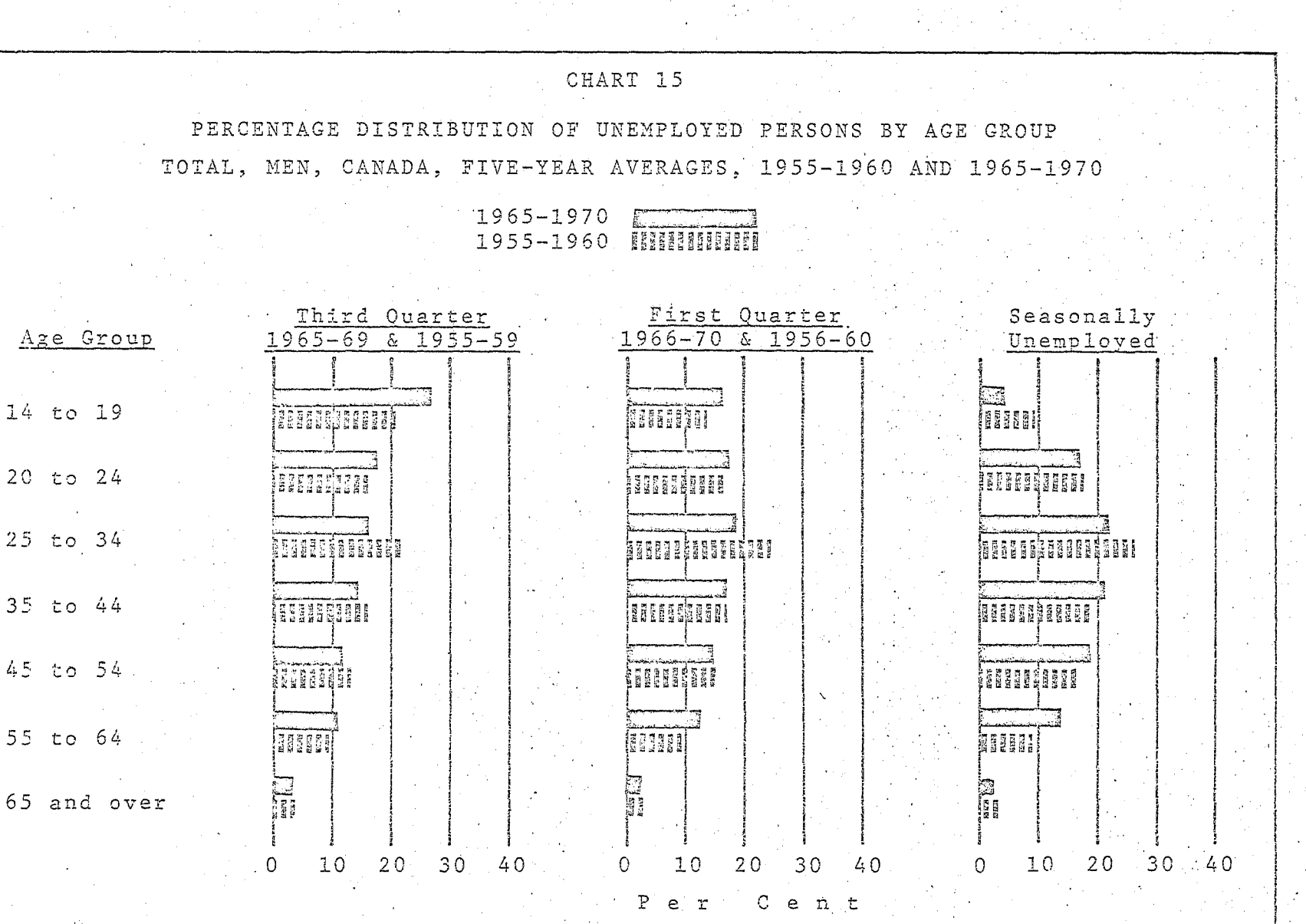


Source: D.B.S., Labour Force Survey

CHART 15

PERCENTAGE DISTRIBUTION OF UNEMPLOYED PERSONS BY AGE GROUP

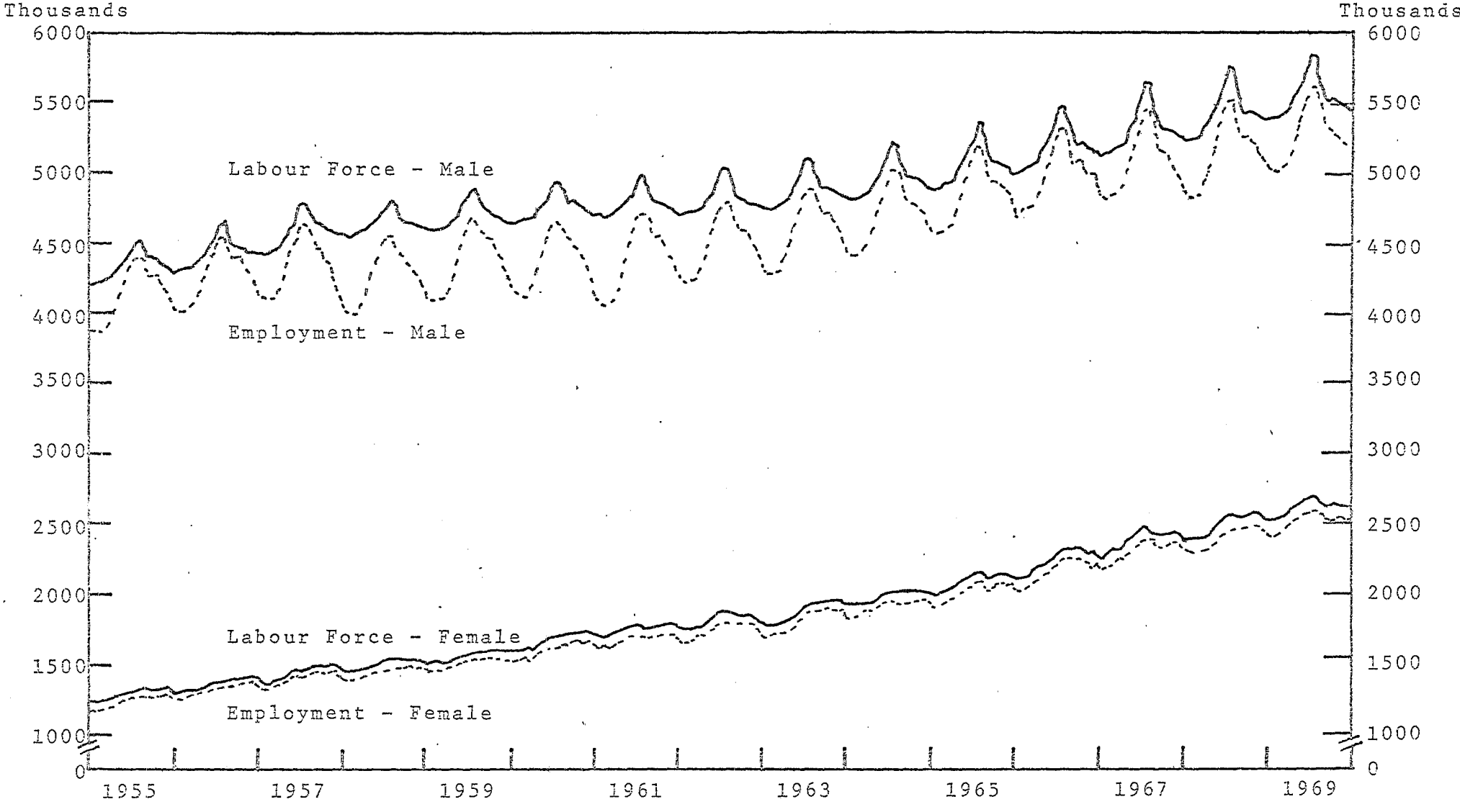
TOTAL, MEN, CANADA, FIVE-YEAR AVERAGES, 1955-1960 AND 1965-1970



Source: D.B.S., Labour Force Survey

CHART 16

LABOUR FORCE AND PERSONS EMPLOYED - TOTAL
MALE AND FEMALE, CANADA, JANUARY 1955 TO DECEMBER 1969



Source: D.B.S., Labour Force Survey

to leave the labour force between jobs.[3] Hence, the following comments regarding age group distribution refer only to men.

The winter unemployed are generally somewhat older than the summer unemployed (Chart 15). This difference, however, is mainly due to the large influx of students into the labour force for the summer months, in addition to those students who have completed their studies and are entering the labour force on a more permanent basis. It should be noted, however, that when percentage distributions are considered, the 14 to 19 and 20 to 24 age groups account for a larger percentage of the winter and summer unemployed than of the male labour force. All other age groups contribute a smaller percentage of the winter and summer unemployed than the magnitude of their labour force contribution. For example, in the late sixties, the 14 to 19 age group accounted for an estimated average of 9 per cent of the male labour force, while contributing an average of 16 per cent of the winter unemployed, 27 per cent of the summer unemployed, and 4 per cent of the seasonally unemployed. Contrast this to the 25 to 34 age group which comprised 22 per cent of the male labour force and contributed 19 per cent of the winter unemployed, 16 per cent of the summer unemployed, and 23 per cent of the seasonally unemployed.

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[3] Proceedings, p. 1075.

Although the percentage distribution of the seasonally unemployed by age group has remained relatively unchanged as far as the ranking of each age group is concerned, the average summer-to-winter increase in unemployment is smaller in the late sixties, when compared with the late fifties, for every age group, as shown in Table 3. Consider both five-year averages. In both periods, the 45 to 54 age group experienced the largest summer-to-winter increase, with slight changes in the ranking of the other seasonally affected groups. For example, the 25 to 34 group dropped from second highest to third highest; the 55 to 64 age group increased from fifth highest to fourth highest; and the 20 to 24 group fell from fourth highest to fifth highest in 1955 to 1960 and 1965 to 1970, respectively.

Chart 17 shows the percentage distribution of employed men by age group. A comparison of Charts 15 and 17 shows that only the 20 to 24 age group contributes significantly more, in percentage terms, to the seasonally unemployed than to the winter employed. The 14 to 19 age group by far comprises the largest percentage of those who become seasonally disemployed, which undoubtedly is a reflection of the students returning to school in September.

Recall that the percentage distribution of the seasonally unemployed was calculated by taking the net difference between the number of persons unemployed in the third quarter of a given year and the number of persons

TABLE 3

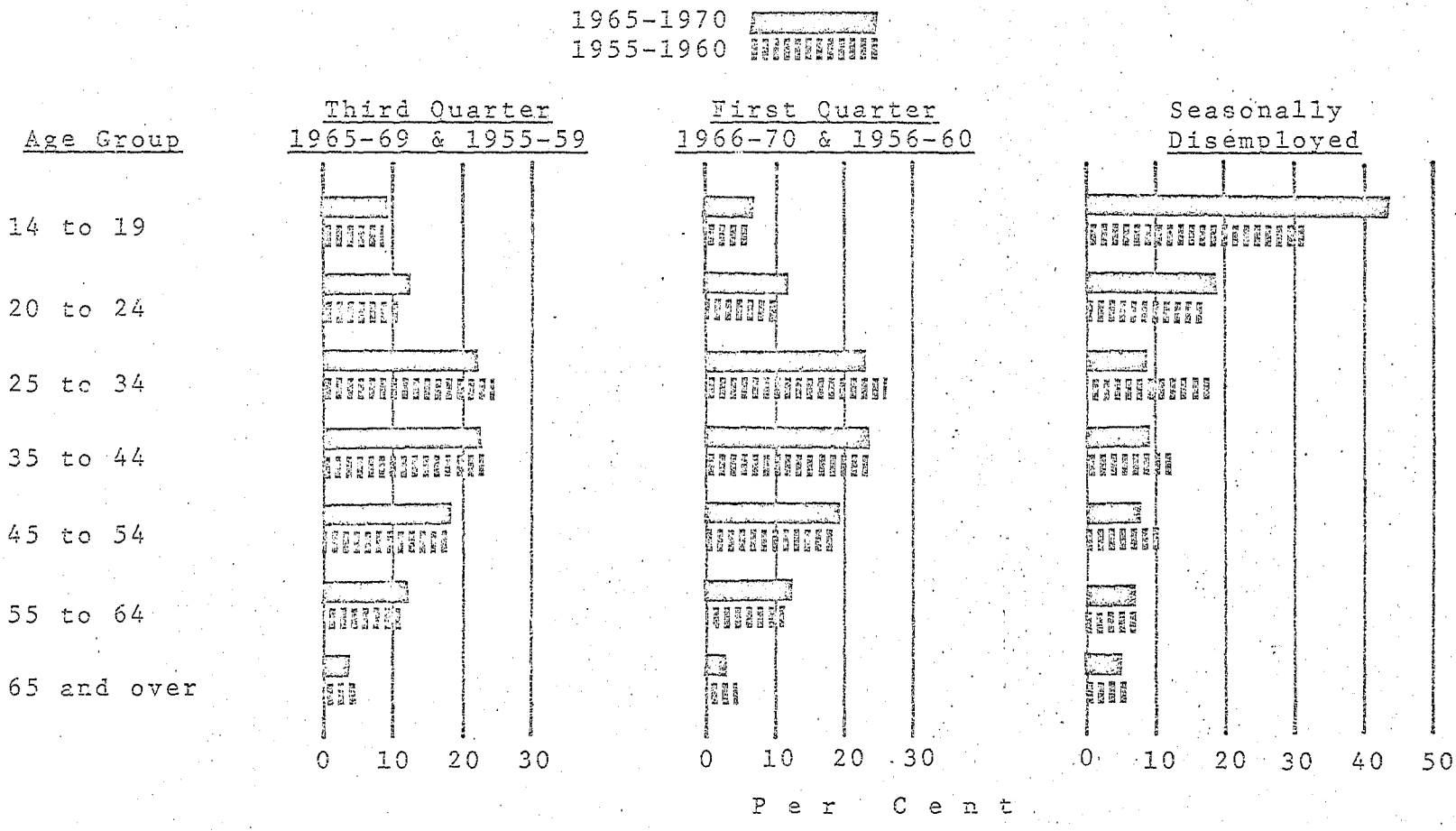
SUMMER-TO-WINTER INCREASE IN UNEMPLOYMENT
CANADA, MEN, BY AGE GROUP
FIVE-YEAR AVERAGES, 1955-1960 AND 1965-1970

	Summer-to-Winter Increase - %	
Age Group	1955-1960	1965-1970
14 to 19	76.5	13.7
20 to 24	176.9	82.4
25 to 34	202.9	126.7
35 to 44	196.2	133.3
45 to 54	204.5	145.5
55 to 64	156.3	114.3
65 and over	116.7	66.7
All ages	164.2	88.5

Source: Dominion Bureau of Statistics, Labour Force Survey.

CHART 17

PERCENTAGE DISTRIBUTION OF EMPLOYED PERSONS BY AGE GROUP
TOTAL, MEN, CANADA, FIVE-YEAR AVERAGES, 1955-1960 AND 1965-1970



Source: D.B.S., Labour Force Survey

unemployed in the first quarter of the following year. Recall also that the definition of seasonal disemployment is the net difference between the number of persons employed during the third quarter of a given year and the first quarter of the following year. In addition, it was noted earlier that all those persons who became seasonally disemployed did not necessarily become seasonally unemployed because many chose instead to leave the labour force for one reason or another. Table 3 shows that the summer-to-winter increase in unemployment has decreased for every age group.

In pure statistical terms, the estimated number of seasonally unemployed men in Canada decreased from an average of 271,000 in the late fifties to an average of 169,000 in the late sixties. During this time, however, the estimated average number of seasonally disemployed men also decreased - from 442,000 to 436,000. When the estimated number of seasonally unemployed men is subtracted from the estimated number who were seasonally disemployed, which will yield an estimate of the number of men who left the labour force, the total increases from a net average of 171,000 in the late fifties to a net average of 267,000 in the late sixties. The question, therefore, arises as to whether the apparent decrease in the estimated number of men seasonally unemployed and/or the observed decline in the summer-to-winter increase in unemployment is due to the fact that more men left the labour force when they became seasonally disemployed or whether it

is due to other factors as yet not considered. Since age is one of the most important determinants of labour force participation, the question just posed will be examined in this context.

The three age groups which together comprise more than 60 per cent of the seasonally unemployed are 25 to 34, 35 to 44, and 45 to 54. In the period from 1955 to 1960, altogether an estimated net annual average of 9,000 of the men in these three age groups who became seasonally disemployed left the labour force. In the period from 1965 to 1970, the estimated net annual average was 5,000 men. Thus, it appears that the decreased summer-to-winter increase in unemployment (Table 3) observed for these three groups was not due to an increase in the estimated net number of men who chose to leave the labour force.

The 20 to 24 age group accounts for slightly more than 15 per cent of the seasonally unemployed. In this case, although the estimated summer-to-winter increase in unemployment decreased from an average of 176.9 per cent to 82.4 per cent, the estimated annual average number of men who left the labour force increased from 29,000 in the late fifties to 52,000 in the late sixties. This increase in the number who left the labour force is most likely due to the increasing male enrolment at the university level. For example, in 1955 to 1956, 7.3 per cent of all men in the 18 to 24 age group were enrolled as full-time students at a

Canadian university; in 1965 to 1966, male enrolment had increased to 13.7 per cent, while projected enrolment for 1970 to 1971 is 17.5 per cent.[4] While the age group used in the Illing and Zsigmond study does not exactly correspond to the 20 to 24 age group used above, it does give a good indication of the magnitude of the increase in university enrolment during the past fifteen years. In addition, it should be noted that the average winter participation rate has dropped from 90 per cent in the late fifties to 83 per cent in the late sixties, where the participation rate is the labour force as a percentage of the population in each age group.

In the 55 to 64 age group, an estimated net annual average of 7,000 men left the labour force in both periods. In this case, the annual average participation rate has remained fairly constant at approximately 85 per cent.

The 14 to 19 age group accounts for the largest percentage of men who leave the labour force. For this group, the average annual estimate of the number who left the labour force increased from 110,000 in the late fifties to 186,000 in the late sixties. This, of course, reflects the increasing number of male students who return to school each fall. In 1955 to 1956, 53.5 per cent of all persons in the 14 to 17

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[4] Wolfgang M. Illing and Zoltan E. Zsigmond, Enrolment in Schools and Universities, 1951-52 to 1975-76, Economic Council of Canada, Staff Study No. 20 (Ottawa: Queen's Printer, 1967), p. 51.

age group were enrolled in secondary schools; in 1965 to 1966 the percentage had increased to 79.6; and the projected 1970 to 1971 percentage is 86.9.[5] While these enrolment figures include both males and females, exclusion of females would probably leave unchanged the percentages and not obscure the increasing enrolment which has been observed in the past fifteen years. Once again, the age group used in the Illing and Zsigmond study does not exactly correspond to the 14 to 19 classification used in this thesis; however, it is rather doubtful that this will significantly change the relative magnitude of the increases in enrolment which have taken place. It may also be noted that the winter participation rate for the 14 to 19 age group has fallen from an average of 42 per cent to an average of 33 per cent in the past one and one-half decades.

Chart 18 shows the percentage distribution of men who left the labour force, with the total of all age groups equalling 100 per cent, and the per cent of the seasonally disemployed men in each age group who left the labour force in the late fifties and late sixties.

The 65 and over age group, although accounting for less than 10 per cent of all men who left the labour force, ranks second when the per cent of seasonally disemployed persons who leave the labour force is considered. In this

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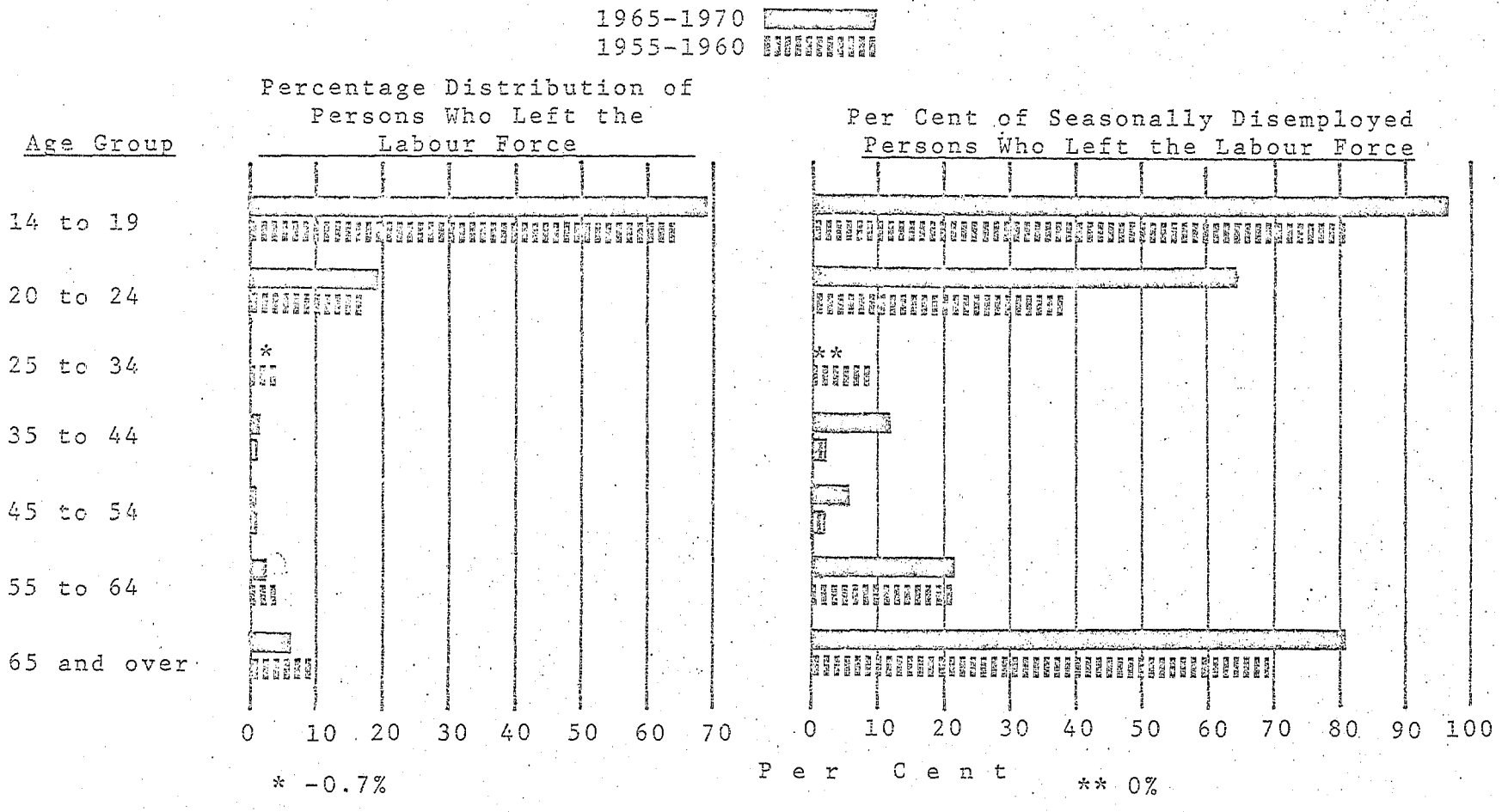
[5] Illing and Zsigmond, p. 28.

CHART 18

PERCENTAGE DISTRIBUTION OF PERSONS WHO LEFT THE LABOUR FORCE BETWEEN THE THIRD QUARTER AND THE FIRST QUARTER, AND PER CENT OF SEASONALLY DISEMPLOYED PERSONS WHO LEFT THE LABOUR FORCE, BY AGE GROUP, TOTAL, MEN, CANADA
FIVE-YEAR AVERAGES, 1955-1960 AND 1965-1970



Source: D.B.S., Labour Force Survey

case, the estimated annual average increase in the number of men who left the labour force in the late fifties and late sixties was 1,000, i.e., from 16,000 to 17,000. It is perhaps noteworthy that this is the only male age group in which the estimated average number of employed has decreased in the last fifteen years - from an estimated annual average of 189,000 in the late fifties to 161,000 in the late sixties. In addition, the labour force for this age group has also decreased - from an estimated annual average of 198,000 to 169,000. This decline in the labour force may be in part due to the increasing incidence of pension plans[6] and the increasing reluctance on the part of employers to hire older workers. In addition, many older workers prefer to work part-time, dropping out of the labour force when their services are no longer required and re-entering the labour market when job opportunities become more plentiful. The average winter participation rate for men, 65 and over, has

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[6] Officer and Andersen found that the income effect for males, 65 and over was highly significant and resulted in a strong downward trend in labour force participation. See Lawrence H. Officer and Peter R. Andersen, "Labour-Force Participation in Canada", Canadian Journal of Economics, II, No. 2 (May 1969), 278-287. Other recent Canadian studies and comments on labour force participation include Pierre-Paul Proulx, "La variabilité cyclique des taux de participation à la main-d'oeuvre au Canada", Canadian Journal of Economics, II, No. 2 (May 1969), 268-277; Lawrence H. Officer and Peter R. Andersen, "The Cyclical Variability of Labour-Force Participation Rates in Canada: Comment", Canadian Journal of Economics, III, No. 1 (February 1970), 145-146; and Robert Swidinsky, "A Note on Labour-Force Participation and Unemployment", Canadian Journal of Economics, III, No. 1 (February 1970), 146-151.

dropped from 31 per cent in the late fifties to 24 per cent in the late sixties.

In summary, nearly 80 per cent of the increase in the estimated net average number of men who left the labour force occurred in the 14 to 19 age group. Since this age group accounts for less than 5 per cent of the seasonally unemployed, it appears that the observed decrease in the incidence of seasonal unemployment is not due to an increase in the number of men who leave the labour force when they are laid off.

VII

CHARACTERISTICS OF THE SEASONALLY UNEMPLOYED - PART II

1. Distribution of the Seasonally Unemployed by Industry Group

Although nearly all industries contribute to the summer-to-winter increase in unemployment, there is a distinct difference in the magnitude of the contribution of the various industry groups. Chart 19 shows the percentage distribution of the seasonally unemployed by broad industry groups, using the 1960 Standard Industrial Classification, with comparable estimates of the summer and winter unemployed. Once again, third quarter figures are used to indicate the summer low and first quarter figures for the winter high. This is necessitated by the nature of the original data. Unfortunately, the original data are presented according to large major groups, thus concealing differences which might occur among the subgroups. Nevertheless, the prominent contribution of the construction and primary industries to seasonal unemployment is brought out clearly.

Note that the unemployed have been classified according to the last industry with which they were associated before becoming unemployed. In some cases, persons may seek employment in an industry other than the one from which they were laid off. This inter-industry movement cannot be accurately captured using present data collection methods.

Use of the 1960 Standard Industrial Classification does not facilitate the use of the late fifties as a period with which the late sixties may be compared; therefore, two four-year periods, 1961 to 1965 and 1966 to 1970, are used to determine whether or not there has been a discernible change in the percentage distribution of the unemployed by broad industry groups during the sixties.

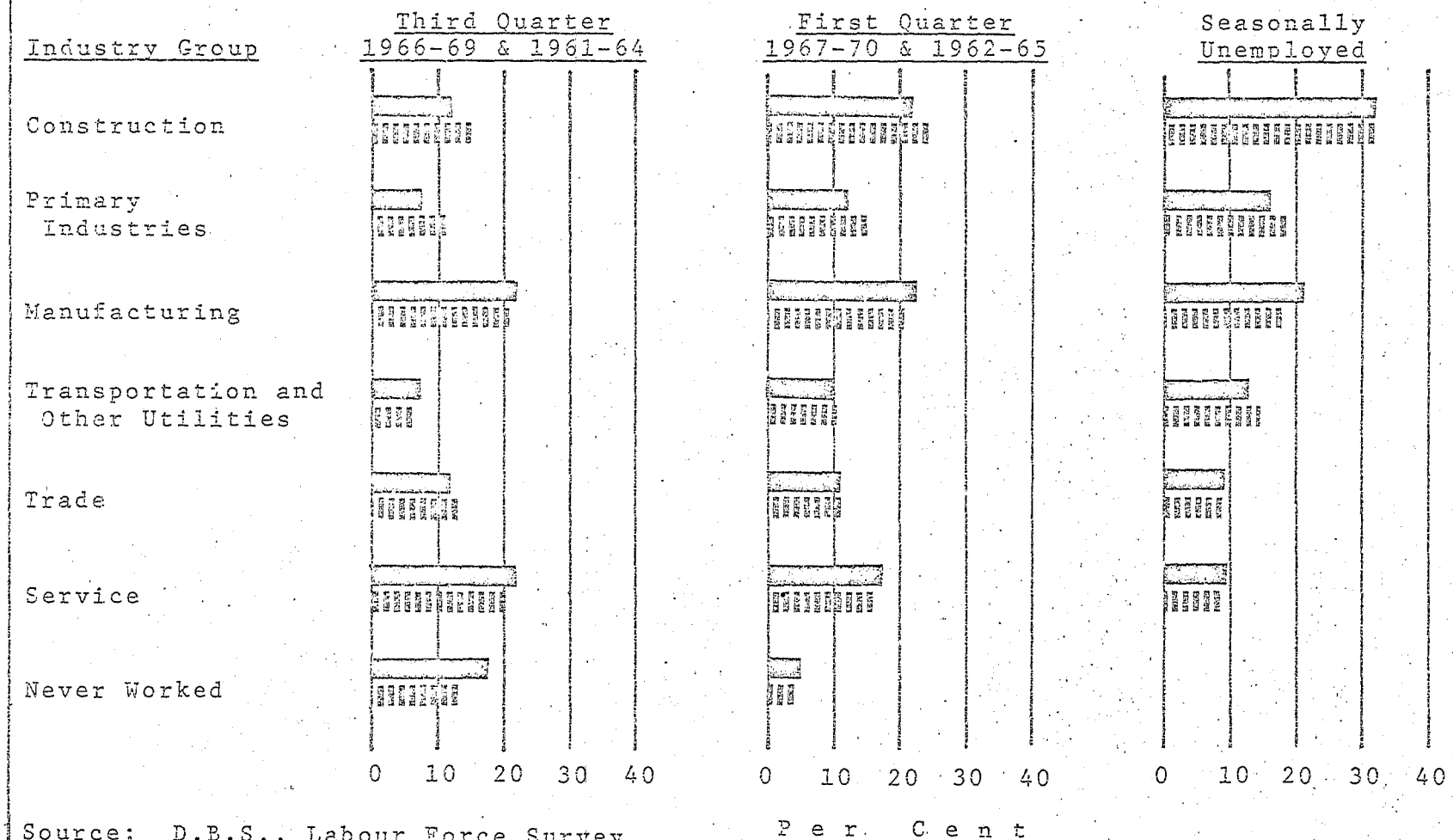
Chart 19 illustrates that the percentage distribution of the summer, winter, and seasonally unemployed has remained fairly constant during the past nine years. The construction industry accounts for an estimated average of 32 per cent of the summer-to-winter increase in unemployment, although it comprises only an estimated 22 per cent of the winter unemployed and 13 per cent of the summer unemployed during 1966 to 1970. The primary industries, and transportation and other utilities also account for a larger percentage of the seasonally unemployed than of the summer and winter unemployed. The opposite holds true for the other industry groups.

Chart 20 portrays the percentage distribution of employed persons by industry group for 1961 to 1965 and for 1966 to 1970. The difference in the contribution of the industry groups to seasonal unemployment relative to the size of the groups may be seen by comparing Charts 19 and 20. Construction, the primary industries, and transportation and other utilities contribute more to seasonal unemployment than to employment during the winter. This is particularly true

CHART 19

PERCENTAGE DISTRIBUTION OF UNEMPLOYED PERSONS BY INDUSTRY GROUP
TOTAL, BOTH SEXES, CANADA, FOUR-YEAR AVERAGES, 1961-1965 AND 1966-1970

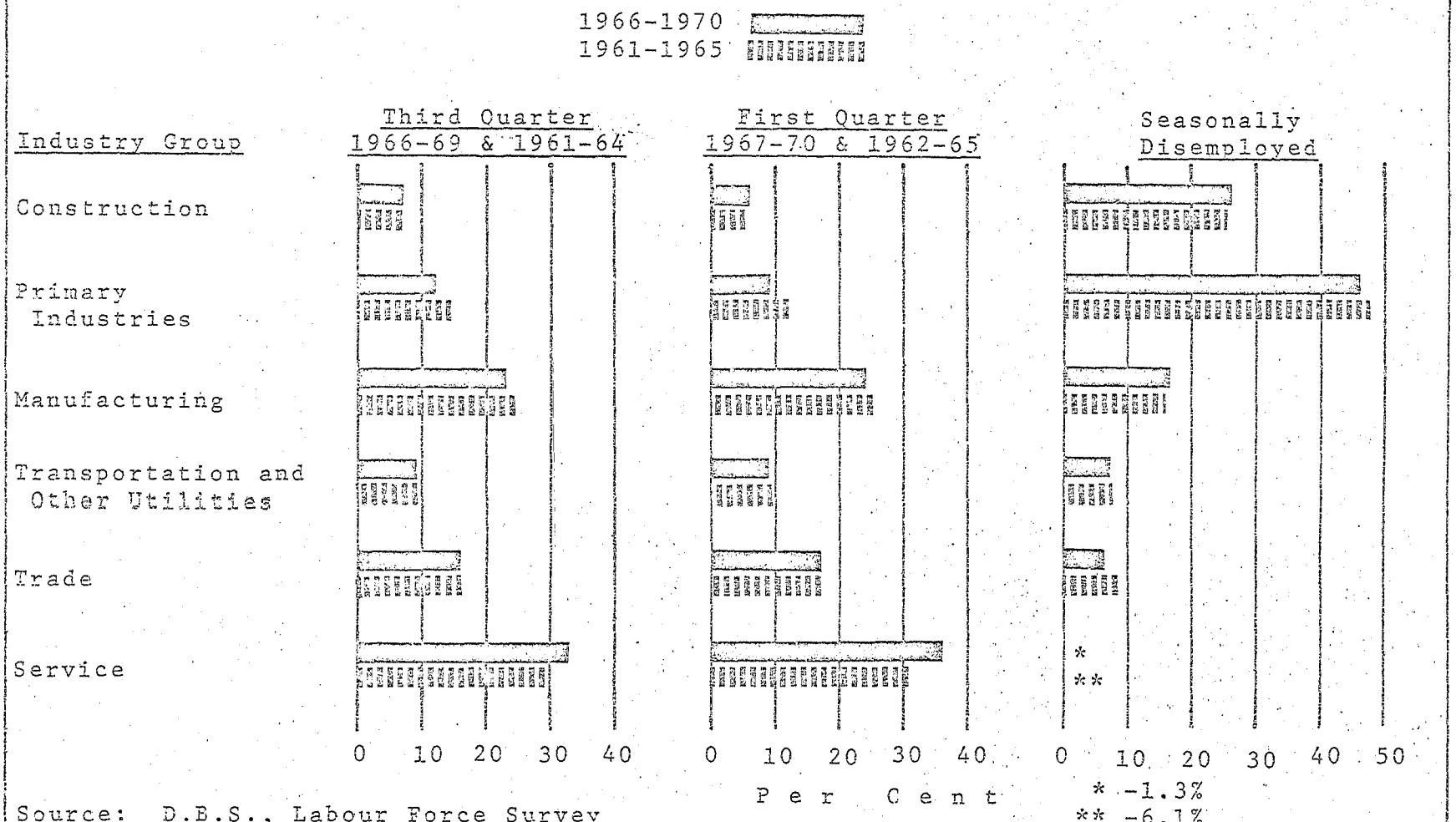
1966-1970 ▭ 1961-1965 ▭



Source: D.B.S., Labour Force Survey

CHART 20

PERCENTAGE DISTRIBUTION OF EMPLOYED PERSONS BY INDUSTRY GROUP
TOTAL, BOTH SEXES, CANADA, FOUR-YEAR AVERAGES, 1961-1965 AND 1966-1970



Source: D.B.S., Labour Force Survey

of construction which accounts for 32 per cent of the seasonally unemployed while contributing only 6 per cent of total employment in the winter. On the other hand, the trade and service groups contribute substantially more to employment than to seasonal unemployment.

Table 4 shows that the summer-to-winter increase in unemployment has remained fairly constant during the sixties, thus indicating that the downward trend in the incidence of seasonal unemployment which appears when the late sixties are compared with the late fifties is not as clearly evident when only the sixties are considered.

Table 5 shows the magnitude of employment changes which occurred in the various industry groups from 1957 to 1968. These estimates, obtained almost entirely from establishment surveys, include all nonagricultural employees. Over the eleven years from 1957 to 1968, the composite index rose by 22.6 per cent, with the largest increases recorded in the service; finance, insurance, and real estate; and trade industries. The largest decline in employment occurred in the forestry industry,[1] with smaller percentage decreases occurring in the construction and mining sectors. The employment indices, by industry group, for the eleven-year period are shown in Appendix D.

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[1] A continuing decline in manpower requirements in the Eastern Canada pulpwood logging industry has been forecast. See Campbell and Power, pp. 67-100.

TABLE 4

SUMMER-TO-WINTER INCREASE IN UNEMPLOYMENT
CANADA, BOTH SEXES, BY INDUSTRY GROUP
FOUR-YEAR AVERAGES, 1961-1965 AND 1966-1970

Industry Group	Summer-to-Winter Increase - % 1961-1965	1966-1970
Primary Industries	140.0	157.1
Manufacturing	68.3	73.3
Construction	172.1	191.4
Transportation and Other Utilities	183.3	136.8
Trade	55.6	57.6
Service	36.4	33.9
Total	95.0	92.1

Note: The total does not include those who have never worked.

Source: Dominion Bureau of Statistics, Labour Force Survey.

TABLE 5

PERCENTAGE CHANGE IN EMPLOYMENT INDICES
CANADA, BOTH SEXES, BY INDUSTRY GROUP
1957 TO 1968

Industry Group	1957 to 1968	1967 to 1968	1966 to 1967	1965 to 1966	1964 to 1965	1963 to 1964	1962 to 1963	1961 to 1962	1960 to 1961	1959 to 1960	1958 to 1959	1957 to 1958
Forestry	-29.8	-11.0	- 3.7	2.0	1.3	6.1	- 2.6	- 0.5	-12.3	5.6	5.3	-21.1
Mining, including Milling	- 2.6	0.6	2.0	1.8	6.4	0.9	- 1.5	- 0.6	- 3.4	- 4.2	5.1	- 8.8
Manufacturing	15.7	- 0.8	- 0.3	5.4	5.5	4.7	2.2	3.8	- 0.6	- 1.4	1.9	- 5.7
Construction	- 4.5	- 2.6	- 4.9	8.9	11.9	4.9	- 0.9	1.8	- 5.6	- 5.5	2.5	-12.5
Transportation, Communication, and Other Utilities	2.9	- 1.3	3.2	2.6	3.3	1.4	0.5	- 0.4	- 0.3	- 4.2	0.2	- 1.8
Trade	35.2	2.9	1.7	8.2	5.7	4.4	2.3	1.2	0.1	1.8	2.7	- 0.2
Finance, Insurance, and Real Estate	45.4	4.3	4.6	3.3	4.2	4.0	4.3	3.2	3.5	0.9	2.0	3.8
Service	71.9	3.1	10.3	10.5	9.8	8.1	4.3	1.7	3.3	1.7	2.8	0.9
Industrial Composite	22.7	0.1	1.6	5.6	5.6	3.6	2.2	2.2	- 0.7	- 1.5	1.8	0.4

Source: Dominion Bureau of Statistics, Review of Employment and Average Weekly Wages and Salaries, 1957-67, p. 5; 1966-68, p. 6.

Estimates of employment by industry and region are available from 1961. The nonagricultural "industry mix" of each region is presented in Table 6. Minor declines are evident in the so-called seasonal industries, while the most significant increases appear to be occurring in the service industry. This trend is apparent in all regions. Estimates of unemployment by industry and by region are not available.

Table 7 indicates how agricultural employment, as a percentage of total employment, has been declining during the sixties.

TABLE 6

PERCENTAGE DISTRIBUTION OF EMPLOYEES
REGIONS, BOTH SEXES, BY INDUSTRY GROUP
FOUR-YEAR AVERAGES, 1961-1965 AND 1966-1970

Industry Group	Atlantic Region		Quebec		Ontario		Prairie Region		British Columbia	
	1961 to 1965	1966 to 1970	1961 to 1965	1966 to 1970	1961 to 1965	1966 to 1970	1961 to 1965	1966 to 1970	1961 to 1965	1966 to 1970
Forestry	3.9	2.7	1.6	1.3	0.7	0.5	0.6	0.4	4.2	3.3
Mines, Quarries, and Oil Wells	3.8	3.3	1.9	1.6	1.8	1.3	3.8	3.8	1.8	1.7
Manufacturing	18.1	16.9	34.6	31.1	35.6	33.0	14.2	13.1	25.5	21.3
Construction	7.2	7.6	7.0	5.2	6.0	5.7	7.6	7.6	5.7	6.3
Transportation, Communication, and Other Utilities	16.8	14.0	11.7	10.6	10.0	8.5	17.2	13.9	14.7	13.1
Trade	17.5	16.8	15.4	14.8	16.1	15.6	20.0	19.3	17.8	17.2
Finance, Insurance, and Real Estate	2.7	3.0	4.6	4.7	5.0	4.9	4.5	4.3	4.4	4.6
Services[1]	21.5	26.8	20.8	26.0	19.9	24.4	25.9	30.5	22.5	27.4

Industry Group	Atlantic Region		Quebec		Ontario		Prairie Region		British Columbia	
	1961 to 1965	1966 to 1970	1961 to 1965	1966 to 1970	1961 to 1965	1966 to 1970	1961 to 1965	1966 to 1970	1961 to 1965	1966 to 1970
Public Administration and Defence[2]	8.5	8.9	2.5	4.7	5.1	6.1	6.0	7.1	3.4	5.2
Total[3]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Dominion Bureau of Statistics, Estimates of Employees by Province and Industry.

[1]Welfare and religious organizations excluded from 1961 to 1968 inclusive.

[2]Excludes municipal government employees for all provinces and provincial employees in British Columbia from 1961 to 1968 inclusive. Provincial employees in Quebec are excluded from 1961 to 1963 inclusive. Defence was added in 1968; however, all non-civilian employees are excluded from this category.

[3]The individual entries may not add to 100 per cent because of rounding error. This total is only for the industries specified and does not include the agricultural sector.

TABLE 7

AGRICULTURAL EMPLOYMENT AS A PERCENTAGE OF TOTAL EMPLOYMENT
REGIONS, BOTH SEXES
FOUR-YEAR AVERAGES, 1961-1965 AND 1966-1970

Region	% 1961-1965	% 1966-1970
Atlantic	7.8	4.5
Quebec	7.3	5.4
Ontario	6.9	5.0
Prairie	26.2	18.7
British Columbia	4.1	3.4

Source: Dominion Bureau of Statistics, Labour Force Survey.

2. Distribution of the Seasonally Unemployed by Occupation Group

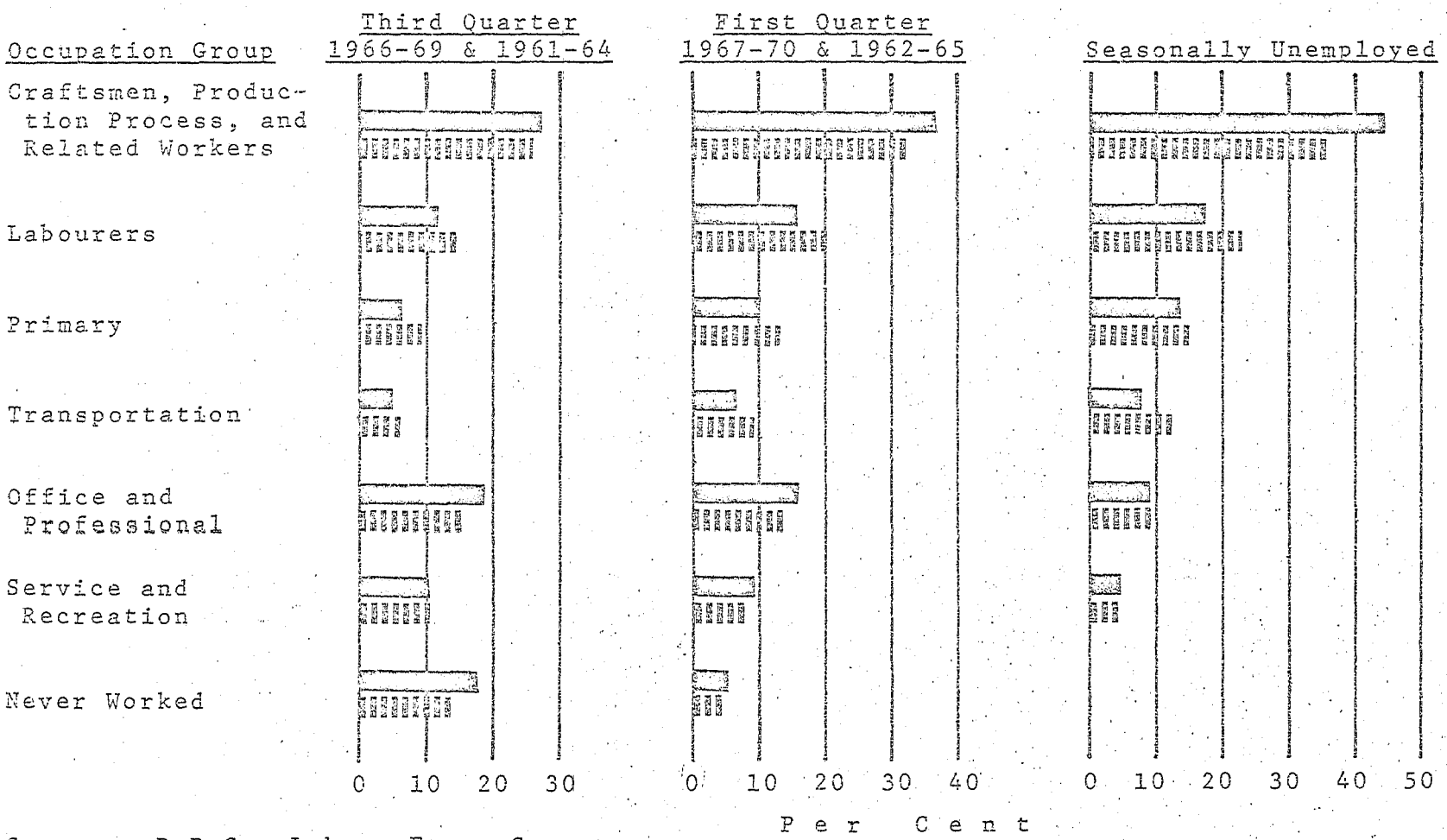
Chart 21 shows the percentage distribution of unemployed persons according to the occupation group with which they were associated just prior to their becoming unemployed. The original data are based on the 1961 Census Classification of Occupations. Once again, the nature of the original data necessitates using broad occupation groups; however, a general indication of the groups which contribute most of the increase in seasonal unemployment can still be determined.

The occupation group with the largest percentage distribution of seasonally unemployed workers is comprised of craftsmen, production process, and related workers. A comparison of Charts 21 and 22 will indicate that while the craftsmen, production process, and other related workers' group contributes 45 per cent of the seasonally unemployed, it accounts for only about one-quarter of the winter employed. Contrast this to the office and professional group which provides less than 10 per cent of the seasonally unemployed while comprising over 45 per cent of the employed workers during the winter months. The preceding figures are the 1965 to 1970 averages. Occupational groups which also contribute more to seasonal unemployment than to employment during the winter months include labourers, primary, and transportation. The opposite is true for the service and recreation group, in addition to the office and professional group. The percentage distribution of the various occupation groups, whether

CHART 21

PERCENTAGE DISTRIBUTION OF UNEMPLOYED PERSONS BY OCCUPATION GROUP
TOTAL, BOTH SEXES, CANADA, FOUR-YEAR AVERAGES, 1961-1965 AND 1966-1970

1966-1970 ▭ 1961-1965 ▨

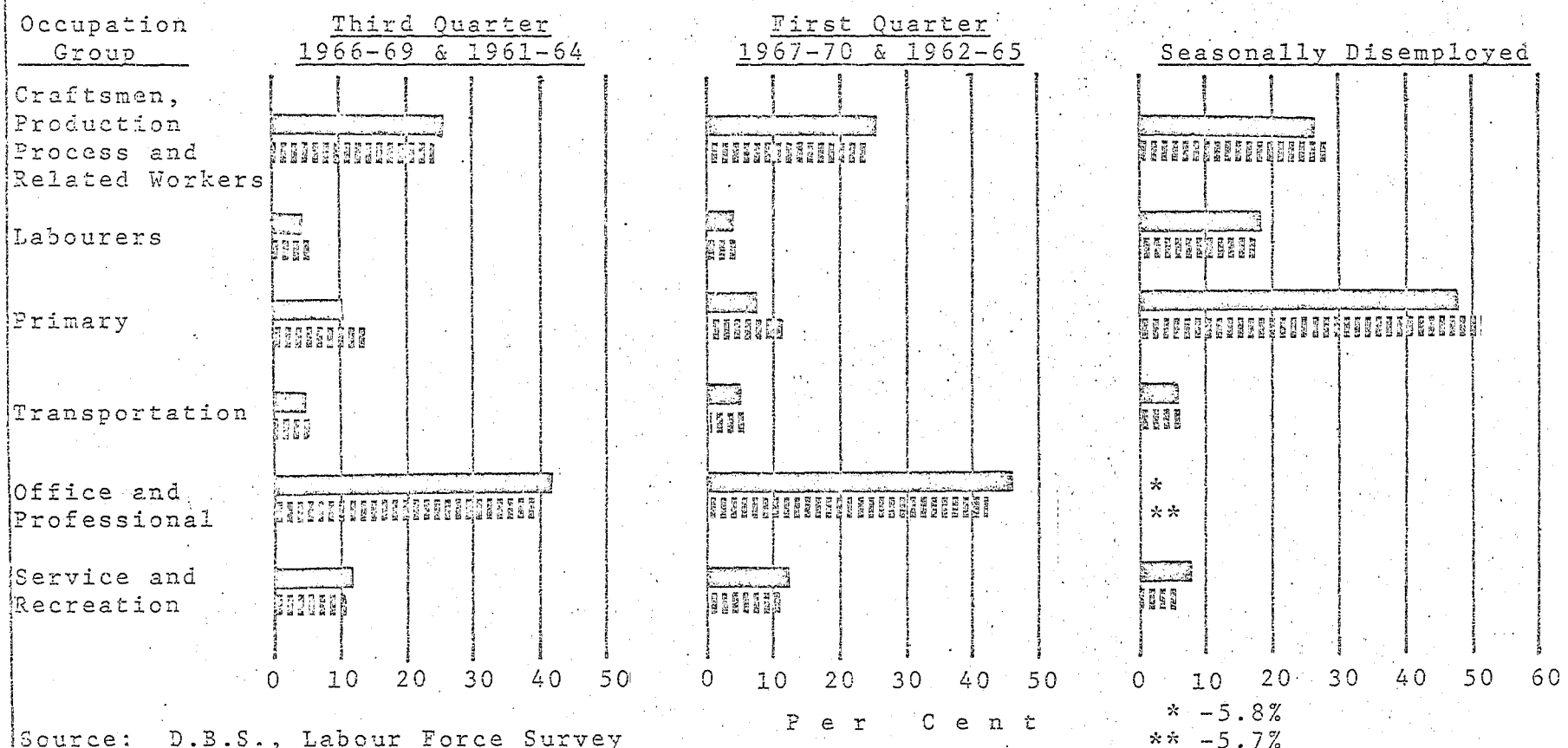


Source: D.B.S., Labour Force Survey

CHART 22

PERCENTAGE DISTRIBUTION OF EMPLOYED PERSONS BY OCCUPATION GROUP
TOTAL, BOTH SEXES, CANADA, FOUR-YEAR AVERAGES, 1961-1965 AND 1966-1970

1966-1970
1961-1965



Source: D.B.S., Labour Force Survey

employment or unemployment is being considered, has not appreciably changed during the two four-year periods.

As was observed in the case of the industry groups, the relative summer-to-winter increases in unemployment have remained fairly constant. These estimated average seasonal changes in unemployment are shown in Table 8.

TABLE 8

SUMMER-TO-WINTER INCREASE IN UNEMPLOYMENT
CANADA, BOTH SEXES, BY OCCUPATION GROUP
FOUR-YEAR AVERAGES, 1961-1965 AND 1966-1970

Occupation Group	Summer-to-Winter Increase - % 1961-1965	1966-1970
Office and Professional	47.7	37.0
Transportation	136.8	138.5
Service and Recreation	36.7	28.1
Primary	137.0	166.7
Craftsmen, Production Process, and Related Workers	103.8	123.7
Labourers	123.3	111.8
Total	95.0	92.1

Note: The total does not include those who have never worked.

Source: Dominion Bureau of Statistics, Labour Force Survey.

VIII

DURATION OF UNEMPLOYMENT

The number of months that the seasonally unemployed are seeking work is virtually impossible to determine. While some persons who are laid off for seasonal reasons look for work for several months, others may find employment almost immediately in other industries or in other firms within the same industry. Even though unemployment may be high during the winter, the labour market is not inactive. Some people retire, while others may leave their jobs due to injury, emigration, or death. These jobs, if not eliminated, must be filled; other vacancies may arise due to expansion, while other jobs become obsolete.[1]

Table 9 shows the percentage distribution of unemployed persons, excluding those on temporary layoff to 30 days, by the number of months spent looking for work in July and March. Considering first the 1955 to 1960 period, in July, 32 per cent of those seeking work had looked for work for more than three months; but in March, when unemployment reaches its peak, 40 per cent had looked for this length of time. On the other hand, 36 per cent of the July seekers had looked for work for less than one month, but only 18 per cent of the March seekers fell into this category.

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[1] The Labour Gazette, 1960, p. 591.

TABLE 9

PERCENTAGE DISTRIBUTION OF UNEMPLOYED IN MARCH AND JULY
CANADA, BOTH SEXES, BY NUMBER OF MONTHS LOOKING FOR WORK
FIVE-YEAR AVERAGES

Number of Months Looking for Work	Unemployed in March - %	Unemployed in July - %	March Minus July
	1956-1960	1955-1959	
Under 1	17.9	35.8	-17.9
1 to 3	41.7	32.1	9.6
4 to 6	31.2	14.4	16.8
7 and over	9.2	17.7	- 8.5
Total	100.0	100.0	-
	1966-1970	1965-1969	
Under 1	21.3	34.3	-13.0
1 to 3	41.4	39.3	2.1
4 to 6	25.6	11.4	14.2
7 and over	11.7	15.0	- 3.3
Total	100.0	100.0	-

Source: Dominion Bureau of Statistics, Labour Force Survey.

Consider now the 1965 to 1970 averages. The average number of persons unemployed in July increased from 187,000 in the late fifties to 280,000 in the late sixties. The number of months spent looking for work increased by percentage distribution for the 1 to 3 months' group and decreased for the other time groups. Unemployment in March decreased from an average of 465,000 in the late fifties to an average of 443,000 during the late sixties; and the number of months spent looking for work decreased slightly. For example, 37 per cent of the March seekers had looked for work for over three months while 21 per cent had looked for less than one month, compared to 40 and 18 per cent respectively for the late fifties.

Table 10 shows the July-to-March increase in the duration of unemployment, averaged for two five-year periods, 1955 to 1960 and 1965 to 1970, respectively. This increase is the difference between July and March in the number of persons looking for work in a given time group as a percentage of the number of persons seeking employment in that group in July. The smallest increases occur in the Under 1 month and in the 7 months and over time groups - in fact, the Under 1 month group shows an average decrease during 1965 to 1970. Unfortunately, it is impossible to determine how many of those who are seasonally unemployed are in these two time groups in March. The majority of the seasonally unemployed will have been seeking employment for more than one month, probably

TABLE 10

JULY-TO-MARCH INCREASE IN DURATION OF UNEMPLOYMENT
CANADA, BOTH SEXES
FIVE-YEAR AVERAGES, 1955-1960 AND 1965-1970

Number of Months Looking for Work	July-to-March Increase - %	
	1955-1960	1965-1970
Under 1	23.9	-10.4
1 to 3	223.3	51.8
4 to 6	437.0	221.9
7 and over	30.3	11.9
Total	148.7	43.9

Source: Dominion Bureau of Statistics, Labour Force Survey.

for three or four, in March. Note that while the July-to-March increase has declined for every time group in the late sixties, when compared with the late fifties, the relative ranking of each group has remained constant.

Although it is difficult to separate the seasonally unemployed from those who are unemployed because of other factors with regard to the duration of unemployment, it is the seasonal seeker who perhaps determines the pattern which the duration series takes. For example, the percentage of those seeking work for under one month is at its peak in June (undoubtedly due to the addition of students to the labour force), decreases over the next two months, increases again from September to November, and begins to decline once more until March when it starts its upward trend until June. Thus, it would appear that the seasonally unemployed have been seeking work for more than one month since the beginning of the year and that seasonal layoffs are declining as spring approaches.

The 1 to 3 months' group shows two major increases: one from December to February, perhaps reflecting the increase in the number of seasonally unemployed workers who are seeking employment; and the second between June and July, perhaps indicating that a substantial number of students have not yet secured employment.

The 4 to 6 months' group begins to increase in February, showing its largest increase from February to

March, and starts to decline only after April. The decline after April could be an indication that some of the seasonally unemployed workers have been recalled or have been able to secure other employment.

IX

REGRESSION ANALYSIS

In the foregoing chapters, it has been shown that the average seasonal increase in unemployment was smaller during the late sixties than during the late fifties. Since it is sometimes considered that seasonal patterns may vary with the phase of the unemployment cycle, the question which should be considered is whether this estimated decline is merely a reflection of the phase of the cycle during which the two periods chosen occur or whether other factors are involved. While four- or five-year averages were used in the preceding analysis in order to reduce the cyclical component, complete elimination of cyclical influences cannot be guaranteed. Therefore, regression analysis, using the method of ordinary least squares, was carried out in order to determine whether or not the general level of economic activity obtaining in the economy during the two periods selected was a significant determinant of the decreased seasonality which was observed. This chapter summarizes the results of the regression analysis.

An equation of the form

$$SU_t = a_0 + a_1 U_t + a_2 T + a_3 T^2$$

was fitted to data for the period from the third quarter of 1955 to the first quarter of 1970 for Canada, the five regions, the various male age groups, and total women. Since

the coefficient of T^2 was found to be insignificant in every case, the equation was modified to the following:

$$SU_t = a_0 + a_1 U_t + a_2 T$$

where $SU_t = (U1_t - U3_{t-1})/U3_{t-1}$

U1 = average number of persons unemployed during the first quarter

U3 = average number of persons unemployed during the third quarter

U = unemployment rate (further specified below)

T = time trend

The general level of economic activity was represented by the unemployment rate, which was calculated by averaging the third and first quarter seasonally unadjusted unemployment rates for each of the fifteen years. However, in order to ensure that the results of the analysis were not biased due to the use of this particular unemployment rate, two additional measures were employed. First, the unemployment rate was calculated by taking a ratio of the twelve-month moving average (centred on November) of the number unemployed to the twelve-month moving average (centred on November) of the number in the labour force. This was also seasonally unadjusted data. Second, an average of the third and first quarter seasonally adjusted[1] unemployment rates was used as

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[1]The 1970 first quarter unemployment rate was calculated using the final seasonal factors as forecast by the Dominion Bureau of Statistics for January, February, and March 1970.

an indicator of the cyclical influences in the economy. The results of the estimated equations are presented in Table 11. Equation (1) in each category utilizes the seasonally unadjusted unemployment rate, while equations (2) and (3), respectively, employ the twelve-month moving average and the seasonally adjusted unemployment rates.

The coefficient attached to the unemployment rate (regardless of the method used to calculate it) is not significant according to the standard two-tail t test at the 5 per cent level of significance, indicating that the apparent decrease in seasonality has occurred independently of the general level of economic activity, insofar as this level is measured by the average annual unemployment rate. Note, however, that the coefficient of T, which captures the trend over time in the summer-to-winter increase in unemployment, is significant for every category except men aged 55 to 64. In addition, the trend parameters are all negative, thus indicating a downward trend in the seasonal increase in unemployment.

Consider the first equation estimated for Canada:

$$SU_C = 1.220 - .0038U - .0858T$$

Assume that the average 1966 to 1967 unemployment rate, namely, 4.1 per cent, also prevailed during 1956 to 1957. The estimated summer-to-winter increase in unemployment during the latter period would have been

TABLE 11

REGRESSION EQUATIONS FOR ANALYSIS OF CHANGES IN SEASONAL UNEMPLOYMENT[1]

Dependent Variable	Constant Term	Coefficient of U	Coefficient of T	$\bar{S}$	$\bar{R}^2$	d
SU - Canada						
(1)	1.220	-0.0038 (.500)	-.0858 (3.798)	.3588	.4808	2.07
(2)	1.260	-4.8655 (.603)	-.0857 (3.879)	.3572	.4856	2.06
(3)	1.367	-0.0070 (.890)	-.0872 (4.017)	.3511	.5028	2.04
SU - Atlantic Region						
(1)	2.089	- 8.1107 (1.418)	-.0598 (2.232)	.4076	.1895	2.20
(2)	2.101	- 8.7436 (1.532)	-.0604 (2.292)	.4028	.2085	2.22
(3)	2.226	-10.1809 (1.873)	-.0622 (2.476)	.3874	.2678	2.14
SU - Quebec						
(1)	1.184	-1.9977 (.272)	-.0977 (3.844)	.4021	.4972	1.99
(2)	1.174	-1.9764 (.259)	-.0969 (3.921)	.4022	.4969	1.99
(3)	1.384	-5.0739 (.686)	-.0995 (4.081)	.3957	.5132	1.93

Dependent Variable	Constant Term	Coefficient of U	Coefficient of T	$\bar{S}$	$\bar{R}^2$	d
SU - Ontario						
(1)	0.536	3.1235 (.560)	-.0433 (2.986)	.2286	.4087	2.48
(2)	0.557	2.8095 (.469)	-.0442 (3.093)	.2295	.4041	2.48
(3)	0.582	2.1541 (.356)	-.0446 (3.097)	.2303	.3996	2.47
SU - Prairie Region						
(1)	2.714	-19.7685 (.764)	-.2451 (4.047)	1.0004	.5069	1.98
(2)	2.935	-29.0747 (.827)	-.2476 (4.076)	.9965	.5107	1.97
(3)	3.534	-48.0126 (1.482)	-.2542 (4.430)	.9419	.5628	1.94
SU - British Columbia						
(1)	2.161	-18.6171 (1.533)	-.1440 (2.887)	.8282	.3562	1.92
(2)	2.177	-19.6138 (1.510)	-.1401 (2.816)	.8302	.3531	1.89
(3)	2.301	-21.8163 (1.863)	-.1380 (2.894)	.7977	.4029	1.90

Dependent Variable	Constant Term	Coefficient of U	Coefficient of T	$\bar{S}$	$\bar{R}^2$	d
SU - Men, Total						
(1)	1.616	-0.0063 (.884)	-.0925 (3.647)	.4004	.4492	2.04
(2)	1.644	-0.7236 (.978)	-.0919 (3.709)	.3977	.4566	2.02
(3)	1.748	-9.0499 (1.271)	-.0935 (3.877)	.3879	.4830	2.00
SU - Men, 14-19						
(1)	0.455	-0.0005 (.182)	-.0623 (3.670)	.2790	.4560	1.61
(2)	0.506	-0.9471 (.329)	-.0621 (3.727)	.2781	.4593	1.60
(3)	0.562	-1.3907 (.474)	-.0625 (3.760)	.2768	.4645	1.62
SU - Men, 20-24						
(1)	1.844	-0.0060 (.974)	-.1298 (3.498)	.5657	.4286	2.07
(2)	1.843	-6.4978 (.987)	-.1270 (3.535)	.5651	.4297	2.07
(3)	2.022	-8.6508 (1.407)	-.1318 (3.801)	.5444	.4708	1.98
SU - Men, 25-34						
(1)	2.390	-0.0139 (1.544)	-.1231 (3.387)	.5436	.4035	2.19

Dependent Variable	Constant Term	Coefficient of U	Coefficient of T	$\bar{S}$	$\bar{R}^2$	d
SU - Men, 35-44						
(1)	1.852	-0.0050 (.586)	-.0866 (2.804)	.4786	.3042	2.38
SU - Men, 45-54						
(1)	2.332	-0.0135 (1.320)	-.0866 (2.584)	.5055	.2525	2.14
SU - Men, 55-64						
(1)	1.627	-0.0062 (.736)	-.0428 (1.720)	.4116	.0788	1.96
SU - Men, 65+						
(1)	1.341	-0.0057 (.478)	-.0782 (3.830)	.3415	.4811	2.17
SU - Men, 25-44						
(1)	2.752	- 0.0104 (1.254)	-.1051 (3.397)	.4678	.4065	2.29
(2)	2.261	-13.7492 (1.487)	-.1057 (3.562)	.4572	.4332	2.22
(3)	2.378	-16.2626 (1.903)	-.1081 (3.858)	.4361	.4844	2.20
SU - Men, 45+						
(1)	1.964	- 0.0104 (1.112)	-.0646 (2.740)	.3830	.2903	1.94
(2)	2.002	-11.8934 (1.389)	-.0676 (2.903)	.3733	.3257	1.94
(3)	2.079	-13.5345 (1.669)	-.0685 (3.045)	.3624	.3648	1.92

Dependent Variable	Constant Term	Coefficient of U	Coefficient of T	$\bar{S}$	$\bar{R}^2$	d
SU - Women, Total						
(1)	0.025	6.9367 (.619)	-.0353 (2.630)	.2130	.2619	2.45
(2)	0.101	4.7676 (.405)	-.0352 (2.468)	.2149	.2486	2.44
(3)	0.062	5.9877 (.507)	-.0352 (2.532)	.2115	.2542	2.46

[1]All basic data are from the Dominion Bureau of Statistics, Labour Force Survey.

Note: (a) The first equation in each category employs the seasonally unadjusted unemployment rate; the second, the moving average unemployment rate; and the third, the seasonally adjusted unemployment rate.

(b) The ratios of the estimated coefficients (ignoring signs) to their standard errors are given in parentheses.

(c) Values of T range from -7 for 1956 to +7 in 1970.

(d) $\bar{S}$ stands for the standard error of estimate.

(e) d stands for the Durbin-Watson statistic.

$$SU_C = 1.220 - .0038(4.1) - .0858(-6)$$
$$= 1.719$$

while the estimated increase in seasonality during 1966 to 1967 was

$$SU_C = 1.220 - .0038(4.1) - .0858(4)$$
$$= .8612$$

When the regional results are examined, the Prairie Region appears to have experienced the largest downward trend in its seasonal increase in unemployment. This may be partly due to the declining importance of its agricultural sector when compared with its nonfarm sector. Ontario experienced the smallest downward trend, perhaps reflecting the relative stability of employment due to its varied manufacturing base.

Consider now the equations estimated for each of the male age groups. Published data for the twelve-month moving averages and the seasonally adjusted unemployment and labour force levels for men necessitated grouping the 25 to 44 age groups and the 45 and over age groups. Although the seasonally unadjusted figures are given for the individual groups comprising these two larger categories, estimates were also calculated for the two larger groups using the seasonally unadjusted unemployment rates in order to facilitate comparison with the moving average and seasonally adjusted rates.

The 20 to 24 age group exhibits the largest negative trend coefficient. This may be an indication of the

decreasing incidence of seasonality in this age group due to the increasing enrolment in post-secondary education which has been occurring during the past fifteen years. The second largest trend coefficient is found in the 25 to 44 age group, which is the group generally affected when seasonal layoffs occur, perhaps signifying that changes are taking place in the economy which are resulting in declining seasonal fluctuations. The 14 to 19 age group has the smallest trend coefficient. This may be expected since this age group is the least affected by seasonal unemployment.

When the equation for females of all age groups is examined, it can be seen that while the trend coefficient is negative and significant, it is smaller than any trend parameter found in the male age groups. This is not surprising since women do not experience the seasonal fluctuations in employment and unemployment to the degree found in the male employment and unemployment levels.

The coefficient of determination, corrected for degrees of freedom, ($\bar{R}^2$) is fairly low for all the equations which were estimated. This may be due to the random sampling error in the Labour Force Survey data from which all estimates were derived, in addition to the fact that only two independent variables were used in estimating the equations. These two variables were chosen in order to determine whether or not the general level of economic activity in the economy had a significant effect on the summer-to-winter increase in

unemployment. The unemployment rate was chosen as the indicator of general business activity, while the trend term was employed to capture the other influences which affect seasonal increases in unemployment. The estimated equations suggest that other factors have been more instrumental in reducing the average seasonal increase in unemployment during the past fifteen years than the cyclical influences which have prevailed.

In addition, it should be noted that the Durbin-Watson statistic, d, indicated an absence of either positive or negative autocorrelation of the residuals for every category except Ontario, where the Durbin-Watson test proved to be inconclusive.

Equations were also estimated for the industry and occupation groups for the period from the third quarter of 1961 to the first quarter of 1970. None of the estimated coefficients were significant, thus indicating an absence of a trend in seasonal increases in unemployment during the sixties. It should be noted, however, that the number of observations was only nine, which may partially explain why the equations did not perform at all satisfactorily.

X

CONCLUSION

The purpose of this thesis was to determine whether or not the average seasonal increase in unemployment during 1965 to 1970 had changed appreciably from the average which prevailed during 1955 to 1960. To facilitate analysis, seasonal unemployment was defined as the ratio of the net difference between the number of persons unemployed in the first quarter of a given year and the third quarter of the preceding year to the number of persons unemployed in the third quarter of the preceding year. This definition was used because of the nature of the original published data from which the estimates in this thesis were derived. Specifically, the seasonal increase in unemployment could be calculated from the published unemployment statistics for Canada, the five regions, men by age group, women, and industry and occupation groups. Although the industry and occupation group estimates were available only for the sixties, calculations were carried out in order to determine whether any seasonality changes were discernible when only the sixties were considered.

The summer-to-winter increase in unemployment generally affects males between the ages of 20 and 64, who are employed in the construction, primary, or transportation industries, and who reside in the Atlantic, Quebec, or

Prairie Regions. However, estimates of the average seasonal increase in unemployment indicated that its magnitude was smaller during the late sixties than during the late fifties for all categories which were considered. The next step was to determine whether or not this apparent decline was due to cyclical influences or whether other factors contributed to the changing trend. As a result, equations were estimated for each category, using the method of ordinary least squares. These estimates indicated that factors other than the general level of economic activity were responsible for the declining summer-to-winter increase in unemployment.

Seasonal fluctuations in unemployment may be reduced in three basic ways:[1]

(a) introduce greater stability in the seasonal industries;

(b) use improved technology to reduce the number attached to these industries (such as logging and agriculture);

(c) change the economy's industrial composition of output in the direction of non-seasonal industries.

Examination of the average summer-to-winter increases in unemployment in the industry and occupation groups during the sixties indicates that a considerable degree of instability still exists in the seasonal industries. This area continues

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[1] Proceedings, p. 1099.

to provide a challenge to both the economist and policymaker. The Scandinavian countries successfully stabilized some of the seasonal fluctuations in the construction industry more than ten years ago through the use of a "permit system" which is under strict government supervision.[2] However, the extent of government intervention used in this program might not be politically feasible in Canada.

Technological improvements are reducing the number of workers attached to the logging and agricultural industries. This trend is expected to continue and, as a result, increases in seasonal unemployment arising from these industries should continue to diminish.

It is suggested that the observed decline in the average seasonal increase in unemployment during the past fifteen years has been mainly due to the changing industrial composition of the economy. Substantial growth has occurred in the service; finance, insurance, and real estate; and trade sectors, which are not subject to severe seasonal fluctuations; while declines have been observed in agriculture, forestry and, to a lesser extent, construction and mining - the industries which contribute the largest percentages to seasonal unemployment. The continued growth of the service industries

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[2] "Seasonal Employment Fluctuations in Building Industry in Scandinavia", The Labour Gazette, LVI, No. 11 (November 1956), 1370-1374.

should reduce the seasonal fluctuations in employment and unemployment still further.

The Federal Government, through its various manpower policies, is attempting to provide assistance and programs which will enable people to be productive and to adapt quickly to the changing needs of the Canadian economy.[3] Further work appears necessary in the area of reducing the fluctuations in the seasonal industries, especially construction. Perhaps a cost-benefit analysis approach should be used in determining whether or not certain projects, especially those financed by public funds, should be built during the winter, with the social, rather than the private, costs matched against the social, rather than private, benefits. The social costs might include unemployment insurance payments, decreased buying power of the laid-off worker, underutilization of capital equipment, and decreased tax revenues. The social benefits could include increased incomes and, hence, an increased demand for goods and services which could lead to further increases in demand elsewhere; increased tax revenues; psychological effects on the worker and his family (this may be somewhat difficult to determine empirically); and full utilization of capital equipment throughout the year, perhaps leading to reduced unit production costs. In addition,

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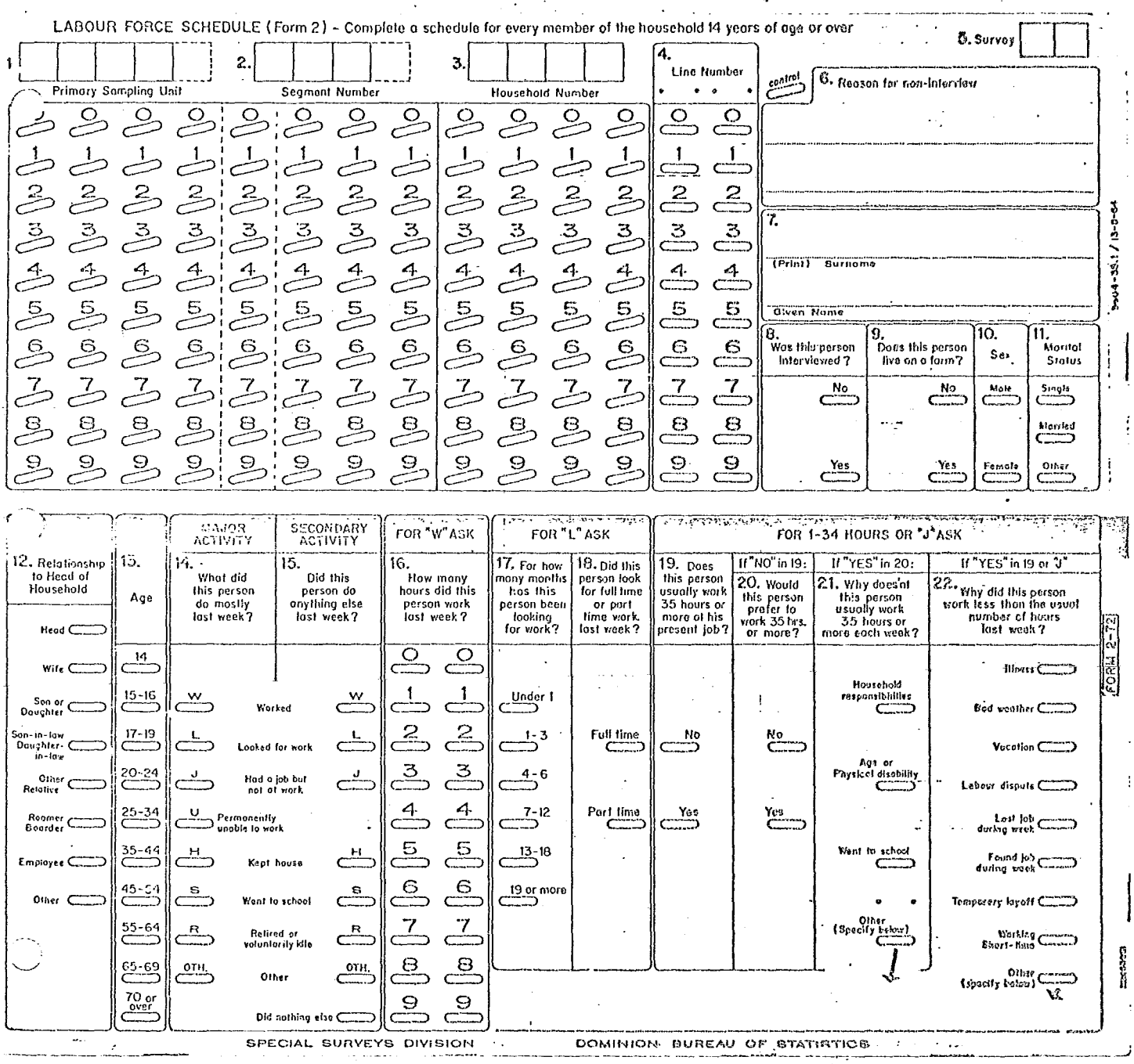
[3] Garnet T. Page, "Canada's Manpower Training and Education: Federal Policy and Programs", Canadian Education and Research Digest, VII, No. 4 (December 1967), 283-298.

improved technology in order to overcome the disadvantages of winter activity in certain industries and continued emphasis on year-round rather than short-term production would further help to reduce the seasonal fluctuations in employment and unemployment. Further empirical analysis might include estimating the summer-to-winter increase in unemployment, using as many independent variables as might be necessary in order to determine the "other" factors which affect the magnitude of the seasonal increase in unemployment. For example, a variable could be included which would be a measure of the "industry mix" in the economy. While it is not expected that seasonal variations can be entirely eliminated, continuing attempts should be made to reduce their magnitude.

APPENDIX A



LABOUR FORCE SCHEDULE (Form 2) - Complete a schedule for every member of the household 14 years of age or over

1. Primary Sampling Unit
2. Segment Number
3. Household Number
4. Line Number
5. Survey
6. Reason for non-interview
7. (Print) Surname / Given Name
8. Was this person interviewed? (No / Yes)
9. Does this person live on a farm? (No / Yes)
10. Sex (Male / Female)
11. Marital Status (Single / Married / Other)
12. Relationship to Head of Household (Head / Wife / Son or Daughter / Son-in-law Daughter-in-law / Other Relative / Roomer Boarder / Employee / Other)
13. Age (14 / 15-16 / 17-19 / 20-24 / 25-34 / 35-44 / 45-54 / 55-64 / 65-69 / 70 or over)
14. MAJOR ACTIVITY - What did this person do mostly last week? (W Worked / L Looked for work / J Had a job but not at work / U Permanently unable to work / H Kept house / S Went to school / R Retired or voluntarily idle / OTH. Other)
15. SECONDARY ACTIVITY - Did this person do anything else last week? (W / L / J / H / S / R / OTH. / Did nothing else)
16. FOR "W" ASK - How many hours did this person work last week?
17. FOR "L" ASK - For how many months has this person been looking for work? (Under 1 / 1-3 / 4-6 / 7-12 / 13-18 / 19 or more)
18. Did this person look for full time or part time work last week? (Full time / Part time)
19. FOR 1-34 HOURS OR "J" ASK - Does this person usually work 35 hours or more at his present job? (No / Yes)
20. If "NO" in 19: Would this person prefer to work 35 hrs. or more? (No / Yes)
21. If "YES" in 20: Why doesn't this person usually work 35 hours or more each week? (Household responsibilities / Age or Physical disability / Went to school / Other (Specify below))
22. If "YES" in 19 or "J": Why did this person work less than the usual number of hours last week? (Illness / Bad weather / Vacation / Labour dispute / Lost job during week / Found job during week / Temporary layoff / Working Short-time / Other (Specify below))

FORM 2-72

SPECIAL SURVEYS DIVISION DOMINION BUREAU OF STATISTICS

FOR "W", "L", OR "J" IN QUESTION 14 OR 15 ASK

23. For whom did this person work?

name of firm, government agency or person

24. INDUSTRY In what kind of business or industry did this person work?

25. OCCUPATION What kind of work did this person do in this industry?

26. To what class of worker did this person belong?

WORKED FOR OTHERS
- Paid worker
- Unpaid family worker

OWN BUSINESS, FARM OR PROFESSION
- With paid help
- Without paid help

FOR OFFICE USE ONLY

B	none								
X	001-21	183-229	311-18	501-45	801-03	874-79	Manag.	Farm.	
0	031-39	231-39	321-29	548	821	891-99	Prof.	0	
1	041-47	242-49	331-39	572-79	823-25	1	Clerical	Logging	P
2	051-99	251-59	341-59	2	827-28	902-09	2	Fishing	P G B
3	3	261-68	365-69	602-29	831	931	Sales	Mining	P G N B
4	101-47	271-74	371-79	631-99	851-59	951	Service	4	O A
5	151-53	286-89	381-99	5	861-69	991	5	Crafts	E
6	161-69	291-98	6	702-37	871-72	6	Transp.	Labourer	N P
7	172-79	301-09	401-21	7	873	7	Communic.	7	

27. Make comments on all vague, difficult or unusual situations

ACTIVITY LAST MONTH

MAJOR: 28. What was this person doing the week ending ____?		SECONDARY: 29. Did this person do anything else that week?
W	Worked	W
L	Looked for work	L
J	Had a job but not at work	J
U	Permanently unable to work	
H	Kept house	H
S	Went to school	S
R	Retired or voluntarily idle	R
OTH.	Other	OTH.
	Did nothing else	

APPENDIX B

EMPLOYMENT CANADA TOTAL
EMPLOI TOTAL, CANADA

FINAL SEASONAL FACTORS
FACTEURS SAISONNIERS FINALS

YEAR ANNEE	J	F	M	A	M	J	J	A	S	O	N	D
1953	0.95541	0.95381	0.95501	0.96797	1.00314	1.02459	1.04828	1.04904	1.02893	1.01977	1.00334	0.99099
1954	0.95575	0.95361	0.95422	0.96797	1.00306	1.02501	1.04814	1.04981	1.02816	1.01965	1.00400	0.99143
1955	0.95630	0.95289	0.95274	0.96762	1.00308	1.02587	1.04815	1.05083	1.02752	1.01975	1.00508	0.99135
1956	0.95656	0.95142	0.95153	0.96715	1.00331	1.02691	1.04876	1.05083	1.02789	1.02058	1.00627	0.99008
1957	0.95583	0.95013	0.95008	0.96664	1.00456	1.02832	1.05014	1.05014	1.02876	1.02182	1.00632	0.98801
1958	0.95460	0.94913	0.94916	0.96654	1.00575	1.02957	1.05171	1.04944	1.02924	1.02299	1.00588	0.98613
1959	0.95384	0.94920	0.94803	0.96624	1.00683	1.03054	1.05296	1.04953	1.02879	1.02325	1.00544	0.98605
1960	0.95360	0.94850	0.94750	0.96608	1.00694	1.03142	1.05342	1.05086	1.02755	1.02203	1.00568	0.98675
1961	0.95341	0.94832	0.94737	0.96670	1.00644	1.03190	1.05431	1.05225	1.02559	1.01977	1.00530	0.98794
1962	0.95328	0.94826	0.94948	0.96761	1.00524	1.03202	1.05513	1.05345	1.02331	1.01658	1.00441	0.98794
1963	0.95401	0.95008	0.95261	0.96883	1.00415	1.03092	1.05628	1.05389	1.02076	1.01383	1.00220	0.98794
1964	0.95537	0.95231	0.95670	0.97009	1.00372	1.02893	1.05604	1.05419	1.01858	1.01159	1.00054	0.98777
1965	0.95686	0.95446	0.96001	0.97108	1.00353	1.02673	1.05574	1.05503	1.01635	1.01089	0.99882	0.98838
1966	0.95744	0.95575	0.96187	0.97265	1.00334	1.02485	1.05516	1.05528	1.01472	1.01072	0.99890	0.98868
1967	0.95783	0.95624	0.96206	0.97327	1.00369	1.02467	1.05525	1.05506	1.01326	1.01032	0.99901	0.98952
1968	0.95793	0.95667	0.96068	0.97460	1.00429	1.02531	1.05497	1.05373	1.01257	1.00958	0.99964	0.99007
1969	0.95819	0.95683	0.95963	0.97512	1.00498	1.02632	1.05478	1.05291	1.01214	1.00886	0.99962	0.99065
FORECAST												PREVISION
1970	0.95832	0.95691	0.95910	0.97538	1.00532	1.02683	1.05468	1.05249	1.01193	1.00850	0.99961	0.99094

EMPLOYMENT CANADA NON-AGRICULTURE
EMPLOI NON AGRICOLE, CANADA

FINAL SEASONAL FACTORS
FACTEURS SAISONNIERS FINALS

YEAR ANNEE	J	F	M	A	M	J	J	A	S	O	N	D
1953	0.96924	0.96839	0.96312	0.96963	0.99710	1.02245	1.02351	1.02668	1.01911	1.02044	1.01468	1.00566
1954	0.96955	0.96833	0.96304	0.96925	0.99687	1.02251	1.02413	1.02629	1.01912	1.02027	1.01506	1.00599
1955	0.96984	0.96785	0.96241	0.96867	0.99667	1.02302	1.02522	1.02587	1.01960	1.02123	1.01566	1.00538
1956	0.96912	0.96568	0.96195	0.96774	0.99715	1.02457	1.02794	1.02542	1.02033	1.02162	1.01610	1.00353
1957	0.96762	0.96377	0.96026	0.96774	0.99902	1.02636	1.03009	1.02568	1.02093	1.02311	1.01596	1.00029
1958	0.96575	0.96207	0.95894	0.96767	1.00136	1.02836	1.03202	1.02663	1.02068	1.02343	1.01531	0.99769
1959	0.96517	0.96130	0.95726	0.96778	1.00289	1.02955	1.03337	1.02861	1.02002	1.02330	1.01451	0.99711
1960	0.96482	0.95972	0.95660	0.96727	1.00310	1.03087	1.03531	1.03102	1.01826	1.02163	1.01412	0.99773
1961	0.96488	0.95858	0.95630	0.96801	1.00190	1.03074	1.03838	1.03352	1.01620	1.01897	1.01323	0.99866
1962	0.96438	0.95835	0.95847	0.96909	1.00045	1.02968	1.04102	1.03576	1.01341	1.01575	1.01181	0.99846
1963	0.96491	0.96036	0.96148	0.97099	0.99888	1.02718	1.04291	1.03771	1.01122	1.01201	1.00905	0.99905
1964	0.96580	0.96249	0.96552	0.97297	0.99801	1.02465	1.04328	1.03949	1.00903	1.00862	1.00624	0.99917
1965	0.96738	0.96486	0.96866	0.97461	0.99736	1.02272	1.04359	1.04109	1.00724	1.00591	1.00374	0.99965
1966	0.96799	0.96643	0.97065	0.97595	0.99708	1.02217	1.04360	1.04221	1.00608	1.00492	1.00261	0.99790
1967	0.96838	0.96767	0.97108	0.97621	0.99786	1.02310	1.04396	1.04240	1.00523	1.00380	1.00251	0.99715
1968	0.96829	0.96836	0.96984	0.97677	0.99876	1.02486	1.04364	1.04173	1.00488	1.00373	1.00276	0.99600
1969	0.96844	0.96857	0.96881	0.97706	0.99962	1.02611	1.04348	1.04104	1.00447	1.00338	1.00289	0.99621
FORECAST												PREVISION
1970	0.96851	0.96867	0.96829	0.97720	1.00004	1.02674	1.04340	1.04069	1.00427	1.00320	1.00295	0.99631

EMPLOYMENT CANADA AGRICULTURE
EMPLOI AGRICOLE, CANADA

FINAL SEASONAL FACTORS
FACTEURS SAISONNIERS FINALS

YEAR ANNEE	J	F	M	A	M	J	J	A	S	O	N	D
1953	0.88482	0.87687	0.91097	0.95764	1.03442	1.05318	1.18110	1.16407	1.06550	1.01676	0.94419	0.91393
1954	0.88459	0.87485	0.90524	0.95976	1.03616	1.05086	1.18062	1.17388	1.06658	1.01838	0.93990	0.91315
1955	0.88402	0.87027	0.89693	0.96031	1.03887	1.04828	1.18168	1.18934	1.07228	1.01494	0.93490	0.91125
1956	0.88480	0.86688	0.88739	0.96198	1.03989	1.04255	1.17934	1.20612	1.08137	1.01888	0.92996	0.90688
1957	0.88164	0.86273	0.88329	0.95802	1.03917	1.04170	1.18474	1.21216	1.08965	1.01747	0.93102	0.90516
1958	0.87744	0.85860	0.88012	0.95745	1.03790	1.03867	1.19204	1.21177	1.09467	1.02213	0.93369	0.90353
1959	0.87123	0.85486	0.87993	0.95507	1.03757	1.03893	1.19910	1.20570	1.09610	1.02480	0.93896	0.90327
1960	0.86840	0.85122	0.87733	0.95695	1.03841	1.03734	1.19975	1.20637	1.09764	1.02721	0.94174	0.90244
1961	0.86381	0.84977	0.87640	0.95671	1.03827	1.04404	1.19595	1.20712	1.09624	1.02904	0.94252	0.90159
1962	0.85910	0.85196	0.87341	0.95426	1.04102	1.05449	1.19371	1.20719	1.09820	1.02725	0.94308	0.89743
1963	0.85302	0.85249	0.87290	0.94788	1.04752	1.06747	1.19153	1.20529	1.10091	1.03113	0.94273	0.88452
1964	0.84818	0.85452	0.87085	0.94004	1.05962	1.07306	1.19105	1.20490	1.10892	1.03796	0.94414	0.86941
1965	0.84398	0.84634	0.86898	0.93370	1.07151	1.07388	1.19299	1.21399	1.11365	1.04626	0.94234	0.85850
1966	0.83837	0.83920	0.86204	0.93246	1.07847	1.07332	1.19947	1.21761	1.11752	1.05212	0.94476	0.85635
1967	0.83312	0.82764	0.85445	0.93376	1.08135	1.07681	1.20529	1.22040	1.11573	1.05459	0.94582	0.85970
1968	0.82765	0.82413	0.84774	0.93795	1.08095	1.08049	1.20902	1.21442	1.11459	1.05636	0.94896	0.86224
1969	0.82485	0.82197	0.84505	0.94029	1.08133	1.08292	1.20946	1.21228	1.11293	1.05631	0.94874	0.86408
FORECAST												PREVISION
1970	0.82346	0.82088	0.84370	0.94145	1.08151	1.08414	1.20968	1.21122	1.11210	1.05629	0.94863	0.86501

LABOUR FORCE CANADA TOTAL
MAIN-D'OEUVRE TOTALE, CANADA

FINAL SEASONAL FACTORS
FACTEURS SAISONNIERS FINALS

YEAR ANNEE	J	F	M	A	M	J	J	A	S	O	N	D
1953	0.98029	0.97803	0.97762	0.98351	0.99949	1.01213	1.03234	1.03260	1.01109	1.00493	0.99659	0.99159
1954	0.97996	0.97824	0.97797	0.98374	0.99922	1.01216	1.03193	1.03309	1.01028	1.00476	0.99669	0.99220
1955	0.97960	0.97830	0.97843	0.98392	0.99894	1.01246	1.03151	1.03339	1.00933	1.00402	0.99692	0.99273
1956	0.97977	0.97844	0.97917	0.98448	0.99871	1.01294	1.03109	1.03264	1.00814	1.00349	0.99744	0.99287
1957	0.98044	0.97846	0.97986	0.98500	0.99872	1.01326	1.03117	1.03111	1.00754	1.00319	0.99721	0.99232
1958	0.98125	0.97910	0.98068	0.98584	0.99899	1.01270	1.03163	1.02992	1.00635	1.00394	0.99675	0.99160
1959	0.98224	0.97934	0.98055	0.98599	0.99976	1.01194	1.03276	1.02965	1.00576	1.00433	0.99616	0.99116
1960	0.98214	0.97941	0.97993	0.98584	1.00048	1.01213	1.03421	1.03067	1.00483	1.00389	0.99645	0.99122
1961	0.98146	0.97843	0.97860	0.98527	1.00010	1.01389	1.03641	1.03225	1.00454	1.00282	0.99673	0.99145
1962	0.97952	0.97728	0.97816	0.98406	0.99878	1.01656	1.03911	1.03470	1.00406	1.00170	0.99694	0.99076
1963	0.97816	0.97569	0.97752	0.98287	0.99792	1.01874	1.04238	1.03750	1.00317	1.00117	0.99596	0.98974
1964	0.97675	0.97436	0.97720	0.98209	0.99847	1.01978	1.04495	1.04061	1.00246	1.00053	0.99497	0.98840
1965	0.97575	0.97311	0.97621	0.98182	0.99999	1.02022	1.04685	1.04374	1.00131	1.00002	0.99357	0.98839
1966	0.97426	0.97260	0.97534	0.98202	1.00108	1.02014	1.04791	1.04535	1.00097	0.99962	0.99357	0.98824
1967	0.97314	0.97212	0.97466	0.98206	1.00175	1.02145	1.04853	1.04538	0.99975	0.99904	0.99361	0.98902
1968	0.97249	0.97217	0.97446	0.98280	1.00156	1.02282	1.04876	1.04383	0.99895	0.99860	0.99435	0.98923
1969	0.97240	0.97209	0.97456	0.98329	1.00138	1.02431	1.04874	1.04273	0.99802	0.99814	0.99451	0.98970
FORECAST												PREVISION
1970	0.97236	0.97205	0.97461	0.98353	1.00129	1.02505	1.04872	1.04217	0.99756	0.99790	0.99459	0.98993

LABOUR FORCE CANADA NON-AGRICULTURE
MAIN-D'OEUVRE NON AGRICOLE, CANADA

FINAL SEASONAL FACTORS
FACTEURS SAISONNIERS FINALS

YEAR ANNEE	J	F	M	A	M	J	J	A	S	O	N	D
1953	0.99714	0.99440	0.98906	0.98806	0.99375	1.00622	1.00695	1.01041	0.99947	1.00327	1.00626	1.00528
1954	0.99657	0.99432	0.99022	0.98790	0.99327	1.00669	1.00714	1.01006	0.99900	1.00299	1.00596	1.00586
1955	0.99580	0.99426	0.99165	0.98774	0.99266	1.00745	1.00763	1.00921	0.99878	1.00300	1.00561	1.00604
1956	0.99487	0.99377	0.99312	0.98783	0.99260	1.00911	1.00928	1.00749	0.99762	1.00202	1.00537	1.00574
1957	0.99482	0.99370	0.99334	0.98869	0.99318	1.00985	1.01029	1.00651	0.99722	1.00197	1.00492	1.00407
1958	0.99481	0.99399	0.99333	0.98956	0.99383	1.01012	1.01190	1.00682	0.99569	1.00192	1.00402	1.00237
1959	0.99547	0.99476	0.99211	0.98988	0.99429	1.00960	1.01380	1.00877	0.99543	1.00206	1.00275	1.00118
1960	0.99473	0.99429	0.99103	0.98935	0.99445	1.01044	1.01739	1.01114	0.99423	1.00130	1.00217	1.00076
1961	0.99382	0.99269	0.98933	0.98863	0.99427	1.01190	1.02122	1.01382	0.99408	1.00013	1.00207	1.00069
1962	0.99144	0.98997	0.98892	0.98742	0.99363	1.01386	1.02531	1.01729	0.99323	0.99918	1.00205	0.99984
1963	0.98986	0.98761	0.98800	0.98655	0.99310	1.01488	1.02881	1.02142	0.99343	0.99794	1.00086	0.99956
1964	0.98789	0.98519	0.98734	0.98619	0.99324	1.01550	1.03207	1.02594	0.99352	0.99634	0.99902	0.99859
1965	0.98665	0.98379	0.98570	0.98627	0.99425	1.01615	1.03508	1.02966	0.99353	0.99414	0.99705	0.99855
1966	0.98492	0.98326	0.98458	0.98618	0.99537	1.01665	1.03743	1.03213	0.99315	0.99336	0.99627	0.99687
1967	0.98376	0.98353	0.98322	0.98580	0.99653	1.01834	1.03904	1.03262	0.99198	0.99254	0.99648	0.99654
1968	0.98305	0.98399	0.98235	0.98581	0.99683	1.01995	1.03918	1.03191	0.99108	0.99300	0.99723	0.99565
1969	0.98299	0.98416	0.98166	0.98605	0.99689	1.02154	1.03899	1.03105	0.99026	0.99293	0.99768	0.99591
FORECAST												PREVISION
1970	0.98296	0.98424	0.98131	0.98616	0.99692	1.02234	1.03889	1.03063	0.98985	0.99289	0.99790	0.99604

Source: Dominion Bureau of Statistics, Seasonally Adjusted Labour Force Statistics, January 1953 - December 1969.

APPENDIX C

AVERAGE INCOME, ALL FAMILIES AND UNATTACHED INDIVIDUALS ATLANTIC AND ONTARIO REGIONS, BY METROPOLITAN AND NON-METROPOLITAN AREAS, 1965

Region	All Areas	Metropolitan Areas	Non-Metropolitan Areas
Atlantic	4,601	5,908	4,032
Ontario	6,355	6,859	5,242

Source: Dominion Bureau of Statistics, Income Distributions by Size in Canada, 1965, p. 25.

Note: (a) These estimates are based upon survey data obtained from a sample of 8,800 families and unattached individuals in March and April 1966.

(b) The estimates include both farm and nonfarm income.

(c) Centres with a population of 30,000 and over are classified as metropolitan areas and the rest of the country as non-metropolitan.

APPENDIX D

EMPLOYMENT INDICES, BY INDUSTRY

CANADA, BOTH SEXES

1957-1968

1961 = 100

	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Forestry	129.8	102.4	107.8	114.0	100.0	99.5	96.9	102.8	104.1	106.2	102.3	91.1
Mining, including Milling	112.7	102.8	108.0	103.5	100.0	99.4	97.9	98.8	105.1	107.0	109.1	109.8
Manufacturing	105.5	100.1	102.0	100.6	100.0	103.8	106.1	111.1	117.2	123.5	123.1	122.1
Construction	125.0	109.4	112.1	105.9	100.0	101.1	100.0	104.1	118.4	128.9	122.6	119.4
Transportation, Communication, and Other Utilities	106.4	104.5	104.7	100.3	100.0	99.7	100.7	101.8	104.8	107.5	110.9	109.5
Trade	95.7	95.5	98.1	99.9	100.0	101.2	103.5	108.1	114.3	122.0	125.8	129.4
Finance, Insurance, and Real Estate	90.4	93.8	95.7	96.6	100.0	103.2	107.6	111.9	116.6	120.5	126.0	131.4
Service	91.8	92.6	95.2	96.8	100.0	101.7	106.1	114.7	125.9	139.1	153.0	157.8
Industry Composite	100.0	100.4	102.2	100.7	100.0	102.2	104.4	108.2	114.3	120.7	122.6	122.7

Source: Dominion Bureau of Statistics, Review of Employment and Average Weekly Wages and Salaries, 1957-67, pp. 8-11; 1966-68, pp. 7, 12-15.

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