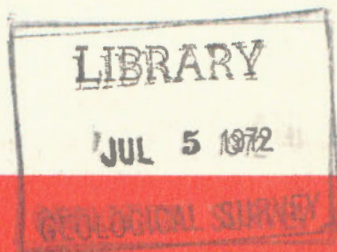


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# IMPACT OF INDUSTRIAL INCENTIVES:

Southern Georgian Bay Region, Ontario



M. H. Yeates and P. E. Lloyd

**POLICY and PLANNING BRANCH**

Department of Energy, Mines and Resources  
Ottawa, Canada

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**POLICY AND PLANNING BRANCH  
Department of Energy, Mines  
and Resources  
Ottawa, Canada.**

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## Foreword

This study is based on a report commissioned by the Area Development Agency of the federal Department of Industry on the impact of the ADA program on the southern Georgian Bay area of Ontario.

The ADA program came into being in 1963 offering industrial incentives in the form of income tax exemptions. The program was initially designed as a federal measure to alleviate pockets of unemployment apparent during the early years of the 1960s. In fact, in 1961 unemployment was reported to be 7.2% nationally, and very much higher in certain areas of the country. In 1965, the program changed in both range and scope, for low income and slow employment growth were added to unemployment as criteria for selecting designated areas. This change in emphasis to factors relating to "economic stress" was accompanied by a revision and extension of areas designated as eligible for incentives. Three of the 65 National Employment Service offices, later to be modified and called Canada Manpower Centres (CMC), so designated in 1965 were those of Owen Sound, Collingwood and Midland in southern Ontario.

It is on this area of approximately 2,500 square miles and 100,000 people that the attention of this monograph is focussed.

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Manchester, England.

## Preface

The appearance of this publication marks a change in sponsorship of the *Geographical Papers* series issued previously under the aegis of the former Geographical Branch. Henceforth this series will be published by the Policy and Planning Branch, the sequence of numbering remaining unchanged.

Although the original study was undertaken for and financed by the federal Department of Industry, it was considered worthy of wider distribution as an analysis of the effectiveness of a regional development program. It has particular relevance to the objectives of the Policy and Planning Branch and specifically to the research program in economic geography. Accordingly, it is with pleasure that we have taken the opportunity to associate ourselves with the authors and the Department of Industry in publishing this report as a Geographical Paper.

E. Roy Tinney  
Acting Director,  
Policy and Planning Branch



## Préface

La présente étude marque une orientation nouvelle pour la publication des *Geographical Papers*, autrefois diffusés par l'ancienne Direction de la géographie. Dorénavant, la série sera publiée par la Direction des politiques et de la planification. La séquence du numérotage demeure la même.

Bien que l'étude originale ait été entreprise à l'intention du ministère fédéral de l'Industrie et financée par celui-ci on a jugé bon de lui donner une plus grande diffusion en tant qu'analyse de l'efficacité d'un programme d'expansion régionale. Elle se rapporte étroitement aux objectifs de la Direction des politiques et de la planification et plus particulièrement au programme de recherche en géographie économique. Nous sommes donc heureux de nous associer aux auteurs et au ministère de l'Industrie en publiant ce rapport sous forme de mémoire géographique.

E. Roy Tinney  
Directeur intérimaire,  
Direction des politiques et  
de la planification.

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# IMPACT OF INDUSTRIAL INCENTIVES: SOUTHERN GEORGIAN BAY REGION, ONTARIO

*Maurice H. Yeates and Peter E. Lloyd*

## *Chapter I*

### Introduction

This study is concerned with the impact of the Area Development Incentives Act of 1965, as administered by the Area Development Agency (ADA) of the Department of Industry, on the Canada Manpower Centres (CMC) of Owen Sound, Collingwood and Midland, in Ontario (Figure 1.1). In 1965, manufacturing firms already established or setting up factories in this area were designated as eligible for one of the following(1):

1. A Development Grant in the form of cash, or an equivalent tax credit of up to one-third of the capital cost of new machinery and equipment and new buildings. The Development Grant was exempt from federal income tax and did not reduce the amount of capital cost which might be used for tax purposes;
2. Accelerated Capital Cost allowances of up to 50% per annum, straight line, on new production machinery and equipment;
3. Accelerated Capital Cost allowances of up to 20% per annum, straight line, on new buildings and significant extensions to existing buildings.

Thus the ADI Act provided considerable incentives for new firms to enter the area, and also encouraged firms already there to expand and modernize. On December 1, 1967, the area was de-designated, though new firms and existing firms would still be eligible for consideration for assistance if the application were made by November 30, 1967. For purposes of this study the three Manpower Centres, which contain a population of 100,000, will still be referred to as the "designated area".

---

MS received October 31, 1969.

### Scope of the study

This study assesses the primary and secondary economic impact of the ADA program on the designated area. As the primary concern of the ADI Act was to provide employment in areas with high unemployment, slow growth and low wages, the focus will be on employment. However, the impact of the program on wage rates, housing, and commercial structure will be investigated also. The study will

1. assess the magnitude of the labor force that is associated either directly or indirectly with the manufacturing industries expanding in or induced to the designated area, and determine to the extent that it is possible the multiplier effect of these industries;
2. attempt a partial analysis of the inter-sectoral and inter-regional input-output structure of manufacturing in the designated area;
3. examine changes in the sectoral distribution of manufacturing employment that have occurred in the southern Georgian Bay "geographic area" during the years in which the ADA program has been in effect;
4. investigate the structure of service activities in the southern Georgian Bay geographic area, and indicate the changes that can be expected as a result of this ADA induced industrial expansion.

### Southern Georgian Bay geographic area

The geographic area of southern Georgian Bay is defined here as being the journey-to-work areas fronting



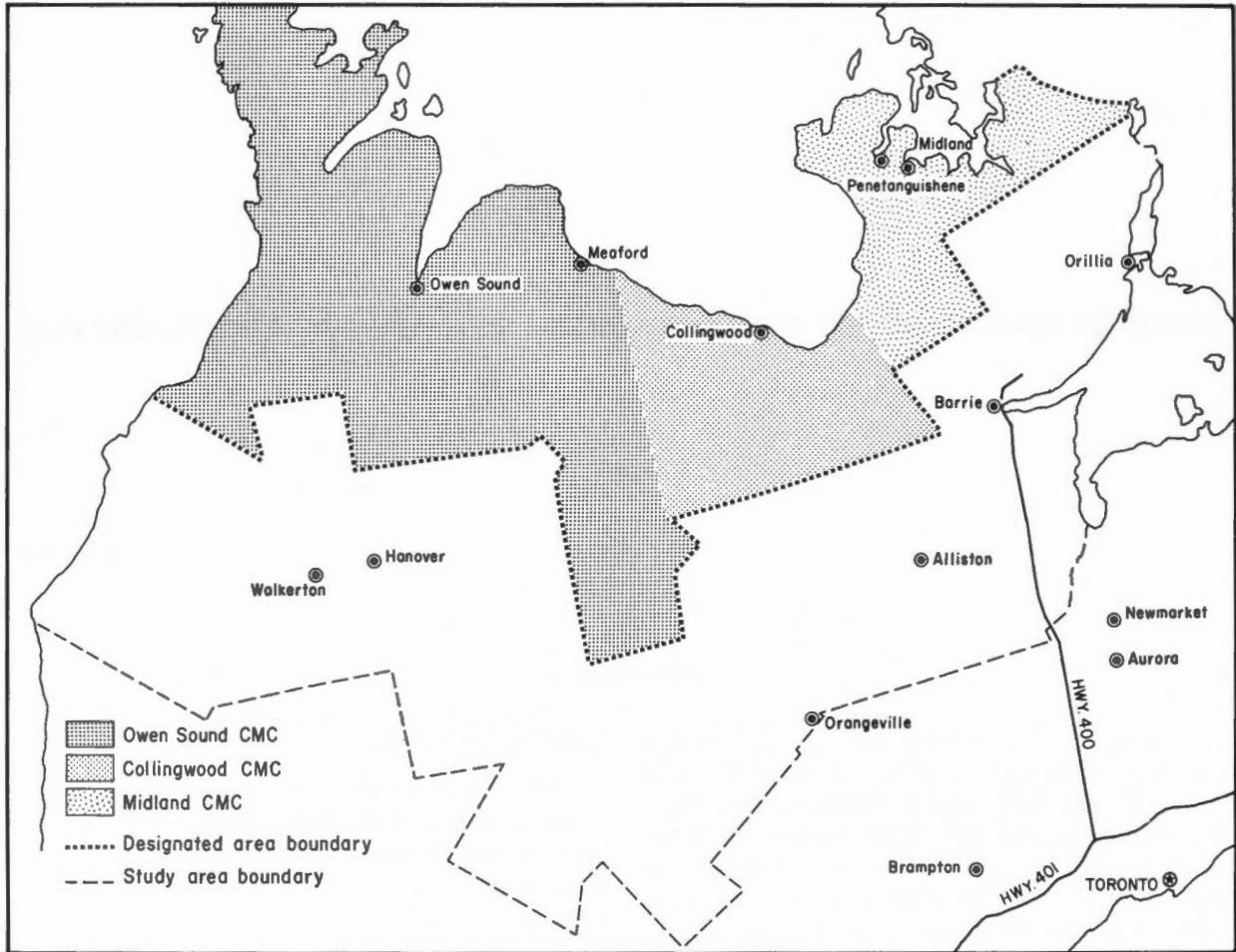


FIGURE 1.1 Canada Manpower Centres within the designated area.

on the bay itself, plus the journey-to-work areas immediately adjacent to them (2). For convenient data collection, the southernmost boundaries of these areas are modified to conform to the southern county boundaries of Bruce, Grey, Simcoe and Dufferin, plus the northern half of Wellington (following township lines). This zone is delimited in Figure 1.2 and hereafter will be referred to as the study area.

The study area can therefore be divided into two parts: the *designated area*, and a residual area immediately to the south and east which will be referred to as the *peripheral area*. The peripheral area extends on the average a radius of about twenty five miles from the southern boundary of the designated area, and is useful in the ensuing analysis for a number of reasons.

1. It acts as an area with which economic development in the designated area may be contrasted.
2. Its inclusion more than doubles the size (area) of the study area, and increases the total of industrial

establishments in some SIC(3) categories to a more meaningful number.

3. It increases the area for sampling in the analysis of the impact of the ADA program on the service structure of settlements

As a result of the inclusion of this peripheral zone into the southern Georgian Bay geographic area, the study area consists of 6,157 square miles.

#### *Time period involved*

Central to the analysis of the impact of the ADA program is that the study involves change through space in time. The initial time period will be taken as 1964, the year immediately prior to the date of designation. The terminal date for the greater part of the analysis is July-August, 1967, the time of the field survey of the area (discussed in a later section). Some of the discussion will be updated to contain 1968 information, and occasionally estimates to 1970 are made from the 1967 field survey.

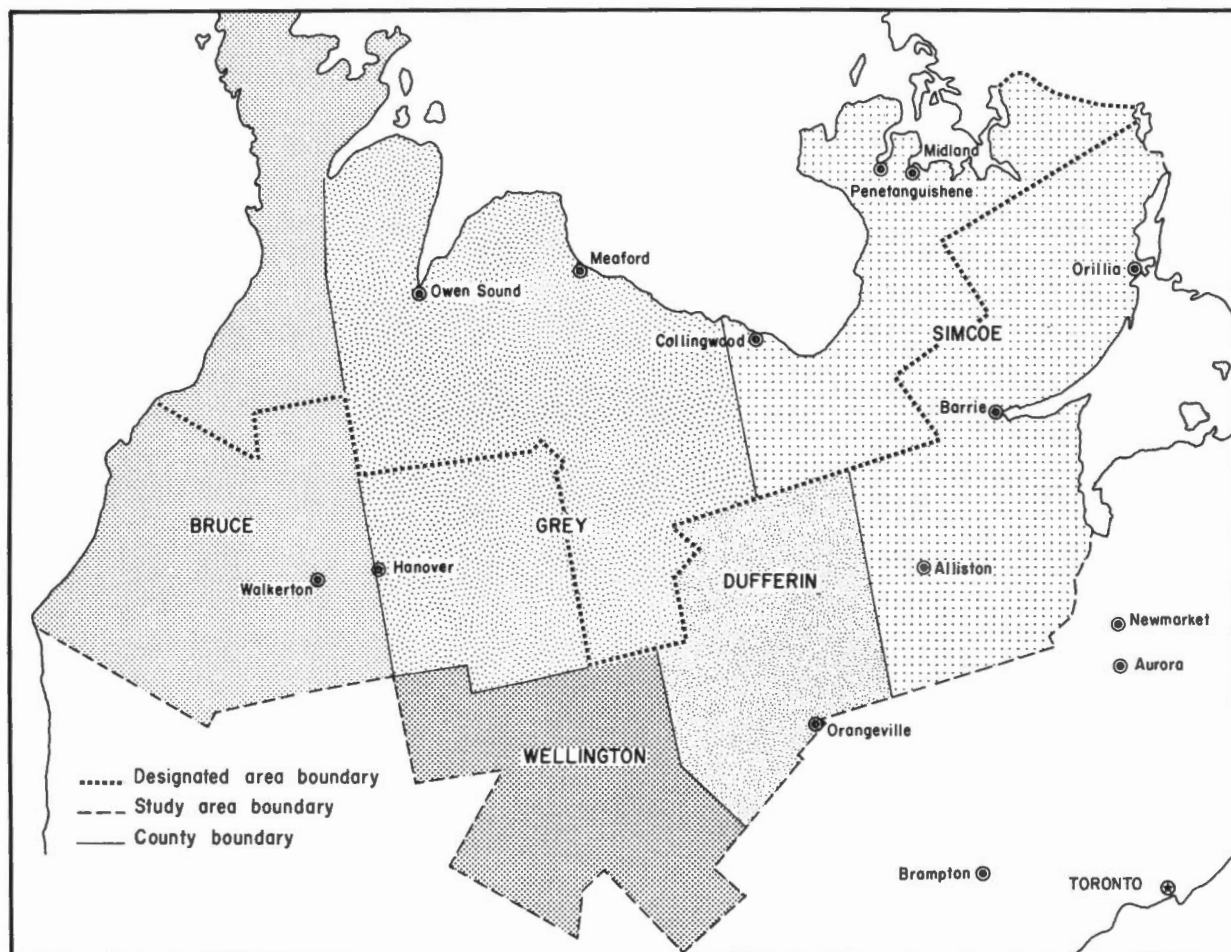


FIGURE 1.2 Counties in the study area.

### Analytical models

The basic assessment of the primary and secondary economic impact of the new and expanded ADA industries is undertaken in both descriptive and quantitative terms. The descriptive part of the analysis is important for in many instances the necessary data input for mathematical models of change is impossible to obtain. The quantitative part of the analysis involves a selection of models pertaining to an estimation of the employment multiplier effect of the ADA scheme and the linking of the impact of this scheme to changes in the tertiary sector of economic activity.

#### The Multiplier model

Probably the most sophisticated approach to the study of inter-industry multipliers is inter-regional intersectoral input-output analysis. A partial attempt at such an analysis is undertaken in this study though limitations of the data and the relatively small number of firms

involved (405 in 1967) generate a large error term in the input-output multiplier projections. It is interesting in this context to note Meyer's comment concerning input-output analysis(4).

"preoccupations with the empirical detail may lead to an oversight of importance . . . that . . . leads to grossly inaccurate results . . . Still this is not an intrinsic shortcoming of the model as such . . . [but] a question of what constitutes a proper allocation of resources in regional analysis . . ."

Given these considerations the multiplier estimates in this study are based on a simple model incorporating features of Hansen and Tiebout's intersectoral flow model of the Californian economy(5), and the well-known basic-nonbasic model(6).

The Hansen and Tiebout intersectoral flow model can be stated as

$$M_i = E_i + \sum_{j=1}^n E_{ij} + \sum_{k=1}^m E_{ik} \quad (\text{Eq. 1.1})$$

where,  $j =$  industries  $1,2,3,\dots,n$ ;  
 $k =$  final demand sectors  $1,2,3,\dots,m$ ;  
 $M_i =$  direct and indirect employment generated by induced industry  $i$ ;  
 $E_i =$  direct induced employment in industry  $i$ ;  
 $E_{ij} =$  indirect induced employment due to inter-industry flows;  
 $E_{ik} =$  indirect employment due to the final demand impact of industry  $i$  on final demand sector  $k$ .

The multiplier effect is therefore  $M_i/E_i$ .

For the purposes of this analysis, the form of the Hansen and Tiebout model is modified and expressed with reference to the designated area as

$$M_E = E_D + E_L + E_F \quad (\text{Eq. 1.2})$$

where,  $M_E =$  total ADA induced employment;  
 $E_D =$  direct ADA induced employment;  
 $E_L =$  indirect induced employment due to inter-industry flows generated by ADA;  
 $E_F =$  indirect induced employment generated by ADA through the final demand impact.

Much of the following analysis is concerned with obtaining estimates for each of the symbols in Equation 1.2.

#### Cross-sectional models concerning the ADA impact on settlements

One method of assessing the impact of the ADA program on service structure and tertiary employment is to determine the theoretical-empirical relationship between manufacturing employment, the wage-bill from manufacturing, and several measures of tertiary economic activity and structure. The theory concerning the spatial distribution and allocation of tertiary economic activities is fairly well developed, and has been empirically tested in many different parts of the world(7). The results of this research indicate that the allocation of tertiary activities between settlements is very much related to the population size of the settlement. Thus it will be postulated that within the study area the range of business types ( $B_i$ ) is positively related to the population size ( $P_i$ ) of the settlement,

$$(B_i) = \alpha(P_i) \quad (\text{Eq. 1.3})$$

there being  $n$  settlements within the area ( $i = 1,2,3,\dots,n$ ); that the number of business and service establishments ( $E_i$ ) in the settlement is also related to the population size of the settlement,

$$(E_i) = \beta(P_i) \quad (\text{Eq. 1.4})$$

and that the number of establishments of the  $B^{\text{th}}$  business type in the  $i^{\text{th}}$  community ( ${}_B E_i$ ) is also related to settlement size,

$$({}_B E_i) = \lambda(P_i) \quad (\text{Eq. 1.5})$$

From these equations it is also reasonable to postulate that the dollar value of retail sales ( $RS_i$ ) in a settlement is related to the size of the settlement,

$$(RS_i) = \pi(P_i) \quad (\text{Eq. 1.6})$$

and that the employment in tertiary activities is also related to the size of the settlement,

$$(TE_i) = \psi(P_i) \quad (\text{Eq. 1.7})$$

The above theoretic and empirically based system of equations can be linked to changes in the wage-bill from manufacturing ( $TWM_i$ ) in a settlement, and to changes in the manufacturing labor force ( $ML_i$ ) in a settlement, by postulating that

$$P_i = \omega(TWM_i) \quad (\text{Eq. 1.8})$$

$$P_i = \delta(ML_i) \quad (\text{Eq. 1.9})$$

Thus the equations suggest that the population of a settlement increases if the wage-bill from manufacturing labor force increases. Conversely, a decline in manufacturing wage-bill and labor force will result in a decline in settlement population.

The equations outlined above are linked into a system with respect to ADA induced industrial employment by empirically establishing their validity in the study area for a number of time periods, and then using the estimated parameters for 1964 to determine the effect of these ADA induced changes in each settlement. The system of equations is outlined diagrammatically in Figure 1.3, where the arrowheads point to the dependent variables. Thus the research interpretation that will be given to the equations is that changes in the independent variables cause changes in the dependent variables.

#### Sources of data

Data for the analysis have been obtained from numerous sources, particularly the Dominion Bureau of Statistics (published and unpublished information), the Ontario Department of Industrial Safety, Toronto, and the Community Planning Branch of the Department of Municipal Affairs, Ontario. A great deal of information

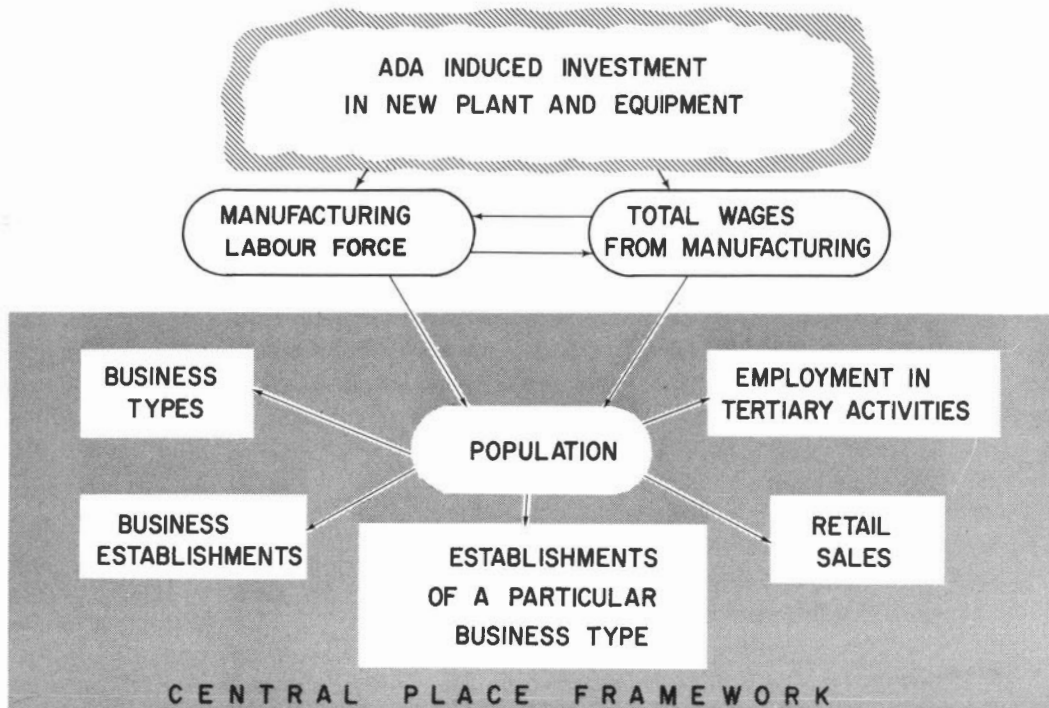


FIGURE 1.3 Model of impact of ADA program on tertiary structure and employment.

has also been obtained from direct interviewing, and office compilations from secondary sources.

#### The industrial questionnaire

Data concerning industrial structure and employment as of July-August 1967 have been obtained through a questionnaire submitted to all manufacturing establishments in the study area. This questionnaire was drafted on the basis of experience gained from previous industry interviews in England and Canada(8). The basic purpose of the questionnaire is to obtain information concerning employment, investment, and raw material commodity flows. The questionnaire and data coding descriptions are attached as Appendices I and II, and will be discussed together(9).

#### Designation data

The first section of the questionnaire (Appendix I, section I) is designed to provide a frame of reference against which all the succeeding quantitative and qualitative information can be classified. The plant is classified as a branch or subsidiary (col. 6), by its date of establishment (cols. 26-28), and by five-digit SIC industry code (cols. 29-33). Much of the designation data are designed to provide information regarding the current location of the plant (cols. 7-21), its previous location (cols. 22-23), or the location of its parent company

(cols. 24-25). These field names are listed in Appendix II. The six-digit grid reference code is particularly important for it locates each plant within a one kilometre square grid cell, and therefore provides a means by which information can be aggregated to any spatial unit(9).

#### Site and plant characteristics

The information under this heading (Appendix I, section II) is designed to provide data on the physical size of factories (cols. 34-37, 41-43) and the amount of investment represented by their buildings and equipment (cols. 50-57). This information has been obtained for a number of reasons, including use as surrogates for plant capacity. Previous experience has indicated that direct questions concerning capacity elicit little or no meaningful response from plant managers, but that those concerning size and investment do(10). Furthermore, these measures are of great value by themselves. Questions have also been asked to ascertain the growth of the plant (cols. 38-40, 44-49).

#### Employment and labour characteristics

This is one of the most important sections of the questionnaire (Appendix I, section III). Data are collected for numbers of workers and for wage rates, classified by males and females and by various grades of

skill, for 1964 (those in existence at that date), and 1967 (cols. 85-144, 165-217). For salaried staff in the administrative, clerical and technical grades an average annual wage was requested. Further information has been obtained regarding the seasonal fluctuation in employment demands (col. 226), prospective expansion in numbers employed (cols. 245-247), and the experiences of manufacturers with regard to the quality of local labor (cols. 258-261) and the difficulty in recruiting it (cols. 255-258).

The classification of skills provided a number of problems and depended very much on the opinion of the interviewee (usually the plant manager) as to whether their workers were skilled, semi-skilled or unskilled. Analysis of the data leads to the conclusion that the information contained in the skill categories must be interpreted with a high degree of caution. Nevertheless, a range of wage rates throughout the factory has been obtained, giving some indication of the variation of wage rates around the average factory figure.

#### *Input-output information*

This is by far the most difficult section of the questionnaire (Appendix I, section VII) as far as the maintenance of quality and consistency of responses is concerned. The material obtained makes detailed analysis of commodity flows in the study area difficult, but the coding has been arranged to make as much use as possible of the information received. Interviewers were briefed, in the case of outputs, to list the part-processed and finished products giving their percentage of the total value of outputs (cols. 325-330) for the last complete financial year. Similarly, information has been obtained concerning the total value of non-labor inputs (cols. 349-354) and the total value of power and fuel inputs (cols. 355-360).

In coding the origins of inputs and destinations of outputs six categories have been selected. These are: (1) the local area (i.e., the study area), (2) Metropolitan Toronto, (3) the rest of Ontario, (4) the rest of Canada, (5) the United States of America, (6) other areas. These categories have been selected to make the maximum use of the information received. Figures in these categories are expressed as percentages of the total.

For many firms in the study area even the kind of information described above is not directly available. This is particularly true of small firms, and branch plants of a distant parent company, whose accounting and buying procedures are conducted centrally. A small number of firms indicated that their output was distributed in accordance with total population. To make use of this kind of information 'retail sales potential' for Canada with respect to the study area has been calculated.

Retail sales potential takes the total value of retail sales for a centre of consumption as an indication of its likely purchasing power, weighting this inversely with some function of distance (as a surrogate for transport costs) between it and the distributing centre (assumed to be Collingwood) to arrive at an indication of the proportion of outputs allocated to it(12). The percentage of total outputs allocated to Toronto, for instance, using this method, seems close to that expected intuitively (24%). Furthermore, there appears to be general accordance between the computed values and those actually reported by firms whose output falls into the 'distributed by population' category.

#### *The 1967 and 1964 manufacturing establishment data files*

After screening and cross-checking every questionnaire, 405 of the 426 companies interviewed were considered suitable for the analysis. Those excluded were either considered not to be manufacturing, or were too small to be considered (only one employee), or were not in operation. Of these 405 companies, 160 are in the designated area and 245 in the peripheral area. Of the 405 questionnaires, 57% are complete in *all* details, 53% being complete in every respect for the designated area and 60% for the peripheral area. This is a highly satisfactory rate of return considering the detailed nature of the questionnaire submitted.

In terms of the most important questions, the response rates are very much higher. Table 1.1 indicates the response rate for the designated area and the peripheral area in terms of fourteen types of question. As can be observed, the employment questions for both 1964 and 1967 have an extremely high response rate, well over 90% in all respects. However, for those firms unable to provide their 1964 employment totals, *Scott's Directories*(13) were used to obtain estimates. In addition, employment estimates have been obtained for firms in the study area operating in 1964 but closed prior to 1967. These estimates are made from information supplied by the Ontario Department of Labour, and supplemented by *Scott's Directories*. Thus the file of industrial employment is, for the purpose of this study, complete for 1964.

Other important aspects of the data file necessary for the study are the geographic distribution of the inputs and outputs, and the payroll. In the former case, the information has been obtained for a remarkably high proportion of the firms interviewed for 1967. In the latter case, 88% of the companies gave either exact payroll figures or very close estimates. The worst response rate relates to fuel and power inputs. However, in general, the response rates with respect to these vital questions are extremely satisfactory.



Table 1.1  
Response rates for various questions by firm

Type of question	Designated area (per cent)	Peripheral area (per cent)
Total male employees 1964	97	95
Total female employees 1964	97	95
Total male employees 1967	100	99
Total female employees 1967	100	99
Total salaried staff 1964	96	94
Total salaried staff 1967	100	98
Total employment 1964	92	94
Total employment 1967	100	98
Payroll	88	88
Total value of outputs	85	87
Distribution of outputs	93	93
Value of non-labor inputs	80	78
Value of fuel and power inputs	72	74
Distribution of inputs	93	94

### The tertiary structure of towns

A second block of data used in the report, not supplied by any government department, concerns the service structure of towns. To ascertain the changes in the tertiary sector of economic activity between 1964 and 1967, and also to provide some necessary input data for the symbolic models described in the previous section, a 'complete as possible' inventory of tertiary activities in towns and settlements in the study area was undertaken.

The inventory has been compiled from *Bell Telephone Directories* for 1964 and 1967(14), and although a few activities are noticeably absent from this source (for example, men's barbershops), nevertheless they are one of the few disaggregated sources available to the user. The data have been coded by municipality and four

digit code (modified SIC code), as detailed in Appendix IV. The code is based on the SIC code, which usually comprises the first three digits, but the fourth digit allows much more detailed information.

### Outline of the study

Each chapter will be concerned with providing information that can be used either as input into the multiplier models or contextual information within which the multiplier effect can be interpreted. The present chapter (Chapter I) defines the study area, the basic models, and the major sources of data being used in the ensuing analysis.

Chapter II is basically concerned with providing contextual information, by comparing the economic performance of the designated area with the peripheral area, and the study area with the rest of Canada over the past few decades. This chapter will indicate the direction of economic trends in the designated area that the ADA program sought to change. Chapter III concentrates upon a detailed analysis of the firms receiving ADA assistance, and the direct effects of this assistance on investment, employment, wage-bill and local taxation. Chapter IV carries the discussion further by analyzing the indirect impact of this assistance on other firms and the local factor and product markets. Chapter V examines the general impact of the ADA program on industrial structure and the spatial distribution of manufacturing employment in the designated area. Chapter VI carries this discussion a little further by intensively analyzing the changes that have taken place in the service structure of towns in the study area, and attempts to indicate further changes that will take place. The employment estimates and trends indicated in Chapters II-VI can then be used in the final chapter (Chapter VII) to calculate an employment multiplier for the designated area as a whole.



## Economic trends in the study area prior to 1964

In this chapter the concern is to pinpoint briefly those trends of an economic nature, particularly with respect to employment in manufacturing, that are characteristic of the study area. Unemployment and low median family income were the chief reasons for the listing of the designated area as suitable for receipt of industrial incentives by the Area Development Agency in 1965. An overview of conditions up to 1964 will therefore describe the fundamental elements in the economic situation which the policies of the Area Development Agency sought to change.

### General economic trends

During the past one hundred years the study area has changed from being a region of active economic development to one of slow growth. Although it is difficult to determine exactly when the peak of economic growth in the area was attained, it has been suggested that the slow-down occurred around 1911(1). This slow-down in growth was due in part to a decline in two of the traditional staple industries in the area – the lumber and fishing industries, and to changing production characteristics in a third – agriculture.

### Staple industries

#### *Lumbering*

The lumber industry declined rapidly after 1911. In 1909 the output of sawmills in Midland, Penetanguishene, and Owen Sound amounted to nearly 100 million board feet, whereas in 1964 the output of sawn lumber in the counties of Bruce, Grey and Simcoe, was approximately 45 million board feet. This reflects the decline in availability of local timber, and implies increasing raw material costs for the wood using industries.

#### *Fishing*

The decline in the fishing industry apparently set in at a slightly earlier date. In 1891 the total production of

fish from the waters within and bordering the counties of Bruce, Grey, and Simcoe amounted to 4.5 million pounds, but by 1910 the catch was only 1.3 million pounds. There has been a further decline during the past few decades, and since 1940 the average annual catch has been less than 400,000 pounds.

#### *Agriculture*

The growth and expansion of Metropolitan Toronto, together with the improved highway transport system, has resulted in a gradual change in the type of farming in the area. The raising of livestock has long been the basic agricultural activity, with 85% of the total revenue coming from livestock farming in the past two decades compared with 70% for the province as a whole. The particular emphasis, since 1941, has been on the production of beef cattle, but milk production is gradually becoming more and more important. This latter trend is particularly evident in Simcoe County where the production of fluid milk has replaced beef cattle as the most important agricultural revenue earner in the last few years. Much of the fluid milk is consumed by the Metropolitan Toronto market, which was made accessible to the Simcoe County producers by the completion of Highway 400 in 1956. As metropolitan and suburban Toronto expand and transportation facilities further improve, this change in emphasis will probably be experienced in Grey and Bruce counties as well.

There is a further trend for larger farms (Table 2.1), which means a decreasing number of farm operations, a greater use of machinery (particularly on the modern dairy farms), and for an increasing importance of cash crops to feed the beef and dairy cattle. These changes have resulted in a displacement of workers from farms and a great deal of rural poverty. Furthermore, the farmers in the area are not as prosperous as those immediately to the south, though they are more prosperous than those in eastern Ontario. In 1961, the average income per farm amounted to \$5,895 in Bruce,

\$5,408 in Simcoe, and \$4,244 in Grey, compared to a \$7,898 average in the counties of Huron, Perth and Waterloo, and a \$3,970 average for farms in eastern Ontario.

**Population and income**

Data concerning population change and age distribution are available only by county for the area being discussed. The counties of Bruce, Grey and Simcoe therefore, will be taken as characteristic of the study area. From Table 2.2 it is clear that there has been a wide variety of change in population throughout the three counties. There has been very little population increase in the counties of Bruce and Grey, but a much larger increase in the eastern section of the study area, represented here by Simcoe County. Although the three counties all had a population increase between 1931 and 1961 that was less than that for Ontario and Canada as a whole, the population increase for Simcoe County was only seven percentage points less than that for Canada.

*Age distribution*

The age distribution pyramids (Figure 2.1) reveal the expected result of such variations in population growth. In both 1931 and 1961 there is a much heavier concentration of people in the 45 and over age groups in the counties of Bruce and Grey. In Simcoe County a similar concentration is evident in 1931, but not at all evident in 1961 when the population age structure is comparable to that for Canada as a whole. As the proportion of population in the under 15 age group in all counties in both time periods is similar to that for Ontario as a whole, it can be inferred that there has been considerable out-migration from the area, particularly from the counties of Bruce and Grey.

*Non-farm family income*

These within-study-area, east-west regional distinctions are also evident in the non-farm family income distributions for 1961 presented graphically in Figure 2.2. If a \$3,000 per year family income is taken as the upper limit of poverty in 1961, then 39.4% of the non-farm families in Bruce County, 33.0% in Grey County, and 25.7% in Simcoe County, were below this level; whereas 23.2% of the families in Canada and only 18% of the families in Ontario were below this level. Furthermore, the three counties that comprise much of the study area are all poorer throughout the entire family income distribution than those for Ontario and Canada.

**Employment and unemployment**

The total employment estimates presented in Table 2.3 indicate that the magnitude of employment in the

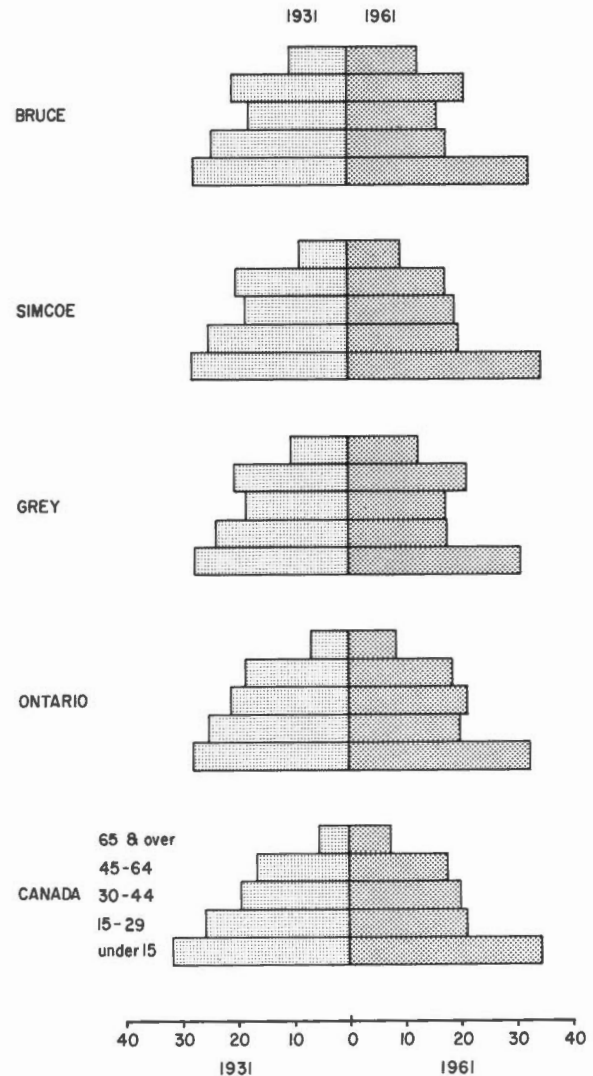


FIGURE 2.1 Population structure, by county, 1931 and 1961.

designated area did not change at all between 1961 and 1964. There was, if anything, a downswing in total employment followed by a revival, so that by 1964 the employment figure is exactly the same as it was in 1961. The geographical breakdown by Canada Manpower Centre indicates that employment in the Owen Sound CMC is largest, but that there was a small decrease between 1961 and 1964. Employment in the Midland CMC increased very slightly, and in the Collingwood CMC employment remained about the same.

The unemployment ratios presented in Table 2.4 suggest a very high unemployment rate in 1961, which decreased two to three percentage points between 1961 and 1964. Ratios based on unplaced applicants however, can be very misleading, for it is not uncommon for people to apply for jobs in the hope of bettering their

Table 2.1  
Farm holdings, classified by farm size, as percentages of total number of farms

County	Date	Size in acres					
		1-69	70-129	130-239	240-399	400-759	760 +
Bruce	1951	11.7	37.7	34.5	12.2	3.6	0.3
	1956	11.1	34.9	36.5	12.7	4.1	0.6
	1961	10.8	31.8	36.7	14.5	5.3	1.0
	1966	10.1	28.1	35.7	18.4	6.3	1.2
Grey	1951	12.4	34.8	36.9	13.2	2.5	0.1
	1956	13.2	34.2	36.8	13.0	2.6	0.1
	1961	11.9	31.5	38.2	15.2	3.0	0.2
	1966	11.1	30.1	37.3	16.7	4.2	0.3
Simcoe	1951	20.0	38.1	31.0	9.0	1.7	0.1
	1956	20.7	36.8	30.6	9.8	1.9	0.1
	1961	18.3	34.8	32.6	11.8	2.2	0.3
	1966	18.8	33.1	31.8	12.7	3.1	0.5
Ontario	1951	22.4	35.7	29.1	9.5	3.0	0.3
	1956	22.5	34.8	29.2	9.9	3.1	0.4
	1961	20.9	32.7	30.0	11.7	4.1	0.6
	1966	21.7	29.7	29.4	13.4	5.0	0.8

Sources: Dominion Bureau of Statistics, Ottawa; Economic Survey, Ontario Department of Economics and Development, Toronto.

Table 2.2  
Age composition of the population, and population increase 1931 to 1961

Spatial unit	Year	Age in years					Total	Per cent population increase 1931-1961
		Under 15	15-29	30-44	45-64	65 and over		
Bruce County	1931	11,565	10,174	7,384	8,680	4,483	42,286	1.8
	1961	13,954	7,459	7,036	9,058	5,529	43,036	
Grey County	1931	15,973	13,640	10,464	11,737	5,885	57,699	7.5
	1961	19,098	11,040	10,851	13,238	7,778	62,005	
Simcoe County	1931	23,593	20,976	15,244	16,604	7,250	83,667	68.8
	1961	48,544	27,954	26,868	24,772	13,133	141,271	
Province of Ontario	1931	958,868	874,747	727,327	635,776	234,965	3,431,683	81.7
	1961	2,007,749	1,246,500	1,326,388	1,147,382	508,073	6,236,092	
Dominion of Canada	1931	3,281,215	2,737,057	2,043,398	1,744,514	570,602	10,376,786	75.8
	1961	6,191,922	3,825,502	3,661,695	3,167,974	1,391,154	18,238,247	

Source: Dominion Bureau of Statistics, Ottawa.

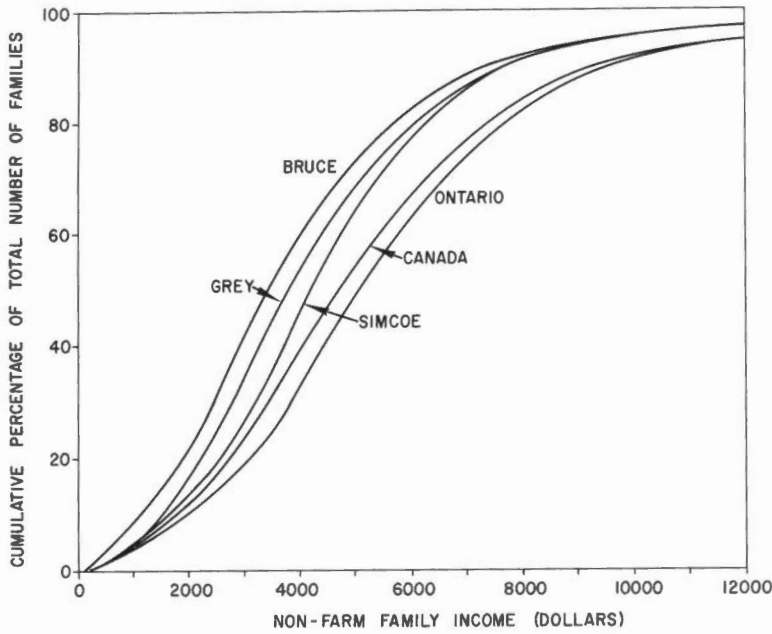


FIGURE 2.2

Non-farm family income, by county, 1961.

Table 2.3

Total employment estimates\*, designated area, 1961, 1963 and 1964

CMC	1961	1963	1964
Collingwood	6,706	6,471	6,705
Midland	8,235	8,118	8,353
Owen Sound	15,647	15,176	15,529
Totals	30,588	29,765	30,587

\*Total employment estimates have been calculated by the authors by assuming that paid workers comprise 85% of total employment in the designated area. This proportion is based on the fact that managerial, professional and technical workers accounted for approximately 15% of the work-force in the counties of Grey, Bruce and Simcoe in 1961, compared with 18% for Canada as a whole. Paid worker estimates refer directly to hourly paid employment, and exclude many salaried workers and the self-employed.

Source: paid worker estimates from the Area Development Agency, Department of Industry, Ottawa.

present position. As a consequence, the unemployment ratios may be inflated.

A better indicator of unemployment may well be to take the ratio of unemployment insurance payments and the number of paid workers. This, of course, is only possible where the UIC areas coincide with CMC zones. Happily, this is the case in the designated area up to 1966. In Table 2.5 unemployment indices based on this ratio indicate that unemployment payments per paid worker declined considerably between 1961 and 1964.

Table 2.4

Unemployment ratios\* for the designated area, 1961, 1963 and 1964, by CMC

CMC	1961	1963	1964
Midland	12.8	12.2	10.2
Collingwood	13.9	12.2	10.6
Owen Sound	11.9	10.2	8.2

\*The unemployment ratio is derived by calculating the number of unplaced applicants as a percentage of the estimated number of paid workers.

Source: the Area Development Agency, Ottawa; the *Unplaced Applicant* series is obtained from NES records by the Department of Labour; and the *Employment* series is derived from the UIC *Hirings and Separations* forms processed by DBS.

The decline was greatest in Collingwood and Owen Sound, and least in Midland. However, the indices for each CMC are greater than for Canada as a whole, and are considerably greater than for Ontario at each time period. The margin of difference is greater in 1961 than in 1964, indicating that the unemployment situation in the designated area was beginning to be similar to that for Canada as a whole by 1964. Compared with Ontario, however, the unemployment situation in the designated area was still poor in 1964.

### Employment in manufacturing

This apparent stagnation of the economy of the southern Georgian Bay area has been related in large part

Table 2.5  
Unemployment indices\* for the designated area,  
1961, 1963 and 1964, by CMC

CMC	1961	1963	1964
Midland	107.8	103.3	86.3
Collingwood	109.4	88.1	71.8
Owen Sound	91.1	73.6	57.3
Ontario	65.9	45.9	38.0
Canada	71.4	62.1	56.7

\*The unemployment indices have been calculated by the authors as the ratio of Unemployment Insurance Commission payments (in dollars) to the estimated total employment. Thus the indices are not in terms of constant dollar values.

Source: Table 2.3: Unemployment insurance totals provided through the courtesy of D.C. Cuddy, Director, Claims and Benefits, Unemployment Insurance Commission, Ottawa.

Table 2.6  
Employment in manufacturing industries, designated  
area and peripheral area, 1957, 1961 and 1964

Zone	1957	1961	1964
Designated area	7,333	7,042	7,687
Peripheral area	9,398	10,085	13,024
Totals	16,731	17,127	20,711

Source: for 1957 and 1961 the data have been obtained through the courtesy of D.G. Campbell, Assistant Director, Economic Statistics Branch, DBS, Ottawa. The data for 1964 have been calculated from the 1964 data file by industrial establishment assembled by the authors. This latter figure compares very well with the estimates for 1965 compiled by DBS, which, for the designated area are 7,767, and for the peripheral area 12,915, giving a total of 20,682.

Table 2.7  
Manufacturing employment in municipalities  
1957, 1961 and 1965, peripheral area

Municipality	1957	1961	1965
Chesley	285	222	237
Kincardine	367	288	212
Mildmay	94	83	61
Walkerton	428	627	750
Orangeville	169	177	626
Hanover	1,021	979	1,135
Alliston	235	345	481
Barrie	1,839	2,335	3,412
Orillia	2,456	2,134	2,577
Mount Forest	253	302	210

Source: data supplied through the courtesy of D.G. Campbell, Assistant Director, Manufacturing and Primary Industries Division, Economic Statistics Branch, DBS, Ottawa.

Table 2.8  
Manufacturing employment in municipalities  
1957, 1961 and 1965, designated area

Municipality	1957	1961	1965
Southampton	318	286	239
Meaford	460	589	684
Owen Sound	2,673	2,080	2,122
Collingwood	1,480	1,434	1,559
Midland	1,151	1,322	1,888
Penetanguishene	360	423	287

Source: data supplied through the courtesy of D.G. Campbell, Assistant Director, Manufacturing and Primary Industries Division, Economic Statistics Branch, DBS, Ottawa.

Table 2.9  
Employment in the study area by major group, 1964

Major group (Industry)	1964	
	Employment	Per cent
01 Food and beverage	2,456	11.9
03 Rubber	402	1.9
04 Leather	1,162	5.6
05 Textile	389	1.9
07 Clothing	407	2.0
08 Wood	2,503	12.1
09 Furniture and fixtures	2,064	10.0
10 Paper and allied	145	0.7
11 Printing, publishing and allied	834	4.0
12 Primary metal	485	2.3
13 Metal fabricating (except machinery and transportation equipment)	1,904	9.2
14 Machinery (except electrical)	2,335	11.3
15 Transportation equipment	1,148	5.5
16 Electrical products	2,230	10.8
17 Non-metallic mineral products	420	2.0
19 Chemical and chemical products	194	0.9
20 Miscellaneous manufacturing	1,633	7.9
Total	20,711	

Source: 1964 data file of manufacturing establishments compiled by the authors.

by Silva(2) to the failure of manufacturing to grow. This lack of growth is particularly evident in the designated area where employment in the manufacturing industries increased by only 4.8% between 1957 and 1964 (Table 2.6). This contrasts markedly with the peripheral area

Table 2.10  
Employment in the peripheral and designated areas by major group, 1964

Major group (Industry)	Peripheral area		Designated area	
	Employment	Per cent	Employment	Per cent
01 Food and beverage	1,818	14.0	638	8.3
03 Rubber	402	3.1	0	0.0
04 Leather	547	4.2	615	8.0
05 Textile	9	0.1	380	4.9
07 Clothing	135	1.0	272	3.5
08 Wood	1,516	11.6	987	12.8
09 Furniture and fixtures	1,605	12.3	459	6.0
10 Paper and allied	91	0.7	54	0.7
11 Printing, publishing and allied	335	2.6	499	6.5
12 Primary metal	485	3.7	0	0.0
13 Metal fabricating (except machinery and transportation equipment)	877	6.7	1,027	13.4
14 Machinery (except electrical)	1,643	12.6	692	9.0
15 Transportation equipment	121	0.9	1,027	13.4
16 Electrical products	2,019	15.6	211	2.7
17 Non-metallic mineral products	237	1.8	183	2.4
19 Chemical and chemical products	182	1.4	12	0.2
20 Miscellaneous manufacturing	1,002	7.7	631	8.2
Totals	13,024		7,687	

Source: 1964 data file of manufacturing establishments compiled by the authors.

Table 2.11  
Employment in the designated area by three-digit code, 1964

Major group	Three-digit code	1964		Major group	Three-digit code	1964	
		Employment	Per cent			Employment	Per cent
(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
01	101	8	0.10	13	303	18	0.23
	105	123	1.60		304	267	3.47
	112	163	2.12		305	80	1.04
	123	97	1.26		306	244	3.17
	124	159	2.07		308	33	0.43
	129	17	0.22		309	385	5.01
	139	3	0.04				
	141	68	0.88		14	311	0
			315	692		9.0	
03	169	0	0.0	15	324	11	0.14
04	174	570	7.42		325	0	0.0
	179	45	0.59		327	964	12.54
					328	52	0.68
05	197	169	2.20	16	331	46	0.60
	201	113	1.47		334	0	0.0
	216	0	0.0		335	104	1.35
	229	98	1.27		336	61	0.79
07	243	102	1.33	17	347	48	0.62
	244	139	1.81		348	9	0.13
	245	31	0.40		351	105	1.37
08	251	67	0.87		353	21	0.27
	252	171	2.22		356	0	0.0
	254	220	2.86	18	369	0	0.0
	256	71	0.92				
	259	458	5.96		19	375	12
09	261	444	5.78	20		381	285
	266	15	0.20	383	126	1.64	
10	273	39	0.51	385	168	2.18	
	274	15	0.20	397	8	0.10	
11	286	99	1.29	399	44	0.57	
	289	400	5.21				
	Total					7,687	

Source: data compiled by the authors from the 1964 data file.

Table 2.12  
Employment in the peripheral area by three-digit code, 1964

Major group (1)	Three-digit code (2)	1964		Major group (1)	Three-digit code (2)	1964		
		Employment (3)	Per cent (4)			Employment (3)	Per cent (4)	
01	101	162	1.24	13	302	3	0.02	
	103	347	2.66		303	21	0.16	
	105	530	4.07		304	247	1.89	
	107	2	0.02		305	66	0.51	
	112	26	0.20		306	130	1.00	
	123	333	2.59		307	106	0.81	
	124	18	0.14		308	58	0.44	
	129	233	1.79		309	246	1.89	
	139	85	0.65		14	311	398	3.05
	141	82	0.63			315	919	7.05
03	163	329	2.52	316		326	2.50	
	169	73	0.56	15	324	26	0.20	
04	172	355	2.72		325	79	0.61	
	174	162	1.24		328	16	0.12	
	179	30	0.23	16	331	708	5.43	
05	221	9	0.07		332	968	7.44	
	07	243	135		1.04	334	149	1.14
		08	251		149	1.14	336	49
252	414		3.18	337	135	1.04		
254	487		3.74	339	10	0.08		
256	96		0.74	17	347	98	0.75	
258	82		0.63		348	48	0.37	
259	288	2.21	351		15	0.12		
09	261	1,418	10.90		353	11	0.08	
	266	187	1.43		355	15	0.12	
	10	273	35	0.27	359	50	0.38	
274		56	0.43	19	372	30	0.23	
11		286	192		1.47	374	9	0.07
		289	143		1.12	377	95	0.73
12		291	373		2.86	378	28	0.21
	296	2	0.02		379	20	0.15	
	297	110	0.84	20	381	304	2.33	
Total					385	7	0.05	
					393	406	3.11	
					397	13	0.10	
				399	272	2.09		
					13,024			

Source: data compiled by the authors from the 1964 data file.



Table 2.13  
Growth industries in Ontario

Actual growth or decline in Canada	0%				12%		26%			
	Decline		Zero or little change				Growth		Rapid growth	
Comp. gain or loss in Ontario with respect to Canada										
Great comparative loss	398		251 295				259		213 348	
-9.0% Minor comparative loss	212 231	287 296	123 129 288	307 376			147 239 303	311	292 324	
-4.5% Little positive or negative change			101 105 112 124 139 141 193 197 243	244 254 258 261 271 273 286 291 297	304 318 332 338 341 353 356 374 378	379 381 382 383 393 397		151 221 266 274 298 301	305 309 316 336 347 399	216 306 308 315 323
+4.0% Moderate comparative gain	128 143 174	175 249 343	365	103 131 153	179 256 272	294 302 351	373 375	264 369 372	335 359 385	
+13.0% Great comparative gain	321 334 384		111 268 355				229 327 331			
	X		VIII				V		III II I	

Source: classification by the authors from data described in Appendix V.

Table 2.14  
Employment in growth industries in the study area, 1964

Growth group	Designated area		Peripheral area	
	Employment	Per cent	Employment	Per cent
I	0	0.0	0	0.0
II	272	8.4	57	1.5
III	969	29.9	1,107	28.4
IV	11	0.3	26	0.7
V	1,108	34.2	708	18.2
VI	0	0.0	30	0.8
VII	648	20.0	1,309	33.6
VIII	0	0.0	15	0.4
IX	233	7.2	491	12.6
X	0	0.0	149	3.8
Totals	3,241		3,892	

Source: data compiled by the authors from the 1964 data file.

where manufacturing employment increased 38.6% in the same period.

### *Spatial variations in growth in employment*

The great increase in employment has not, however, been spread evenly throughout the peripheral area. In Table 2.7, where manufacturing employment is listed by municipality for the peripheral area, marked increases in manufacturing employment can be noted in Barrie and Orangeville, while the remaining municipalities have changed very little. Table 2.8 indicates that the increase in employment in the designated area in the 1957-65 period took place largely in Midland, whereas Owen Sound definitely decreased in manufacturing employment.

It is interesting that nearly 60% of the increase in manufacturing employment between 1957 and 1964 in the study area occurred in Midland and Barrie. Both of these municipalities are located in the eastern part of the study area close to Highway 400. It is, perhaps, significant that many of the larger plants in Barrie and Midland have begun operation since the completion of this transport artery. To quote Silva(3).

“In 1965, 45% of the employees in manufacturing in Barrie, and 67% in Midland, were in industries that started after 1955, in comparison to 19% in Hanover and less than 10% in Walkerton and Owen Sound”. This is undoubtedly due to the greater accessibility of Barrie and Midland provided by Highway 400, which has brought these municipalities to within sixty minutes trucking time from Toronto. This growth can be considered to be an example of the “. . . centrifugal spread effects of expansionary momentum from centres of economic expansion to other regions”(4), whereas the decline of Owen Sound might well be an example of the “backwash” effect.

### *Industrial structure*

In this section industrial structure is examined both by major group (two-digit code) and three-digit code, or sub-class, of each major industrial group. The major groups and sub-classes of the Standard Industrial Classification are listed in Appendix III.

In 1964, 56% of the total employment in manufacturing in the study area was occupied within five major manufacturing groups (Table 2.9). These were

- 01 Food and beverage industries (11.9%),
- 08 Wood industries (12.1%),
- 09 Furniture and fixture industries (10.0%),
- 14 Machinery industries (except electrical machinery) (11.3%), and
- 16 Electrical products industries (10.8%).

Of course, the wood, furniture and fixture industries have traditionally played an important part in the employment picture of the southern Georgian Bay area. In 1957 these two major groups employed 24.5% of the persons occupied in the manufacturing industries, and by 1964 there had been very little change as 22.1% were still employed in these two major industrial groups(5).

The major industrial groups listed above are not, however, the major employers in *both* the designated area and the peripheral area. Table 2.10 shows that employment in the peripheral area is much more concentrated in a few industrial groups than in the designated area. In fact, in the peripheral area in 1964 over 66% of the total manufacturing employment was concentrated in

- 01 Food and beverage industries (14.0%),
- 08 Wood industries (11.6%),
- 09 Furniture and fixture industries (12.3%),
- 14 Machinery industries (except electrical machinery) (12.6%), and
- 16 Electrical products industries (15.6%).

In the designated area employment was more evenly spread among all the major groups, the only concentrations being found in

- 08 Wood industries (12.8%),
- 13 Metal fabricating industries (except machinery and transportation equipment) (13.4%) and
- 15 Transportation equipment industries (13.4%).

Thus the only major industrial group that is an important employer in 1964 in both the peripheral area and the designated area is the wood industry. It is important to note, however, that the dominant industrial sub-group in the designated area is the transportation equipment industry, which, as can be seen from Table 2.11 consists primarily of shipbuilding and repair (15327) employing 12.54% of the persons working in manufacturing industries in that zone. In the peripheral area, the dominant industrial sub-group is the household furniture industry (09261) employing 10.9% of the persons working in manufacturing industries (Table 2.12).

### **Growth industries in the study area**

In Appendix V, growth industries in the Province of Ontario with respect to Canada have been defined for each industrial sub-group for the period 1961-1964. Those sub-groups defined as “growth” industries are listed by three-digit code below and to the right of the heavy line in Table 2.13. There are ten groups of growth industries defined in this analysis:

*Group I:* Over 26% growth in employment in Canada between 1961 and 1964, and great comparative

growth in Ontario. No industries are classified in this group in Ontario.

*Group II:* Over 26% growth in employment in Canada and a moderate comparative gain (concentration) between 1961 and 1964 in Ontario.

*Group III:* Over 26% growth in employment in Canada and little comparative gain or loss in Ontario.

*Group IV:* Over 26% growth in employment in Canada, but the growth in Ontario is comparatively not as great as in the country as a whole.

*Group V:* Over 12% growth in employment in Canada, but a great comparative gain (i.e. concentration) in Ontario.

*Group VI:* Over 12% growth in employment in Canada, and a moderate comparative growth in Ontario.

*Group VII:* Over 12% growth in employment in Canada, but little comparative gain or loss in Ontario.

*Group VIII:* Less than 12% growth in employment in Canada but great comparative growth in Ontario.

*Group IX:* Less than 12% growth in employment in Canada, but moderate comparative gain in Ontario.

*Group X:* Net decline in Canada as a whole, but great comparative gain in Ontario. Thus, employ-

ment in industries in this group is not only increasing, but exhibiting a great propensity to concentrate, in the province.

Table 2.14 shows that employment in growth industries in the peripheral area in 1964 amounted to 3,892 persons, which comprised 29.6% of the total employment in manufacturing at that date in that zone. But, employment in the designated area in growth industries totalled 3,241 persons, or 42.2% of the total employment at that date in that zone.

Therefore, even though the employment structure of the designated area appears to be much more favourable than the peripheral area, its economy has been much less buoyant. The general economic trends within the study area, and particularly the designated area, indicate that the region in 1964 was relatively poor, with an aging population, a high rate of unemployment, and retaining in its industrial structure a number of traditional industries that are either in decline or bear the seeds of decline (such as shipbuilding and repair). The eastern part of the study area, by 1964, shows signs of change as a result of technological improvements in transportation, but the economy of the western part of the area is stagnant. It is this western zone that forms the greater part of the area designated by the Area Development Agency for industrial development through federal incentives.

### The direct impact of the ADA program

From the commencement of the ADA incentives program in August 1965, until the time of the questionnaire survey in August 1967, thirty-one plants in the southern Georgian Bay area reported that they had made use of the scheme. Of these, eighteen were entirely new to the designated area, two were complete replacements of pre-existing factories destroyed by fire and eleven were established plants undertaking expansion or re-equipment programs. The assisted plants cover a wide spectrum of sizes and types of industry. Twenty-four different classes of industry at the three-digit level are represented, and in size the factories range from a two-man concern to one employing close to 500.

#### The direct impact on capital investment

By May 1968, it is estimated that the scheme has directly or indirectly generated more than \$80 million of investment in new buildings and equipment within the designated area. The new factories account for \$77 million of this. The remaining \$3 million is accredited to those established plants using it to expand their facilities. The new factory figure represents the total estimated replacement cost of buildings and equipment(1) in the eighteen plants whose decision to locate in the region was primarily the result of the operation of the ADA scheme. For those completed by August 1967, the questionnaire response of that date provides the data, while for those completed during the succeeding twelve months, a supplementary survey conducted in May 1968 was the source of information. For those factories using the scheme to extend or re-equip their plants, however, it was necessary to estimate the proportion of their total replacement value of plant and equipment which might be accredited to the impact of the assistance program (2).

#### The concentration of investment in certain industries

Table 3.1 presents the estimates of additional investment in buildings and equipment in more detailed form.

With respect to investment at the survey date, August 1967, only 54.3% of the over-all 1968 figure had been made up by this time, re-emphasizing the somewhat premature nature of the findings in this report. As the 1968 figure may be considered close to the terminal one for induced investment it may be stated that the *findings of this study refer to conditions when the scheme's impact was only a little over half-way to its full magnitude*. During these first two years by far the greatest weight of new investment was concentrated in the communications equipment industry (335)(3). This alone accounted for 58.6% of the total value of buildings and equipment brought in under ADA sponsorship. Other industries accounting for an important share of sponsored investment by this time were rubber (169) and carpet (216) manufacture. Together they accounted for a further 24% by August 1967. The remainder, 18%, was widely scattered among a variety of industries of which motor vehicle parts (325), hardware (306), and miscellaneous machinery (315), were the more important.

During the succeeding twelve months, however, the over-all value of investment and its relative distribution among industry types was significantly changed by the construction of two major units of the glass and glass products industry (356). Both represented major investments in buildings and expensive capital equipment, accounting jointly for \$35 million. Two other factories built in 1967-68 were insignificant by comparison. To the knowledge of the authors only one further plant sponsored under the ADA scheme had not begun construction in the region at the date of the survey and its over-all contribution to the investment figure is likely to be small.

Column 5 of Table 3.1 may therefore be considered a close approximation to the final direct impact of the ADA scheme measured in terms of plant and equipment brought to the region under its aegis. Clearly, the heaviest weight of investment has gone into plant for the communications and glass industries, which between

Table 3.1  
Assisted plants by three-digit code — insured value of equipment and buildings attributable to the ADA program (in \$,000)

Three-digit code	Industry	August 1967		Addition at August 1968	Total	
			%			%
101	Slaughtering and meat	150	0.35		150	0.19
139	Miscellaneous food			600	600	0.75
141	Soft drinks	150	0.35		150	0.19
143	Distilleries			2,500	2,500	3.13
169	Other rubber	5,689	13.13	600	6,289	7.89
197	Wool cloth mills	66	0.15		66	0.08
201	Synthetic textiles			400	400	0.50
216	Carpets, mats and rugs	4,500	10.39		4,500	5.64
229	Miscellaneous textiles	255	0.59		255	0.32
261	Household furniture	140	0.32		140	0.17
286	Commercial printing	11	0.02		11	0.01
289	Printing and publishing	15	0.03		15	0.02
304	Metal stamping and pressing	45	0.10		45	0.06
305	Wire and wire products	685	1.58		685	0.86
306	Hardware, tools and cutlery	1,610	3.72	168	1,778	2.23
308	Machine shops	514	1.19		514	0.64
309	Miscellaneous metal fabrication	182	0.42		182	0.23
311	Agricultural implements	25	0.06		25	0.03
315	Miscellaneous machinery and equipment	1,255	2.90	136	1,391	1.74
325	Motor vehicle parts and accessories	1,850	4.27		1,850	2.32
335	Communications equipment	25,400	58.65		25,400	31.89
336	Electrical industrial equipment	200	0.46		200	0.25
351	Clay products	249	0.57		249	0.31
356	Glass and glass products	327	0.75	32,000	32,327	40.55
	New plants	41,026	94.71	35,700	76,726	96.24
	Expanded plants	2,292	5.29	704	2,996	3.76
	Totals	43,318		36,404	79,722	

them account for 72% of the replacement value of all buildings and capital equipment induced through the program.

#### *Investment in growth industries*

Applying the criteria for the definition of growth industries discussed in Chapter II and detailed in Appendix V, Table 3.2 portrays the industries receiving assistance in terms of their growth performance for Ontario and Canada as a whole. Significantly, communications (335), which by 1968 accounted for 31.9% of the value of new plant and equipment in assisted industries, is a major growth industry. While expanding its over-all employment in Canada at a rapid rate, it is also showing strong comparative gain in Ontario. Glass and glass products (356) on the other hand, is an industry in a somewhat neutral position in employment growth terms with no record of significant change in

Canada or Ontario between 1964 and 1966. Unfortunately, the third industry type in order of relative proportion of new investment, other rubber industries (169) with 7.9% of the total, suffers like synthetic textiles (201) from disclosure rule problems for Ontario which make it impossible to enter it on the growth performance table. Intuitively, however, one suspects that it should be classified as growth oriented. The carpet, mat and rug industry (216) with 5.6% of total value of plant and equipment is growth oriented nationally with no strong tendency toward concentration in Ontario. The remaining 14% of such investment in assisted factories is scattered among (by 1968) twenty-two different classes of industry of which ten are classifiable as growth oriented. In all, some 46% of all the investment in new buildings and equipment is in industry classified in the growth category according to the definition adopted in this survey.

Table 3.2  
A growth industry classification of new and expanded ADA firms

Comp. gain or loss in Ontario with respect to Canada	Actual growth or decline in Canada	0%                      12%                      26%			
		Decline	Zero or little change	Growth	Rapid growth
Great comparative loss					
-9.0% — Minor comparative loss				311	
-4.5% —			101 141 197 244 261 286 289 304 356	305  309  336	216 306 308 308 315  325
+4.0% — Moderate comparative gain			351		335
+13.0% — Great comparative gain			IX	VI	385
		X	VIII	V	I
		169 201			
				VII	III
					IV

**The industrial distribution of investment according to product-user linkages**

To examine the orientation of new investment in a different way, the assisted plants may be grouped together in accordance with the broader categories of industry to which they are closely related through either product or user linkages. For instance, eight of the assisted factories distribute the bulk of their output to the vehicle industry. Three others are closely linked to the television and telecommunications branch of the electronics industry. The factories in each of these groups are likely to experience similar cyclical movements in activity, though classification by three-digit code may disguise the fact. Their future fortunes may depend far more on the fate of the motor vehicle or the television set than on the glass, rubber or wire industries to which at first sight they may seem more closely related (Table 3.3).

Table 3.3  
Replacement value of induced investment in assisted plants by associated industry group

Closely linked to (Industry)	Value of buildings and equipment (\$,000)	Percentage of total
Vehicles	40,824	51.21
Electronics (television)	26,500	33.24
Other domestic appliances	2,047	2.57
Textile, carpet, clothing	5,221	6.55
Industrial plant and equipment	1,245	1.56
Other	3,885	4.87
Total	79,722	

The vehicle and electronics oriented groups of associated industries may be identified as dominant among the new industries brought into southern



Georgian Bay under the auspices of the ADA scheme. Both are widely acknowledged as prime movers in economic growth under current North American conditions, although both are subject to the difficulties of complex, consumer oriented assembly industries in the mid-twentieth century. Current examples of such problems affecting even the nascent industries of the designated area are the disruption of production in the vehicles industry through labor disputes based on the wage parity issue, and the impact of government tax controls on the color television market in Canada, which have greatly cut back anticipated production in the electronics group. Such difficulties are part and parcel of the modern industrial scene and are the price newly industrializing areas must pay for entry into the mainstream of economic expansion.

The likely speed with which the southern Georgian Bay area will be caught up in this mainstream may be determined from the fact that more than 51% of the new investment in assisted plants is attributable to the vehicle associated group, and a further 33% to the electronics group. This latter group is particularly dependent on the manufacture of television equipment. Under these conditions the long-term prospect for rapid economic growth in the region seems extremely favourable. However, in the short-term, local adjustment to the new conditions, compounded by the difficulties of both industries in a national context, may provide problems.

### The direct impact on employment

In 1964, employment in the designated area stood at 7,687. By August 1967, it had increased by 27.3% to 9,784, and structural shifts had taken place such that 21.15% of the work force would have had to change their industrial classification (three-digit level) to reproduce the earlier proportional distribution(4). Against a background of small increase or actual decline in employment(5) in the southern Georgian Bay region during the preceding fifteen years, the contrast is impressive. The catalyst in this case was the direct impact on employment and its structural deployment brought about by the ADA incentives program.

In measuring the direct employment impact of the ADA scheme it has been necessary to make two important assumptions. First, the total 1967 employment of new factories which received assistance in setting up their plants in the designated area is assumed to represent the major part of the direct impact of the program. Second, for expanded plants using the scheme to supplement pre-existing production facilities, the directly induced employment is taken to be *all* employment added at the plant between mid-1964 and August 1967. This measures the actual increment in employ-

ment at the plant during the time of designation, although it is, of course, impossible to distinguish that resulting from the impact of the scheme from that due to other factors. It seems, however, not unreasonable to assume that employment expansion in those plants seeking and obtaining ADA help was closely related to the operation of the program.

The effects of the timing of the survey upon the findings of this study are again worth emphasis. Under the above assumptions the direct induced employment total most accurately calculated is that for August 1967, at which time it is estimated that only half of the value of new plant and equipment was in operation. A supplementary survey in May 1968 was aimed at providing current information, but even at that time some of the largest new plants were only just hiring and several of those already in operation had yet to reach normal working levels. In an attempt to provide long-term projections of the direct employment impact, employers were asked in 1967 to forecast their likely employment needs by 1970. This forecast carries with it all the uncertainties of a highly changeable business climate and is likely to contain a substantial error term.

### The industrial distribution of direct ADA induced employment

With the above considerations in mind, Tables 3.4 to 3.7 show the details of the direct induced employment situation in August 1967. By this time it is estimated that the direct induced employment figure is 2,222. Of this, 1,689 is contributed by the eighteen firms new to the southern Georgian Bay and a further 533 by the thirteen expanded firms. The total induced employment figure is some 125 more than the *absolute net increase* in employment between 1964 and 1967. This difference is a result of closures and the rundown of several firms traditional to the area, a process accelerated by, but not entirely caused by, the arrival of the new factories. Thus, the induced employment figure should not be confused with the *net increase* in employment.

Taking the direct induced employment alone, Table 3.4 shows that by two-digit classification the industries that have gained the most are electrical products (16) with 29.4%; rubber (03) with 17.2%; metal fabricating (13) with 14.3%; and textiles (05) with 11.0%. At the more meaningful three-digit level on Table 3.5, the dominance in the early stages of the scheme of communications equipment (335) with 28.5%, and other rubber (169) with 17.2% is clearly demonstrated. At a lower order of importance are motor vehicle parts (325) with 9.4%, miscellaneous machinery and equipment (315) with 6.8%, and carpets, and mats and rugs (216) with 6.3%.

Table 3.4  
Direct induced employment by two-digit code, 1967

Two-digit code	Industry	Workers	Percentage
01	Food and beverage	40	1.80
03	Rubber	383	17.24
05	Textile	244	10.98
07	Clothing	21	0.95
09	Furniture and fixtures	31	1.39
11	Printing, publishing and allied	49	2.21
13	Metal fabricating	317	14.27
14	Machinery	154	6.93
15	Transportation equipment	208	9.36
16	Electrical products	654	29.43
17	Non-metallic mineral products	66	2.97
20	Miscellaneous manufacturing	55	2.47
	Total	2,222	

*The industrial distribution of induced employment according to product or user linkages*

Interpreting Table 3.6 in the broader context of industries to which the new factories are closely linked, the induced employment at this time is heavily concentrated in the vehicle oriented (31.5%) and the electronics (29.9%) groups. Both are almost entirely made up of newcomers to southern Georgian Bay. The third ranking domestic appliances group (10.7%) has some previous roots in the area.

While discussion so far has emphasized the dominant elements in the newer industries drawn to the area by the scheme, it is also worth pointing out that its impact is wide-ranging. The scheme has also stimulated employment through such locally oriented activities as the manufacture of soft drinks, printing, and heating and ventilating engineering.

*The impact of the ADA program on female employment*

As Table 3.7 shows, a substantial proportion of the directly induced employment from the assistance scheme has gone to females. Out of the 1,782 hourly

Table 3.5  
Direct induced employment by three-digit code, 1967

Three-digit code	Industry	Employment 1967	Induced employment	Percentage of total employment
101	Slaughtering and meat	10	10	0.45
141	Soft drinks	99	30	1.35
169	Other rubber	383	383	17.24
197	Wool cloth mills	197	28	1.26
201	Synthetic textiles	189	76	3.43
216	Carpets, mats and rugs	140	140	6.30
229	Miscellaneous textiles	95	—	—
244	Women's clothing	120	21	0.94
261	Household furniture	511	31	1.39
286	Commercial printing	103	2	0.09
289	Printing and publishing	476	47	2.11
304	Metal stamping and pressing	242	9	0.40
305	Wire and wire products	226	108	4.86
306	Hardware, tools and cutlery	355	123	5.53
308	Machine shops	96	55	2.48
309	Miscellaneous metal fabrication	123	22	0.99
311	Agricultural implements	2	2	0.09
315	Miscellaneous machinery and equipment	849	152	6.84
325	Motor vehicle parts and accessories	208	208	9.36
335	Communications equipment	821	634	28.53
336	Electrical industrial equipment	61	20	0.90
351	Clay products	170	53	2.39
356	Glass and glass products	15	13	0.59
385	Plastics n.e.s.	223	55	2.48
	Total		2,222	



Table 3.6  
Direct induced employment in assisted plants by  
associated industry groups, 1967

Closely linked to (Industry)	Employment	Percentage
Vehicles	699	31.46
Electronics (television)	665	29.93
Other domestic appliances	237	10.66
Textile, carpet, clothing	265	11.93
Industrial plant and equipment	172	7.74
Other	184	8.28
Total	2,222	

*paid* jobs made available, 1,075 or 60.3%, are for women. These are chiefly concentrated in the communications equipment (335), rubber (169), and motor vehicle parts (325) industries, which have 66.3% of the total. On the male side, the first two of these also have a substantial proportion, with 19.5% of all the induced male labor going to the rubber industries and 17.8% to communications equipment. The bias toward females is, however, essentially a feature of the early impact of the

scheme. Assisted factories coming into operation during and after 1968 will tend to redress the balance.

*ADA induced employment in United States owned firms*

Another interesting feature of the employment counted as having been directly induced through the scheme up to August 1967, is the substantial proportion of it generated through United States owned firms. The details are shown in Table 3.8. Altogether 49.8% of it is, not surprisingly, accredited to firms whose head offices are in Ontario. However, some 34% may be attributed to United States based companies, for the most part in the Northwest-central and Northeast-central standard regions.

**Direct ADA induced employment changes after August 1967**

Between the dates of the major survey in August 1967 and the limited supplementary survey in May 1968, a number of changes have taken place in the impact of the scheme. Five new factories sponsored under the ADA scheme have come into production,

Table 3.7  
Direct induced employment by three-digit code for  
hourly paid males and females in 1967\*

Three-digit code	Industry	Male	Per cent	Female	Per cent
101	Slaughtering and meat	9	1.27		
141	Soft drinks	22	3.11	2	0.19
169	Other rubber	138	19.53	176	16.37
197	Wool cloth mills	5	0.71	20	1.86
201	Synthetic textiles	43	6.08	26	2.42
216	Carpets, mats and rugs	48	6.79	72	6.70
244	Women's clothing	2	0.28	17	1.58
261	Household furniture	18	2.55	10	0.93
286	Commercial printing	2	0.28		
289	Printing and publishing	3	0.42		
304	Metal stamping	7	0.99		
305	Wire and wire products			89	8.28
306	Hardware, tools and cutlery	24	3.39	77	7.16
308	Machine shops	38	5.37		
309	Miscellaneous metal fabrication	18	2.55		
311	Agricultural implements	1	0.14		
315	Miscellaneous machinery and equipment	107	15.13		
325	Motor vehicle parts and accessories	20	2.83	167	15.53
335	Communications equipment	126	17.83	370	34.42
336	Electrical industrial equipment	15	2.12		
351	Clay products	17	2.40	35	3.25
356	Glass and glass products	8	1.13	2	0.19
385	Plastics n.e.s.	36	5.10	12	1.12

\*The male/female breakdown is for hourly paid workers only, salaried employees being excluded due to lack of sufficient information.

Table 3.8  
Direct induced employment by address of parent company, 1967

Location of parent company head office	Induced employment 1967	Percentage total induced	Number of firms
99 Head office in same county	161	7.25	2
00 Assisted plant is head office	252	11.33	11
03 Brant County	140	6.30	1
38 Perth County	33	1.49	1
55 York County	520	23.40	5
56 Metro Montreal	304	13.68	1
57 Alberta	55	2.48	1
68 USA – Northwest-central	530	23.85	3
69 USA – Northeast-central	130	5.85	3
72 USA – South Atlantic	0	0.0	1
73 USA – Middle Atlantic	97	4.37	2
Total induced employment in Ontario firms	1,106	49.77%	
Total induced employment in Montreal firms	304	13.68%	
Total induced employment in rest of Canada firms	55	2.48%	
Total induced employment in USA firms	757	34.07%	

Table 3.9  
Direct induced employment forecast for 1970

Three-digit code	Industry	Induced employment 1967	Addition by 1970	Total 1970	Per cent
101	Slaughtering and meat	10	4	14	0.26
139	Miscellaneous food		35	35	0.66
141	Soft drinks	30		30	0.56
143	Distilleries		29	29	0.55
169	Other rubber	383	320	703	13.22
197	Wool cloth mills	28		28	0.53
201	Synthetic textiles	76	60	136	2.56
216	Carpets, mats and rugs	140		140	2.63
244	Women's clothing	21	25	46	0.86
261	Household furniture	31	88	119	2.24
286	Commercial printing	2	2	4	0.08
289	Printing and publishing	47	85	132	2.48
304	Metal stamping	9		9	0.17
305	Wire and wire products	108	300	408	7.67
306	Hardware, tools and cutlery	123	130	253	4.76
308	Machine shops	55	22	77	1.45
309	Miscellaneous metal fabrication	22	65	87	1.63
311	Agricultural implements	2	15	17	0.32
315	Miscellaneous machinery and equipment	152	174	326	6.13
325	Motor vehicle parts and accessories	208	60	268	5.04
335	Communications equipment	634	620	1,254	23.57
336	Electrical industrial equipment	20	70	90	1.69
351	Clay products	53	30	83	1.56
356	Glass and glass products	13	941	954	17.93
385	Plastics n.e.s.	55	22	77	1.45
	Totals	2,222	3,097	5,319	

three of which are closely associated with the vehicles industry. The two major ones are glass factories, both of which supply vehicle glassware as the main part of their output. In total, the new factories have added 547 to the direct induced employment figure.

To account more fully for these new developments and to make some longer-term projections of the impact of the scheme, Table 3.9 presents the employment forecasts for assisted firms for 1970. For new plants, their projected total employment is taken while for expanded plants the total increment to their 1964 work-force is used. In the latter case, the assumption is again made that all additional employment in the plant in the years 1965 to 1969 inclusive is in some way a result of the assistance received from the Area Development Agency. The expected total for direct induced employment is as follows:

Induced employment in expanded factories	1,081
Induced employment in new factories completed before August 1967 . . . . .	3,207
Induced employment in new factories completed before August 1968 . . . . .	<u>1,031</u>
Total induced employment by 1970. . . . .	5,319

The projected total for direct induced employment, were it all to be recorded as net increment, would represent an increase of some 69.2% in the labor force of the designated area over the 1964 situation. In reality, however, by no means all of the direct induced employment will be net increment as there are likely to be substantial losses in employment among non-assisted firms as the re-deployment of the work-force takes place.

Table 3.9 shows that by 1970 the greater proportion of the directly induced employment will be concentrated in communications equipment (335) with 23.5%; glass and glass products (356) with 17.9%; and other rubber industries (169) with 13.2%. The first of these is, according to Table 2.13, clearly a major national and regional growth industry at present. The second has, to date, had a 'neutral' growth record at the national and provincial levels. The third, while it might intuitively be classified among the growth industries, cannot be formally declared one because of data problems(6). A second group in order of their proportional importance in the 1970 projected figure for induced employment, is made up of wire and wire products (305), miscellaneous machinery (315) and motor vehicle parts (325). These account respectively for 7.7%, 6.1%, and 5.0% of the forecast induced employment, and all are classified on Table 3.2 as growth industries.

Grouping the three-digit classes, as before, under the associated industries to which they are closely tied,

Table 3.10  
Direct induced employment in assisted plants  
by associated industry group, 1970

Closely linked to (Industry)	Employment	Percentage
Vehicles	2,305	43.34
Electronics (television)	1,295	24.35
Other domestic appliances	504	9.47
Textile, carpet, clothing	351	6.60
Industrial plant and equipment	393	7.39
Other	471	8.85

Table 3.10 shows the continued dominance of the vehicle oriented group with 43.3% of the 1970 induced figure and of the electronics group with 24.3%. These two may, therefore, be considered the foundations on which the new industrial future of the designated area is to be built.

**The direct impact on the wage-bill**

In calculating the direct wage-bill impact of the scheme on the designated area, the same assumptions are made as in the cases of investment and employment. For new factories ostensibly induced into the area by the attractions of the incentives scheme, the total payroll is accredited to direct impact. For expanded factories it has again been necessary to resort to an estimating procedure. Each factory supplies its total payroll during the last fiscal year. From this a value can be derived for average pay per worker in the factory. This figure carries within it the influence of a number of things including the level of wage rates in the plant, the proportion of male to female workers, the proportion of salaried to hourly employees and the breakdown of skill classifications within the factory. If the assumption is made that the direct induced employment generated in the expanded factories was recruited in strict accordance with these pre-existing conditions in the factory, the average pay per worker may be multiplied by the estimate for direct induced employment to arrive at a figure for direct wage-bill impact. There are, of course, potential sources of error in this calculated figure even if the assumptions hold, but the authors consider it the best approximation possible given the available data.

**The industrial distribution of the directly induced payroll**

Calculating the directly induced increment to payroll in this way, Table 3.11 presents the details by three-digit industry code. It is estimated that, by August 1967, the assistance scheme added \$8,410,000 to the total annual payroll of the designated area. This represented some 44.6% of the estimated value of total payroll for the designated area in 1964. Once again this is considerably

Table 3.11  
Payroll increment directly due to the operation of the scheme, 1967

Three-digit code	Industry	1967 Approximate payroll (\$,000)	Per cent	Mean pay per additional worker (\$,000/year)
101	Slaughtering and meat	62	0.74	6.20
141	Soft drinks	114	1.35	3.80
169	Other rubber	1,875	22.28	4.89
197	Wool cloth mills	95	1.13	3.39
201	Synthetic textiles	388	4.61	5.10
216	Carpets, mats and rugs	467	5.55	3.33
244	Women's clothing	55	0.65	2.62
261	Household furniture	104	1.24	3.35
286	Commercial printing	6	0.07	3.00
289	Printing and publishing	85	1.01	1.81
304	Metal stamping, pressing and coating	20	0.24	2.22
305	Wire and wire products	350	4.16	3.24
306	Hardware, tools and cutlery	459	5.45	3.73
308	Machine shops	200	2.37	3.64
309	Miscellaneous metal fabrication	98	1.16	4.45
311	Agricultural implements	17	0.20	9.50
315	Miscellaneous machinery and equipment	729	8.66	4.80
325	Motor vehicle parts and accessories	702	8.34	3.37
335	Communications equipment	2,161	25.68	3.41
336	Electrical industrial equipment	50	0.59	2.50
351	Clay products	167	1.98	3.15
356	Glass and glass products	52	0.62	4.00
385	Plastics n.e.s.	162	1.92	2.94
	Total	8,418		

Note: 1967 Average pay per worker in non-ADA firms is \$2,670 per year.

more than the actual *net increment* to payroll between 1964 and 1967 which was approximately \$5 million. Of the total directly induced figure, \$6,360,000 (more than 75%) was accounted for by the total payrolls of the new factories, and the remaining \$2,049,000 by the expanded plants. These are the figures calculated by the estimating procedure discussed above.

Column 3 of Table 3.11 presents the average annual pay per induced worker in the industries which received assistance. In some of the smaller industries where the income of the owner-manager bulks large in the total payroll figure, annual average rates of \$6,200 or even \$9,500 are encountered. However, the general rate of pay per induced worker lies somewhere between \$3,000 and \$4,000 per year. Significantly, for the new plants alone the mean value is higher at \$4,060, while for expanded plants it stands at \$3,530. For those industries in the designated area which did not receive assistance the equivalent figure is \$2,670, a difference which will be discussed in detail in Chapter IV.

#### The direct ADA induced payroll in 1970

Taking the long-term projections of additional employment in the assisted plants and weighting them in the case of each factory by the respective average pay per worker per year, some idea can be gained of the potential addition to payroll by 1970 (Table 3.12). At what may be considered a conservative estimate, the total increment to payroll due to the impact of the scheme should, by that date, be \$20.3 million. In other words, by the time the full impact of the scheme is felt, the 1964 payroll in the designated area should have been more than doubled. The secondary impact on the area through this enormous increase in purchasing power should therefore be considerable. As one of the primary reasons for the inclusion of southern Georgian Bay in the designated area was its low median family income, the scheme may be considered, in this respect also, to have had a revolutionary impact on the problems of the region.

Table 3.12  
Projected impact of the scheme on payroll by 1970

Three-digit code	Industry	Projected induced employment 1970	Average pay per worker 1967	Projected payroll 1970	Per cent
101	Slaughtering and meat	14	6.20	86.80	0.43
139	Miscellaneous food	35	4.06*	142.10	0.70
141	Soft drinks	30	3.80	114.00	0.56
143	Distilleries	29	4.06*	117.74	0.58
169	Other rubber	703	4.89	3,437.67	16.93
197	Wool cloth mills	28	3.39	94.92	0.47
201	Synthetic textiles	136	5.10	693.60	3.41
216	Carpets, mats and rugs	140	3.33	466.20	2.30
244	Women's clothing	46	2.62	120.52	0.59
261	Household furniture	119	3.35	398.65	1.96
286	Commercial printing	4	3.00	12.00	0.06
289	Printing and publishing	132	1.81	238.92	1.18
304	Metal stamping	9	2.22	19.98	0.10
305	Wire and wire products	408	3.24	1,321.92	6.51
306	Hardware, tools and cutlery	253	3.73	943.69	4.65
308	Machine shops	77	3.64	280.28	1.38
309	Miscellaneous metal fabrication	87	4.45	387.15	1.90
311	Agricultural implements	17	9.50	161.50	0.79
315	Miscellaneous machinery and equipment	326	4.80	1,564.80	7.70
325	Motor vehicle parts and accessories	268	3.37	903.16	4.45
335	Communications equipment	1,254	3.41	4,276.14	21.05
336	Electrical industrial equipment	90	2.50	225.00	1.11
351	Clay products	83	3.15	261.45	1.29
356	Glass and glass products	954	4.00	3,816.00	18.79
385	Plastics n.e.s.	77	2.94	226.38	1.11
	Totals	5,319		20,310.57	

\*No data available – new plant average figure is used.

### The direct impact on local taxation

The last of the results of the ADA program classified here under the term "direct impact" is the effect on local government of taxes payable by new and expanded firms receiving assistance. Once again for new firms total taxation payable is taken as direct impact, while for expanded firms the estimating procedure is based on the multiplication of the tax payable per square foot of the original factory by the square footage of the ADA sponsored extension. Yet again, the estimating procedure is crude but the best readily available without further detailed work in the field.

By August 1967, some \$418,000 was due to be paid in taxes by new and expanded firms. This, however, represented less than half of the total value payable by the end of 1968 as the major new glass plants were completed and assessed. By the latter date almost \$1 million was payable by the assisted firms. The details of

taxation payable, by three-digit industry code, are shown on Table 3.13, referring to conditions in 1968.

Initially, local authorities in the designated area will use much of the additional taxation income to finance the provision of services to the developing plants. In time, however, the drain on local resources will gradually decrease while taxable income will most likely increase. Thus the scheme has provided the authorities of the southern Georgian Bay region with a permanent legacy in taxation base which exceeds \$1 million. Again, the secondary effects of this on the provision of community services should be considerable once the difficult phase of adjustment to the needs of the new factories is past(7).

The long-term direct impact of the scheme may be measured in crude quantitative terms by its provision of more than \$80 million of investment in industrial plant, more than 5,000 new jobs, a local payroll increment in

Table 3.13  
Direct induced impact through municipal taxes payable by assisted firms, 1968

Three-digit code	Industry	New plant sq. footage	Extension sq. footage	Taxes	Per cent of total
101	Slaughtering and meat	7,000		5,120	0.5
141	Soft drinks	12,000		6,690	0.7
169	Other rubber	230,800		123,203	12.4
197	Wool cloth mills	110,000	22,000	4,480	0.5
201	Synthetic textiles	92,000	5,500	2,400*	0.2
216	Carpets, mats and rugs	158,000		88,777	8.9
229	Miscellaneous textiles	44,000	5,000	3,060	0.3
261	Household furniture	11,000		1,200	0.1
289	Printing and publishing	2,000	300	61	0.0
304	Metal stamping	4,000		806	0.1
305	Wire and wire products	42,000		25,435	2.6
306	Hardware, tools and cutlery	108,000	38,000	9,587	1.0
308	Machine shops	28,800		13,354	1.3
309	Miscellaneous metal fabrication	60,000	19,600	3,989	0.4
311	Agricultural implements	5,000		500	0.1
315	Miscellaneous machinery and equipment	433,000	63,000	16,679	1.6
325	Motor vehicle parts and accessories	41,300		39,419	4.0
335	Communications equipment	285,000		71,061	7.1
336	Electrical industrial equipment	20,000		3,000	0.3
351	Clay products	52,000	27,000	5,508	0.5
356	Glass and glass products	790,000		571,199	57.4
	Totals	2,535,900	180,400	995,528	

\*Estimated, not complete until 1969.

Source: computed from assessment figures obtained from assessment rolls in Midland, Collingwood and Owen Sound.

excess of \$20 million and an input to local authority taxation of \$1 million. In more general terms, it effectively revolutionized almost every aspect of the economic life of the southern Georgian Bay region,

raising it from a lightly industrialized, primary producing area with little hope for growth, to a potentially fast developing industrial region geared to the booming Ontario economy.



## The indirect impact of the ADA program

This chapter is concerned with four aspects of the indirect effect of the ADA program. The first section analyses the broad aspects of the inter-regional input-output structure of the ADA assisted plants. The second section estimates the indirect effect of the program on employment both within the study area and beyond. The third section examines the effect of the program on wage rates within the study area, and the fourth indicates the indirect effect of the program on land values and house prices using Collingwood as a case study.

### The inter-regional input-output structure of ADA assisted plants

By the date of the questionnaire survey in August 1967, the majority of new plants brought in through the incentives program had been in operation for less than twelve months. Consequently, they had had little time to assess the logistics of their new location and to make contact with potential suppliers and markets in the designated area. Many of them were still heavily dependent on centralized purchasing and sales control services provided by head offices and had, at this stage in their development, little autonomy to develop their own input-output linkages. Consequently, it is to be expected that the new factories, through which came the greater part of the scheme's direct impact, will show little integration into the economic framework of the study area at the survey date. It will be interesting, however, to observe the degree to which the expanded plants have already developed inter-industry linkages within the study area.

### The local impact

As Table 4.1 shows, the assisted plants, both new and expanded, demanded materials worth \$403,400 from the agricultural, mining and manufacturing sectors of the study area (local area) during 1966-1967. Of this,

the designated area supplied goods and services to the value of \$244,900. On the output side (Table 4.2) the study area was the destination of products worth \$652,700 produced by the assisted firms(1). Of this figure only \$154,500 went in the form of inputs to local manufacturing industries, all of them in the designated area. The remainder went to final demand, for which it is impossible to make a distinction between that in the designated area and that in the peripheral area.

In total, \$18.5 million of inputs and \$33.7 million of outputs were generated by the arrival of the new plants and by the extensions to existing plants under the terms of the scheme. The study area, therefore, supplied only 2.18% of the assisted plants' inputs and received only 1.93% of their outputs by value. For the new assisted plants alone [(b) of Tables 4.1 and 4.2] the approximate figures were 2.67% and 2.43% while for the expanded (c) they were as low as 0.26% and 0.42%. By contrast, those plants in the designated area which did not receive assistance under the ADA scheme (d) drew 20.40% of their inputs from local sources and shipped 19.48% of their outputs to the study area.

Clearly, the assisted plants, both new and expanded, are considerably more outward looking than their non-assisted counterparts in the southern Georgian Bay region. As a result of this, much of the indirect impact of the scheme generated through inter-industry linkages, is being felt, not in the designated area, but in other parts of Canada and the United States.

### The non-local impact

In attempting to obtain some estimate of the non-local impact of the program through the input-output linkages of assisted firms, five areas were selected for study. These were Metropolitan Toronto, Ontario outside the study area and Toronto, the rest of Canada, the United States and Overseas. Tables 4.1 and 4.2 show the dollar values of inputs and outputs accredited to these areas.

Table 4.1  
The regional origin of material inputs to ADA assisted plants (\$,000)

Row	Category	STUDY AREA					ORIGIN					Total dollar value
		Agr.	Mining	Mfg.	Service	Total	Metro	Ontario	Canada	USA	Other	
(a)	Total assisted plants	7.0	10.1	422.5	n.d.	403.4	3161.4	4523.6	1501.8	7263.8	1643.2	18497.2
	Total assisted plants %	0.04	0.05	2.28		2.18	17.09	24.45	8.12	39.27	8.88	
(b)	New assisted plants	7.0		422.5		393.3	1930.3	3509.3	791.7	6733.6	1339.3	14697.5
	New assisted plants %	0.05		2.87		2.67	13.13	23.88	5.39	45.81	9.11	
(c)	Expanded assisted plants*		10.1			10.1	1231.1	1014.3	710.1	530.2	303.9	3799.7
	Expanded assisted plants* %		0.26			0.26	32.40	26.69	18.69	13.95	8.00	
(d)	Non-assisted D.A. plants	n.d.	n.d.	n.d.	n.d.	97.7	122.4	154.1	24.5	47.6	32.6	478.9
	Non-assisted D.A. plants %					20.40	25.56	32.17	5.12	9.94	6.80	
(e)	'Balance' of expanded plants					19.7	4507.7	3275.5	3196.5	1463.7	1428.7	13891.8
(f)	Total all inputs to designated area					520.8	7791.5	7953.2	4722.8	8775.1	3104.5	32867.9
	Total all inputs to designated area %					1.58	23.70	24.20	14.36	26.70	9.44	

\*Estimated.

#### *The regional origins of assisted plant inputs*

Of the \$18.5 million total for inputs to the plants, more than \$7 million (38.3%) originated in the United States, a further \$4.5 million (24.5%) was derived from the rest of Ontario, and a little over \$3 million (16.9%) came from Metropolitan Toronto. Thus a large part of the multiplier effect generated indirectly through the input needs of the assisted plants was having its impact beyond the study area, and a significant impact was being experienced beyond Canada's borders.

#### *Differences of input origins between new and assisted plants*

If the inputs are divided into those derived by new plants and those which expanded their facilities under the scheme, it is evident that the greatest emphasis toward the United States is found among the former which takes more than 80% of all the inputs by value. For the new plants by themselves, 45.8% of the value of their inputs was derived from the United States, 23.9% from the rest of Ontario and 12.9% from Metropolitan Toronto. The close affiliation between this group and United States companies has already been noted in the data regarding the addresses of parent companies in Chapter III.

For the expanded plants the situation is considerably different. While these are, in many ways, less oriented toward the study area than the new plants, they are integrated more closely with industrial activity in Canada than their new plant counterparts. Of the \$3.75 million import bill induced through the expansion of their facilities under the ADA scheme, \$1.25 million (32.4%) is supplied by Metropolitan Toronto and a little over \$1 million from the rest of Ontario (26.7%). The comparable figure for the United States is a little more than half a million dollars (13.9%).

As a basis for comparison, those firms in the designated area which did not receive assistance are even more strongly oriented to local suppliers. Of their \$479,000 input bill, the rest of Ontario supplies 32.2%, Metropolitan Toronto 25.6% and the local area 20.4%. The United States supplies only 9.9%. Thus, those factories in southern Georgian Bay with the closest links, in relative terms, to the local and Ontario industrial scene were those which did not receive assistance under the scheme.

#### *The regional destinations of assisted plant outputs*

On the output side, the greater part (35%) of the total generated by the assisted firms (\$35 million) goes



Table 4.2  
The regional destination of material outputs of ADA assisted plants (\$,000)

Row	Category	STUDY AREA		STUDY AREA FINAL DEMAND			Study area	DESTINATION					Total dollar value
		Mfg.	Service	Total	Private	Gov't		Metro	Ontario	Canada	USA	Other	
(a)	Total assisted plants	154.5	n.d.	498.2	491.3	6.9	652.7	6960.4	11835.2	7709.9	5759.5	837.1	33754.8
	Total assisted plants %	0.46		1.47	1.45	0.02	1.93	20.62	35.06	22.84	17.06	2.48	
(b)	New assisted plants	154.5		462.5	462.5		617.5	4789.8	9955.4	3881.8	5559.6	599.4	25403.5
	New assisted plants %	0.61		1.82	1.82		2.43	18.85	39.19	15.28	21.88	2.36	
(c)	Expanded assisted plants*			35.2	28.3	6.9	35.2	2170.6	1879.8	3828.1	199.9	237.7	8351.3
	Expanded assisted plants* %			0.42	0.34		0.42	25.99	22.51	45.83	2.39	2.84	
(d)	Non-assisted D.A. plants		n.d.	n.d.	n.d.	n.d.	172.5	175.0	298.5	208.9	17.3	13.4	885.6
	Non-assisted D.A. plants %						19.48	19.76	33.70	23.59	1.95	1.51	
(e)	'Balance' of expanded plants						172.4	6791.8	7645.0	13639.3	590.0	464.6	29303.1
(f)	Total all outputs from designated area						997.6	13927.2	19778.7	21558.1	6366.8	1315.1	63943.5
	Total all outputs from designated area %						1.56	21.78	30.93	33.71	9.96	2.06	

\*Estimated.

Note: Columns for agriculture and mining have been deleted.

to the rest of Ontario division. The rest of Canada takes \$7.7 million or 22.8%, and Metropolitan Toronto \$6.9 million or 20.3%. The United States is the market for only \$5.7 million (17%) although it is the chief supplier of inputs to the assisted plants. The Canadian market is the predominant destination for their outputs.

#### *Differences in output destinations between new and assisted plants*

Breaking down outputs into those generated by new and those by expanded plants, there is a sharp contrast between the two groups. For new plants the rest of Ontario and the United States are more important as markets for products, taking 39.2% and 21.9% respectively of the \$25.4 million new plant output figure. On the other hand, the expanded plants distribute the greater part of their output to the rest of Canada (45.8%) and Metropolitan Toronto (26.0%). For the latter the proportion going to the United States is a low 2.4%. This contrast seems in general accord with the proposition that most of the inter-industry and market

links of the new plants are with the United States and southwestern Ontario, while the longer established, expanded plants are more closely tied to Toronto, and, through links to a wide range of primary processing industries, to widely scattered markets in Canada outside Ontario.

For those plants in the designated area which did not receive assistance the greatly increased importance of the local area as a market is their most distinctive characteristic. The proportions for this group (Table 4.2) are rest of Ontario 33.7%, the rest of Canada 23.6%, Metropolitan Toronto 19.8% and the local area 19.5%.

#### **Summary of the effect of the ADA program on the inter-regional input-output structure of plants in the designated area**

An important effect of the ADA incentives scheme has, therefore, been to greatly extend the scope of inter-industry and market linkages of firms in the southern Georgian Bay region. Prior to designation,

much of the area's industrial activity was closely tied to the local area with an attendant tendency to slow growth and a low ceiling on potential output. Even in the years before 1965 there was, among the newer and more important designated area concerns, a marketing bias toward outlets with a relatively slow growth potential. One or two firms were supplying a rapidly expanding market for consumer durables but others, supplying the textile, furniture, pottery, shipbuilding, transportation equipment, and pulp mill machinery markets, were unlikely to experience spectacular expansion.

Designation and the arrival of major manufacturing units associated with the vehicles, electronics and household appliance industries has, however, linked the southern Georgian Bay region firmly with the entire North American market for a range of products with massive sales potential. The economic fortunes of the designated area are now no longer tied predominantly to the growth of local purchasing power or the need for localized raw materials but with trends of economic activity in the manufacturing belt of North America and the factors which condition them. Thus, while many of the multiplier effects of the ADA incentives programs in the southern Georgian Bay region have been transferred outside the region through demands for non-local inputs, the return effect in the future through multipliers emanating from the manufacturing belts of the 'Golden Horseshoe' and the northeastern United States will be more than compensatory.

### Indirectly induced employment

#### The study area

Employment generated indirectly through the ADA incentives scheme in the southern Georgian Bay region is that created in non-assisted firms, both within and outside the designated area, through the need to produce those additional goods and services required as inputs by the assisted factories. Within the designated area itself, for reasons outlined in the previous section, the indirectly induced employment figure was very small by August 1967. At this stage by far the greater part of the employment generated in this way was external to the region. This may be regarded as the normal situation prevailing during the early stages of an industrial development program applied to a previously lightly industrialized area. In time, with greater adjustment to their new environment, and with the arrival of independently sponsored, linked industries, the newer establishments will tend to increase their indirect impact on the local economy.

#### *Inter-industry input linkages of assisted firms within the study area*

Table 4.3 presents for the 1966-67 fiscal year, the dollar values of inputs demanded by assisted firms from

other industries in the study area. The cells marked with asterisks indicate transactions between assisted firms and other plants within the designated area. The transactions recorded are those involving the shipment of manufactured goods, agricultural commodities and mine products to firms which received assistance. Unfortunately, it proved impossible, from the information elicited by the questionnaire survey, to make adequate estimates of fuel and power transactions or those involving services, such as transport. These important omissions should be borne in mind in interpreting what follows.

Only four entries connect the assisted plants specifically with other firms in the designated area. By far the most important of these links is a manufacturer of metal stampings to an assisted firm which makes vehicle seat belts. Both plants are located in the same municipality and have organizational as well as functional associations. A second important linkage is that between a manufacturer of general hardware components and a major telecommunications equipment plant. Both firms received assistance under the ADA scheme, and both are new to the southern Georgian Bay region. The remaining two entries connecting designated area firms associate these last two plants with a local heating and ventilating engineer whose new plant was constructed with the help of an ADA grant. The latter provides general plant maintenance services in addition to his more specialized line of activity. In an area where skilled labor is at a premium he fulfils one of the most pressing needs of the newly established factories.

In the wider context of linkages between assisted firms and suppliers within the study area as a whole, there is a little more industrial association. Three assisted firms derive inputs worth \$141,000 from peripheral area plants making plywood and veneers, agricultural implements and pumps.

More difficult to allocate in terms of their location within the study area, are inputs derived from the agricultural and mining sectors. An assisted firm manufacturing animal feeds derives inputs worth \$7,000, chiefly of locally supplied horsemeat, and a pottery plant which expanded under the scheme, derives \$10,100 of clay inputs from local sources.

#### Indirectly induced employment within the study area

An estimate of the additionally induced employment due to these linkages may be arrived at by two means. First, to arrive at an approximation of the general magnitude of the figure, a factor may be derived by calculating the proportion of all outputs from the study area received as inputs by assisted firms. For the study area as a whole the factor is 0.097%. Taking this as a proportion of the total employment in the study area at the time of the survey, and making the important

Table 4.3  
The industrial origin of locally derived inputs to ADA assisted plants (\$,000s)

Study area industries supplying	Assisted industries purchasing									Total T1	Total value of all study area outputs for row industries T2
	101 Slaughtering and meat	261 Household furniture	304 Metal stamping	306 Hardware, tools and cutlery	308 Machine shops	311 Agricultural implements	325 Motor vehicle parts	335 Communications equipment	351 Clay products		
252 Veneer and plywood mills		61.2								61.2	6570.0
311 Agricultural implements					77.3					77.3	5448.4
304 Metal stamping				4.5*			150.0*	12.5*		167.0	10114.7
306 Hardware, etc.								78.3*		78.3	3900.0
332 Manufacture of major appliances						2.5				2.5	19454.9
Agriculture	7.0									7.0	73750.8
Mining									10.1	10.1	3400.0
Total value of outputs of column industries	12608.0	21861.7		3900.0	1984.9	5448.4	775.0	13194.8	1768.6		

assumption that the marginal propensity to employ a new worker is equivalent to the relevant average propensity, the total indirectly induced employment is approximately 23.

A second method of calculating the induced employment within the study area is a more detailed one involving the calculation, by industry type, of the actual numbers of production workers supplying the specific needs of the assisted plants. The method is that previously used by Hansen and Tiebout(2) in their study of the Californian economy, and is based on the principles of the regional input-output model. In the case of each industry for which an output transaction to an assisted firm is recorded on Table 4.3, a factor is calculated which expresses the proportion of the dollar value of those outputs allocated to supplying the needs of the assisted plants as a percentage of the total dollar value of all outputs from the supplying industry. Multiplying total employment in the supplying industry by this factor provides an estimate of the number of workers required in that industry to satisfy the input requirements of the assisted plants.

Table 4.4 presents the results of this operation for all linkages between assisted firms and others in the study area. Again those links to designated area plants are marked with an asterisk. Thus the dollar input requirements of Table 4.3 have been converted into employment requirements on Table 4.4. As the grand total of linked employment in column T1 shows, the magnitude is of the same general order as that calculated by the more general method used above. The discrepancy emanates from two sources. First, the more general method used earlier took no account of the linkages to the agricultural and mining sectors and was solely concerned with manufacturing outputs to assisted firms – an immediate difference of 2.79 workers may be accounted for. Second, the previous assumption of constant output per worker for all linked industries is relaxed using the more detailed method, and part of the difference between the two resultant figures is due to the structural impact of differences in this ratio.

One of the problems which must be resolved in calculating the indirectly induced figure for the study area is that of double counting. It was stated earlier that,

Table 4.4  
Indirectly induced employment, by industry type, study area, 1967

Assisted industries purchasing	Study area industries supplying										
	101 Slaughtering and meat	261 Household furniture	304 Metal stamping	306 Hardware, tools and cutlery	308 Machine shops	311 Agricultural implements	325 Motor vehicle parts	335 Communications equipment	351 Clay products	Total all linked employment T1	Total excluding assisted plant employment already counted as direct T2
252 Veneer and plywood mills		4.10								4.10	4.10
311 Agricultural implements					4.89					4.89	4.89
304 Metal stamping				0.22*			7.41*	0.61*		8.24	7.41
306 Hardware, etc.								9.56*		9.56	–
332 Manufacture of major appliances						0.11				0.11	0.11
Agriculture	2.02									2.02	2.02
Mining								0.72		0.72	0.72
									29.64	19.25	

with the exception of one firm, all of those in the designated area supplying the input needs of assisted plants had themselves been brought into the area through the incentives program. Their *total* employment for 1967 has already been counted in calculating the direct induced employment figure and should not, therefore, be tallied a second time as indirectly induced employment. Subtracting these transactions between assisted plants produces the indirect employment totals of column T2 in Table 4.4. The over-all figure for employment generated in the study area through the indirect impact of the scheme is close to 19. For the designated area alone it is as small as 7. The totals calculated in this way accord closely with the estimates made in the field through discussions with local plant managers about the indirect effects of the scheme.

#### *Projected estimates of indirect employment to 1970*

By taking the employment based input-output model a little further, employment requirement coefficients ( $E_{ij}$ s) may be calculated from which an estimate

of indirectly induced employment by 1970 may be gauged. Such projections are, however, somewhat unrealistically based on the premise that the distribution and size of  $E_{ij}$  coefficients would remain constant.

It is to be expected that both the number of transactions with local industries and the magnitude of such transactions will change rapidly as the assisted plants settle into their new environment. The projections of employment requirements will probably significantly underestimate the observed results by 1970.

The  $E_{ij}$  coefficients are shown on Table 4.5. They are calculated in the same way as the more familiar dollar input-output coefficients ( $A_{ij}$ ), shown on Table 4.6. The employment required to supply inputs to a particular industry is divided by the total employment (required to produce all outputs) of the receiving industry. The result is a coefficient indicating the number of jobs in a row industry related to employment in a column industry.

Using the estimates of additional employment projected by 1970 for each of the assisted industries (see

Table 4.5  
E<sub>ij</sub> (employment) coefficients, study area, 1967

Study area industries supplying	Assisted industries purchasing									
	101 Slaughtering and meat	261 Household furniture	304 Metal stamping	306 Hardware, tools and cutlery	308 Machine shops	311 Agricultural implements	325 Motor vehicle parts	335 Communications equipment	351 Clay products	Total
	T1									T2
252 Veneer and plywood mills		00188								
311 Agricultural implements					02893					
304 Metal stamping				00046			02744	00074		
306 Hardware, etc.								01164		
332 Manufacture of major appliances						00032				
Agriculture	00814									
Mining									00385	
Total	00814	00188		00046	02893	00032	02744	01238	00385	

Table 4.6  
A<sub>ij</sub> (input-output) coefficients expressed as cents' worth of inputs per dollar of output, study area, 1967

Study area industries supplying	Assisted industries purchasing									
	101 Slaughtering and meat	261 Household furniture	304 Metal stamping	306 Hardware, tools and cutlery	308 Machine shops	311 Agricultural implements	325 Motor vehicle parts	335 Communications equipment	351 Clay products	Total
	T1									T2
252 Veneer and plywood mills		00280								
311 Agricultural implements					03894					
304 Metal stamping				00115			19354	00095		
306 Hardware, etc.								00593		
332 Manufacture of major appliances						00046				
Agriculture	00055									
Mining									00571	

Table 4.7  
Projected indirect employment impact, 1970

Study area industries supplying	Assisted industries purchasing										
	101 Slaughtering and meat	261 Household furniture	304 Metal stamping	306 Hardware, tools and cutlery	308 Machine shops	311 Agricultural implements	325 Motor vehicle parts	335 Communications equipment	351 Clay products	Total	Total value of all study area outputs for row industries
										T1	T2
252 Veneer and plywood mills		4.28								4.28	4.28
311 Agricultural implements					5.52					5.52	5.52
304 Metal stamping				0.28			9.05	1.08		10.41	9.05
306 Hardware, etc.								16.77		16.77	—
332 Manufacture of major appliances						0.11				0.11	0.11
Agriculture	2.05									2.05	2.05
Mining									0.83	0.83	0.83
Combined total								17.85		40.00	21.81

Table 4.8  
The destination of outputs from ADA industries study area (\$,000)

Outputs from assisted industries	Destination of outputs					
	306 Hardware, tools and cutlery	334 Household radios and television	335 Communications equipment	Manufacturing sector total	Final demand	Total
141 Soft drinks					450.0	450.0
286 Commercial printing					8.5	8.5
304 Metal stamping	4.5	7.5	12.5	24.5	10.5	35.0
306 Hardware, etc.		21.7	78.3	100.0		100.0
309 Miscellaneous metal fabrication					6.7	6.7
311 Agricultural implements					2.5	2.5
335 Communications equipment		30.0		30.0		30.0
Total	4.5	59.2	90.8	154.5	498.2	652.7



Chapter III) the  $E_{ij}$  coefficient is multiplied by the expected total employment for the column industry at that date to arrive at an estimate of the likely employment requirements in the supplying industries. Table 4.7 presents the results in the same format as the 1967 data on Table 4.4. Column T1 shows that the over-all indirect employment is likely to rise by 1970 to 40. The double counting error is removed in column T2 to arrive at a net total close to 22. It is clear that the greater part of the additional employment generated between those years through input-output linkages will be derived from interactions between pairs of assisted firms.

The calculation of a multiplier relating directly induced employment, due to the ADA scheme, with indirectly generated employment, based on the inter-industry linkages of assisted firms, is little more than a technical exercise for data currently available. It is, as yet, too early to identify meaningful local multiplier effects emanating from the incentives program. As of August 1967, the multiplier linking directly induced employment in manufacturing to that indirectly induced in the same sector was 1.0085.

#### *Assisted firm inter-industry output linkages within the study area*

So far, the discussion of the inter-industry impact of the scheme has been restricted to the backward linkages of the assisted plants. Their forward or output linkages are shown in Table 4.8. This table could, of course, have been combined with Table 4.3 in the form of a complete input-output table for transactions by the assisted plants, but it was felt that dividing them into their forward and backward components would facilitate simple presentation. Most of the transactions recorded in Table 4.8 reproduce, from the output viewpoint, those already recorded on Table 4.3. However, the distribution of outputs from the assisted plants to those which did not receive assistance under the ADA scheme, adds a new component.

In total, outputs to the value of \$652,700 were distributed to the study area by the assisted plants. The bulk of this (\$498,200) went to various local final demand sectors. Goods and services(3) worth only \$154,000 went as inputs to the manufacturing sector. Of this, \$95,300 took the form of transactions between pairs of assisted firms already recorded from the input viewpoint on Table 4.3. The remainder, \$59,200, is the value of outputs distributed by assisted firms in the study area to those that did not receive assistance. In fact, the destination for all of this is a single firm in a branch of the electronics industry. While the ability of this factory to make use of locally produced outputs is an important by-product of the ADA scheme, it is

unlikely that this situation has any impact on its employment.

The lack of significance, for the assisted plants in general, of the size of the local market is made clear by the fact that only 1.47% of the value of their outputs goes to final demand within the study area. An important qualification to this, however, as Table 4.8 shows, is that a number of the smaller industries, whose outputs are not large in the grand total, are wholly dependent on the local market for their business. For these, the direct and indirect effects of the incentives scheme on the various elements of local final demand will be an important factor governing future employment totals. This aspect of the impact of the incentives program is discussed in more detail in Chapter VI.

#### **The indirect impact of the ADA program on wage rates**

One of the important objectives of the ADA incentives program was to raise median family income in the designated area. This can be brought about by a program such as that adopted by ADA in three main ways. Primarily, it can be achieved by providing additional employment in a wider range of skill classifications. Secondly, it can be achieved through the integration of a greater part of the local labor force into the provincial and national wage bargaining system by means of the centrally negotiated contract agreements of the newer factories. Thirdly, it can be brought about by the general pressure exerted across the board, on local wage rates by the increased demand for local labor relative to supply. All three forces have acted in concert to bring about, even by the survey date, significant changes in wage rates in the southern Georgian Bay area. This may be considered one of the most important aspects of the indirect impact of the scheme to date.

#### **The indirect impact of the ADA program on wage rates in different skill categories**

The skill classifications applied in the case of wage rates for hourly workers prove difficult to interpret as they mean little in the sense of formal training. The terms "skilled", "semi-skilled", and "unskilled", used in the following text, should be regarded as shorthand descriptions for the wide variety of skill and job classifications found in the upper, middle and lower pay ranges of each factory. The terms should not be taken to have any precise technical significance as far as levels of skill are concerned.

Table 4.9 shows average hourly wage rates in the designated area for 1964 and 1967. From this it can be seen that there was a significant percentage increase for all grades over the period. For males, hourly wages in the

Table 4.9  
Designated area average hourly wage rates for male and female,  
skilled, semi-skilled and unskilled workers, 1964 and 1967

Sex and skill category	1964		±10	1967		±10	Per cent change in mean 1964, 1967
	Number of factories	Mean wage rate		Number of factories	Mean wage rate		
Male skilled	49	1.64	.43	93	2.19	.40	33.5
Male semi-skilled	48	1.42	.38	92	1.81	.33	27.5
Male unskilled	45	1.15	.37	72	1.59	.26	38.3
Female skilled	13	1.23	.35	19	1.54	.27	25.2
Female semi-skilled	20	0.98	.30	34	1.40	.21	42.8
Female unskilled	23	0.82	.29	33	1.25	.16	53.6

Note: The male skilled entry in the ±10 column indicates that 68.26% of the factories had a male skilled hourly wage rate between \$1.21 and \$2.07 in 1964.

skilled group rose by 33.5%, in the semi-skilled by 27.5%, and in the unskilled by 38.3%. On the female side, skilled workers, of which there were very few in the designated area, experienced an increase of 25.2%, semi-skilled 42.8%, and unskilled 53.6%. In general terms the lower paid workers, especially female, saw the greatest relative increase in their wage rates during the designation period.

Although direct comparison is difficult due to the problems of skill classification(5), Table 4.10 attempts to relate selected wage rates in the designated area to their equivalents in Ontario as a whole for the two years in question. From this there is evidence to show that, while average wage rates in 1964 were significantly lower in the designated area than in Ontario, they increased in the intervening years at a faster rate than those in the province and by 1967 were much closer to parity.

Table 4.11 presents average hourly wage rates for the peripheral area in the same format as in Table 4.9 for the designated area. This permits an interesting comparison

to be made between wage rates in the designated area and those in the hitherto faster developing, more industrialized, peripheral area to the south. In 1964, average hourly wage rates in almost every grade were considerably higher in the peripheral area (Table 4.12). The rapid increase in average wage rates in the designated area which led to the closing of this gap is illustrated in the percentage change columns of Tables 4.9 and 4.11. In every skill grade, the relative increase in the average hourly wage for the designated area is considerably greater than for the equivalent grade in the peripheral area. The greatest differentials occur in the female semi-skilled and unskilled groups where the figure for the former is more than double that for the latter.

This provides some evidence that, during the years when the first effects of designation were being felt in the southern Georgian Bay region, average hourly wage rates in the area were rising significantly faster than the norm for the province as a whole and for the better developed peripheral area to the south. This differential

Table 4.10  
Comparison of average wage rates between Ontario and the designated area, 1964-1967

Sex and skill category	Ontario wage rates			Designated area wage rates		
	1964	1967	Per cent change	1964	1967	Per cent change
Male skilled	2.16	2.45	13.4	1.64	2.19	33.5
Male unskilled	1.61	1.76	9.3	1.15	1.59	38.3
Female unskilled	1.15	1.40	21.7	0.82	1.25	52.4

Source: compiled from an annual publication entitled *Wages, Salaries and Hours of Labour*, Department of Labour, Ottawa, and also from the survey compiled by the authors.

Table 4.11  
Peripheral area average hourly wage rates for male and female,  
skilled, semi-skilled and unskilled workers, 1964 and 1967

Sex and skill category	1964 wage rates			1967 wage rates			Per cent change 1964-1967
	Number of factories	Mean wage rate	$\pm 1\sigma$	Number of factories	Mean wage rate	$\pm 1\sigma$	
Male skilled	113	1.87	.38	150	2.23	.39	19.2
Male semi-skilled	112	1.53	.30	152	1.81	.34	18.3
Male unskilled	74	1.38	.27	105	1.69	.18	22.5
Female skilled	12	1.47	.46	23	1.73	.37	17.7
Female semi-skilled	29	1.28	.24	46	1.50	.28	17.2
Female unskilled	38	1.12	.23	51	1.40	.18	25.0

Table 4.12  
The difference between the designated and the peripheral area in average hourly wage rates for male and female skilled, semi-skilled, and unskilled workers in 1964 and 1967

Sex and skill category	1964 wage rates			1967 wage rates		
	Designated area	Peripheral area	Per cent difference	Designated area	Peripheral area	Per cent difference
Male skilled	1.64	1.87	14.0	2.19	2.23	1.8
Male semi-skilled	1.42	1.53	7.7	1.81	1.81	0.0
Male unskilled	1.15	1.38	20.0	1.59	1.69	6.2
Female skilled	1.23	1.47	16.3	1.54	1.73	12.3
Female semi-skilled	0.98	1.28	23.4	1.40	1.50	7.1
Female unskilled	0.82	1.12	26.8	1.25	1.40	12.0

in the rates of increase was sufficiently large to close the considerable gap which had previously existed between the designated area and these two regions.

#### Other factors influencing wage rates

It is impossible, within the scope of this report, to evaluate all the factors which may have given rise to such a significant improvement in the relative wage position of the designated area. Not all of them may have been directly or indirectly associated with the operation of the assistance scheme. However, among the most important influences on the average wage rates in 1967 must have been

1. the structural impact on the average wage rate due to the generally higher wages paid by the assisted firms, and
2. the impact on the labor factor market generated by a sudden increase in the demand for labor, particularly among concerns willing to pay, by local standards, premium wage rates.

While some quantitative assessment may be made of the impact of the first, the evaluation of the second must depend largely on subjective observation and inference.

#### *The effect of higher wages paid by ADA assisted firms*

Table 4.13 presents the details of average hourly wage rates for assisted and non-assisted plants in 1967. It is clear that both categories of assisted plants exert a strong upward weighting effect on mean wages. This is particularly the case with the male rates in the higher skill classes. For the female rates differentials are less extreme. To make the general point more succinctly, a comparison of average pay per head, per year, derived from Table 3.11 is presented in Table 4.14.

The averages in Table 4.14 are obtained by dividing the total payroll for 1967 by the total of all workers, both hourly and salaried for that year. It is interesting to note that measured in this way, there is still a significant difference between the peripheral and the designated area in spite of the apparent narrowing of the gap between them in hourly wage rates. This is a reflection of the continuing structural differences between them in

Table 4.13  
Average hourly wage rates for non-assisted, expanded and new plants  
by sex and skill category, 1967

Sex and skill category	Non-assisted plants			ADA assisted plants					
	Number of factories	Mean	$\pm 1\sigma$	Expanded plants			New plants		
				Number of factories	Mean	$\pm 1\sigma$	Number of factories	Mean	$\pm 1\sigma$
Male skilled	41	2.13	.41	10	2.45	.21	12	2.35	29
Male semi-skilled	41	1.77	.33	10	1.95	.21	9	2.00	23
Male unskilled	36	1.55	.27	8	1.68	.20	14	1.64	21
Female skilled	8	1.46	.19	5	1.76	.35	0	n.d.	n.d.
Female semi-skilled	15	1.44	.24	7	1.33	.13	4	1.35	16
Female unskilled	16	1.22	.15	6	1.23	.15	6	1.34	15

Table 4.14  
Average yearly pay per worker in the study area,  
designated area and peripheral area,  
classified by plant

Area	All plants	Non-assisted plants	Expanded assisted plants	New assisted plants
Study area	3,840			
Designated area	3,060	2,670	3,530	4,060
Peripheral area	4,300			

the relative distribution of the work force among the higher and lower paid occupations.

The newer assisted plants are evidently closer to the peripheral area in their average pay per head than to the designated area while the expanded plants lie somewhere between the two. Both have an important influence in raising the mean value for the designated area toward the norm for industrial Ontario. The ADA program, chiefly by means of the new plants set up in response to its incentives, has effected a transplantation into the area of an important nucleus of wage rates not significantly different from those in the more heavily industrialized parts of Ontario.

#### *The effect of the increased competition for labor*

Though its precise impact is difficult to evaluate, the competition for labor generated by the creation of some 2,200 new jobs in the designated area within a period of less than three years has also been a powerful factor in forcing up wage rates. Pressure on the labor market has, however, been somewhat uneven in its impact affecting some, but by no means all, types of workers. It has also been spatially uneven with some areas experiencing labor shortages more than others.

#### *Competition for male labor*

The heaviest pressure on the labor market has been for male skilled workers, still in very short supply in relation to the huge demand for electricians, machinists, mechanics and carpenters generated by the arrival of the new plants. Workers in these trades are in short supply in Canada as a whole but in the designated area the situation is exaggerated to the point where genuine shortages exist. Some of the newer plants have turned to local contractors for plant maintenance services, others have sponsored migrants from Europe or attempted to bring in tradesmen from the Maritimes. Premium wage rates are available for these men but it appears that they are simply not available within the area.

There were signs, in May 1968, that the shortage in skilled grades of male labor was being extended in some areas to the less skilled occupations. This was particularly the case in Collingwood where the prospect of a new glass factory sponsored by the incentives scheme entering the labor market with huge demands for male labor is generating considerable apprehension among established employers. A number of firms in Collingwood claim to have abandoned expansion plans in response to the threatened shortage of male labor, and concern over this problem has prompted the setting up of an employers' organization to foster group action in solving it. Not all those concerned with the labor situation in Collingwood are convinced, however, that a serious labor shortage is imminent. It is considered in some quarters that current apprehension in this respect is largely a function of the over-ambitious estimation of labor needs among the newer concerns.

The situation in Owen Sound and Midland, as far as the demand for male labor in the lower grades of skill is concerned, seems less acute. Individual employers in both towns claim to be so concerned about labor

shortage that they have abandoned expansion plans locally. However, the majority of firms seem content with present conditions.

### *Competition for female labor*

Throughout the entire designated area the female labor market has been extremely elastic to the demands of the new plants. To a significant degree the new, and in some areas extremely heavy, demand for female workers has been met by a rise in participation rates. In 1964 only 26.2% of the hourly paid labor in the designated area was female. In 1967 the proportion had risen to 36.0%. Many middle-aged, married women have been drawn into the labor force and many younger women previously forced to seek jobs outside the area have been able to find employment nearer home.

As of August 1967, more than 60% of the directly induced labor in the assisted plants were female, and yet the survey at that time showed a good deal of elasticity in this market. However, a brief review of the situation in May 1968 discovered that, in the opinion of the CMC managers in Collingwood and Midland, little surplus female labor remained. Significantly at this stage the impact of the ADA program was shifting its emphasis from females to males.

### *Other factors influencing labor shortages*

The bargaining power of labor in all grades has been dramatically increased and many older established firms in the area have been receiving unprecedented wage demands from their employees for whom the choice of employment has been dramatically widened. High levels of labor turnover have been a recurring problem for many of the newer factories, and with the arrival of real labor shortages this is likely to increase, as is the pressure on local wages.

An important question which must be raised at this point is how can an area which was designated because of chronic unemployment, be experiencing symptoms of labor shortage so soon after the start of the ADA scheme? There is some evidence to support the hypothesis that there is a close association between this problem and the problem of a shortage of housing, particularly in the three main towns in the designated area.

Discussions with factory managers and the officials of local manpower centres seem to indicate that, as yet, little inroad has been made into the harder core pockets of unemployment in the rural areas tributary to the three main centres. Most of the employment tapped to date has come from the municipalities themselves. This is, perhaps, the situation which would be expected at this stage in the scheme's impact on the area. Work

conducted elsewhere(6) on employment impact of area development schemes has shown that the initial labor needs of new plants are generally supplied by a 'sideways' movement of labor already employed when the scheme began. Over time, this redistribution of the labor force in response to the higher wage rates of the new factories forces the firms with lower wage rates to draw in elements of the local unemployed so that some of the hard-core is then penetrated. As the hard-core unemployment in the southern Georgian Bay region is particularly oriented toward rural areas, it is at this stage that factories should be looking to areas outside the main towns for their workers.

An important barrier in the way of such an adjustment to labor needs in the case of the designated area appears to be the housing problem. Many of the firms which have so far sought labor outside the towns are those working shift systems of operation. Shift-work has proved less popular in attracting labor from within the municipalities in spite of the wage rates associated with it. The experience of personnel officers in such firms, backed up by the views of local CMC managers is that many potential applicants would have been willing to take on shift-work had they been able to find permanent accommodation of the right type within easy reach of the factory. This argument applies with less force to factories with normal working hours.

Another way in which the housing problem may have affected the natural adjustment of the labor market to the new demands put upon it, has been by holding down immigration into the area from longer distances. Manpower Centres in the designated area have recorded enquiries for employment considerably in excess of the number of vacancies currently available. Many of these are from residents of Toronto or the industrial areas of the 'Golden Horseshoe' who would prefer to live in the Georgian Bay region were suitable housing and employment available. The fact that so few of these enquiries are followed up by serious applications for employment is put down by CMC and factory managers to the serious shortage of low and medium priced housing in the area. This whole question, which is in part raised through the indirect impact of the ADA scheme, is sufficiently important to be treated in more detail in the following section.

### **The indirect impact of the ADA program on land values and the housing market**

To examine local trends in housing and land prices in the designated area between 1964 and 1967 a brief pilot study was carried out in August 1968. Collingwood was selected for this purpose as contact with local plant



managers and municipal officials had indicated that the housing problem and its side effects on the labor supply situation in the town were particularly severe. Once again it is impossible to say with accuracy how much of the pressure on the local land and housing market is an indirect result of the operation of the ADA program. The connection between the two can only be inferred.

The survey was based on a comparison of the selling prices, for 1963-64 and 1966-67, of residential properties and lots in the town which had come up for sale in both years. Thus the comparison is in prices received at the different dates for the same lot or house.

#### The indirect impact on the housing market

The housing sample consists of 37 properties. Their average selling price in 1963-64 was \$9,543. In 1966-67 this price had risen to \$13,342, an increase of 39% over the earlier figure. It is acknowledged that the sample may well be biased since it contains only properties which sold at least twice within five years. Nevertheless, the percentage increase in selling price in Collingwood is considerably higher than the 19.3% average over 23 other Ontario centres for a roughly similar time period.

Table 4.15 shows changes in average prices for selected Canadian centres between 1965 and 1967. From this it can be seen that Collingwood, and Owen Sound which appears on the list with a 26% increase, are both high by comparison with, for example, Barrie where prices increased by 14%. These increases are comparable with those of larger metropolitan centres where the pressure on house prices is acknowledged to be severe. In these metropolitan areas increases of the order of 30% have been experienced over the same period.

#### The indirect impact on land values

The land value sample consists of 27 units which changed hands at both dates. For these, the average percentage increase in selling price is a staggering 127.9%. In a number of individual cases the selling price of a lot tripled between 1963-64 and 1966-67. Just how much of this sharp increase is due to an increased demand for industrial and residential land in Collingwood cannot be measured. However, discussions with local employers, realtors and Manpower Centre personnel suggested that the anticipated increase in demand for land and property began to result in an active real estate market after 1964. Prior to that date the market had been sluggish. For example, average annual increases in house prices prior to 1964 were about 5.7%, but after that date they quickly rose to the current 12 to 15% figure.

Table 4.15  
The average selling prices of houses in  
selected Canadian urban areas, 1965 and 1967

Urban area	Average selling price		Per cent change 1965-67
	1965	1967	
	\$	\$	
Toronto	18,883	24,681	31
Vancouver	13,965	17,836	28
Hamilton	15,131	19,435	28
Montreal	22,915	24,758	8
Calgary	14,816	16,781	13
Winnipeg	13,588	13,878	2
Ottawa	17,829	21,740	22
Edmonton	14,893	16,093	8
London	13,510	16,029	19
Kitchener	16,808	23,504	40
Victoria	12,386	15,250	23
Windsor	12,213	16,111	32
Saskatoon	11,677	14,898	27
Regina	12,395	13,782	11
Sudbury	17,642	19,043	8
Oakville	20,207	23,784	18
St. Catharines	13,563	17,632	30
Brantford	12,499	16,285	30
Galt	13,752	17,652	28
Oshawa	15,641	16,370	5
Quebec	22,026	23,046	5
Halifax	16,392	19,143	17
Guelph	14,579	18,061	24
Kingston	16,402	17,289	5
Brampton	16,349	21,857	34
Hull	11,794	15,577	32
Sault Ste. Marie	13,390	14,024	5
Peterborough	11,353	14,662	29
Lethbridge	11,633	12,665	9
North Bay	12,121	12,822	6
Owen Sound	10,000	12,625	26
Barrie	13,316	15,307	15
Fort William	10,869	11,848	9
Moncton	13,695	16,367	19
Welland	13,739	17,959	31
Simcoe	14,629	15,522	6
Belleville	13,900	14,572	5
Collingwood	9,593	13,342	39

Source: computed from figures given in *House Price Trends and Residential Construction Costs in Metropolitan Toronto and Canada*, Research Department, Toronto Real Estate Board, 1968. Figures for Collingwood from the Registry Office, County of Simcoe, Barrie, for 1963-64 to 1966-67.

Combined with the effects of the high interest rates experienced throughout Canada in recent years, such steep increases in house and land prices have made home ownership in Collingwood extremely costly. In comparison with hourly wage rates in the area, which are not yet at parity with provincial ones in general, it is difficult to see how the average worker could afford to enter the

housing market under current conditions. This observation has been supported by many local officials.

At present, many of Collingwood's workers are commuting from a radius of 25 to 30 miles and the number of workers and their families taking up permanent residence in winterized cottages is increasing. There does, therefore, seem to be some justification for the view that part of Collingwood's apparent labour shortage problem is associated with the physical shortage of houses of the right price for the income of the hourly paid worker.

*The real estate situation in other designated area towns*

Discussions in Owen Sound indicate that the housing situation there is similar to that in Collingwood. The increased demand for housing and land has raised prices to the point where good, cheap accommodation is almost impossible to obtain.

In Midland a similar problem exists with regard to low-priced housing, but for houses in the higher price ranges quite the opposite situation prevails. Speculation, sparked off by the anticipated effects of the ADA incentives scheme, particularly in bringing in highly paid staff and research personnel, led to the construction of 75 high-priced houses in two subdivisions. The expected inflow of highly paid workers did not, however, materialize and currently (June, 1968) 45 of the properties completed in early 1967 are still vacant. Here, then, chronic undersupply and oversupply of housing exists side by side with a price and interest rate barrier which prevents the absorption of one by the other.

A scheme such as that applied by the Area Development Agency to the southern Georgian Bay region

inevitably generates stresses and disequilibria. Indeed, such stresses are often the means by which the development process is induced to begin (7). Through its indirect impact the program has created new demand schedules for several commodities and for most types of labor, and has fundamentally altered the balance of supply and demand in housing and land markets. It has created pressures in many directions, on commodity prices, wage rates and land values, and it is the reaction to such pressure that will characterize the main impact of the scheme after the direct input of new jobs and factories is completed.

However, at the time of the survey, adjustments to the new pressures had been relatively small. The demand for new ranges of commodities and services in the designated area have, as yet, called in few local entrepreneurs willing to capitalize on the new conditions. Rising wage rates have not yet stimulated great in-migration of new workers and rising house and land prices have not persuaded many property developers to invest further capital in the area. More noticeable at this stage are the blockages in the adjustment process, for example, the absence of various types of labor and the associated shortages of certain types of housing. The identification of such blockages and the formulation of methods of removing them represents the current phase in the development process. Once they are removed the evolutionary process will go on again, encountering and resolving other such difficulties in its progress. In the long run these pressures and stresses generated through the impact of the scheme, and the adjustments which they call forth within the local area, will be of greater importance in promoting a more dynamic economic growth than the initial direct introduction of new jobs and factories.



## The structural and spatial impact of the program

To this point the impact of the ADA scheme has been discussed chiefly in relation to the factories which received assistance through the incentives program. It is now proposed to take a broader view and make some assessment of the net impact of the scheme on the general structure and spatial distribution of industrial activity in the designated area. Once again comparison with the peripheral area will provide a useful benchmark against which the relative changes can be measured.

### The impact on industrial structure

In Chapter II a brief study was made of the economic conditions prevailing in the southern Georgian Bay region before 1964. At that time the symptoms of a slowly changing, quasi-stagnant state in the area economy were readily apparent. Unemployment was relatively high, median incomes were low and industrial employment showed no signs of expansionary momentum. At that time the three CMCs which later became designated areas were slowly becoming afflicted with the "backwash" or "polarization" effects commonly identified with depressed areas (1).

The situation was not uniformly depressing. There were signs, particularly in the east closer to the growth axis provided by Highway 400, of a slow movement into the area of newer industrial concerns forced out of more heavily developed parts of Ontario by pressures on land, wage rates and housing. While such a movement had reached encouraging proportions in such centres as Barrie and Orillia, its penetration to the bayshore towns had been too limited to halt significantly the incipient rundown of the region. It had, however, provided the designated area with a sprinkling of factories in, for instance, the domestic appliance industries, which greatly improved its basic industrial structure.

#### *The industrial structure of the designated area, 1964*

The details of the industrial structure of the three CMCs (in 1964) are shown in Tables 2.10 to 2.13. Only

the salient features need therefore be repeated here. At that time the heaviest weight of employment (39.3% of the total) was in three main groups

08 Wood industries	12.5%
13 Metal fabricating	13.4%
15 Transportation equipment	13.4%

other groups in the second rank of importance were

01 Food and beverages	8.3%
04 Leather industries	7.5%
14 Machinery industries	8.6%
20 Miscellaneous manufacturing industries	7.7%

the bulk of the remainder was made up by

05 Textiles	4.6%
07 Clothing	3.3%
09 Furniture and fixtures	5.7%
11 Printing and publishing	6.1%
16 Electrical products	3.8%
17 Non-metallic mineral products	2.3%

In 1964, thirteen of the twenty two-digit classes of the SIC provided employment for an appreciable number of workers in the designated area. Diversification of industry was, therefore, not one of the prime needs of the region. Neither, as indicated in Chapter II, was the structure of the work-force badly distributed. More than 40% of the total employment was situated in growth industries.

#### *The basic economic problem of the designated area*

The problem appears not to have been the familiar structural one brought about by overdependence on a limited number of slow growth industries, but rather one of competitive growth performance (2). In spite of a relatively satisfactory structure, before 1964 employment opportunities in the region were not expanding sufficiently fast to absorb all the potential workers, nor were wage rates high enough to raise average real incomes. A particular problem seems to have been that

the rate of industrial expansion in the area was not sufficiently fast to draw in the elements of the rural population whose living standards heavily weight the median income figure. What was required, therefore, was a stimulus for industrial change to capitalize on those favourable elements already present in the industrial structure.

#### *The industrial structure of the peripheral area, 1964*

For the peripheral area this stimulus had been provided spontaneously by the developments in the east along the Highway 400 axis. Its industrial structure, even by 1964, had an important leavening of growth industries, though in many respects the forces for decline in its make-up were more powerful than those in the designated area. The prime difference between the two, it seems, was one of scale. While the newer industries in the designated area could be described as thinly scattered, those in the peripheral area were concentrated (particularly in Barrie), and were capable of generating a powerful impact on the regional economy.

Five groups of industry accounted for the greater proportion (66.3%) of the peripheral area's employment in 1964:

01 Food and beverages	13.8%
08 Wood industries	11.4%
09 Furniture and fixtures	12.1%
14 Machinery industries	12.8%
16 Electrical products	15.2%

The second rank in order of importance contained only two classes:

13 Metal fabricating	6.7%
20 Miscellaneous manufacturing industries	7.6%

The powerful forces for decline can be readily identified among those primary processing industries still retaining an important share of the area's employment. The combined share of total employment in the machinery and electrical products industry, however, testifies to the undoubted growth potential present. In both respects there is an important difference of scale in comparison with the designated area which had, at that time, no particularly strong forces to pull it in either direction.

#### **The ADA program as a stimulus for change**

It seems not unreasonable to assume that, in time, those spread effects from the Toronto growth pole which had already affected the eastern part of the peripheral area would lend some weight to the forces for industrial growth in the designated area (3). Some artificial stimulus was, however, necessary if the timetable

for such a development was to be appreciably brought forward.

The stimulus was provided by the commencement of the ADA incentives scheme in 1965. In addition it greatly added through its direct impact to the favourable element in the industrial structure of the designated area. Between 1965 and 1967, it is possible to trace the beginnings of an increase in the scale of industrial activity, and an acceleration in the pace of employment growth.

Tables 5.1 and 5.2 show by two-digit and three-digit code respectively, the details concerning the distribution of manufacturing employment in 1964 and 1967. Perhaps the most important change from the 1964 situation (Tables 2.10 and 2.11) is the increase in the over-all size of the employed labor force. In 1964 it had been 7,687. By 1967 it had risen by 2,097 to 9,784. Unfortunately, there is no data available for the construction of a time series for manufacturing employment which would put the increase in its proper perspective. There is, however, a series continued from Table 2.3 based on total employment which can be used to show (Figure 5.1) the spectacular acceleration in employment growth after 1964 from a relatively static situation beforehand. A series based solely on manufacturing employment might be expected to show the same trend.

#### *The industrial structure in the designated area, 1967*

In structural terms, the 1967 situation is notable for the elevation of a new growth oriented industry into those classes which claim more than 10% of the total manufacturing labor force. Dominant in the relative employment situation at this time are

08 Wood industries	10.0%
13 Metal fabricating	10.9%
15 Transportation equipment	13.6%
16 Electrical products	11.1%

Electrical products manufacturing in 1964 had employed only 3.8% of the labor force in the designated area.

In the second group made up of industries with a 7% to 8% share of the manufacturing labor force, the food industries, machinery and miscellaneous manufacturing retained their 1964 importance. The only noteworthy change in this group is the fall in the share of the leather industries from 7.5% to 4.9%, an expected trend in a nationally shrinking industry.

Among the group with 2% to 7% of total employment in manufacturing, textiles improved its position from 4.6% to 6.3% and rubber manufacture, an entirely new industry, makes an appearance. Of the remainder, non-metal mining products (17) experienced a fractional

Table 5.1  
Employment in the designated area by major group, 1964 and 1967

Major group (Industry)	1964		1967	
	Employment	Per cent	Employment	Per cent
01 Food and beverage	638	8.3	706	7.2
03 Rubber	0	0.0	383	3.9
04 Leather	615	8.0	475	4.9
05 Textile	380	4.9	621	6.3
07 Clothing	272	3.5	186	1.9
08 Wood	987	12.8	982	10.0
09 Furniture and fixtures	459	6.0	522	5.3
10 Paper and allied	54	0.7	29	0.3
11 Printing, publishing and allied	499	6.5	579	5.9
13 Metal fabricating (except machinery and transportation equipment)	1,027	13.4	1,062	10.9
14 Machinery (except electrical)	692	9.0	851	8.7
15 Transportation equipment	1,027	13.4	1,324	13.6
16 Electrical products	211	2.7	1,089	11.1
17 Non-metallic mineral products	183	2.4	277	2.8
18 Petroleum and coal products	0	0.0	5	0.1
19 Chemical and chemical products	12	0.2	21	0.2
20 Miscellaneous manufacturing	631	8.2	672	6.9
Total	7,687		9,784	

Table 5.2  
Employment in the designated area by three-digit code, 1964 and 1967

Major group (1)	Three-digit code (2)	1964		1967		Col. 6 minus col. 4 (7)	Absolute change (8)
		Employment (3)	Per cent (4)	Employment (5)	Per cent (6)		
01	101	8	0.10	10	0.10	n.c.	+ 2
	105	123	1.60	99	1.01	- 0.59	- 24
	112	163	2.12	216	2.21	+ 0.09	+ 53
	123	97	1.26	95	0.97	- 0.29	- 2
	124	159	2.07	177	1.81	- 0.26	+ 18
	129	17	0.22	10	0.10	- 0.12	- 7
	139	3	0.04	0	0.0	- 0.04	- 3
	141	68	0.88	99	1.01	+ 0.13	+ 31
03	169	0	0.0	383	3.91	+ 3.91	+ 383
04	174	570	7.42	475	4.85	- 2.57	- 95
	179	45	0.59	0	0.0	- 0.59	- 45
05	197	169	2.20	197	2.01	- 0.19	+ 28
	201	113	1.47	189	1.93	+ 0.46	+ 76
	216	0	0.0	140	1.43	+ 1.43	+ 140
	229	98	1.27	95	0.97	- 0.30	- 3
07	243	102	1.33	51	0.52	- 0.81	- 51
	244	139	1.81	120	1.23	- 0.58	- 19
	245	31	0.40	15	0.15	- 0.25	- 16
08	251	67	0.87	67	0.68	- 0.19	n.c.
	252	171	2.22	57	0.58	- 1.64	- 114
	254	220	2.86	128	1.31	- 1.55	- 92
	256	71	0.92	64	0.65	- 0.27	- 7
	259	458	5.96	666	6.82	+ 0.86	+ 208

Table 5.2 (Cont'd)

Employment in the designated area by three-digit code, 1964 and 1967

Major group (1)	Three-digit code (2)	1964		1967		Col. 6 minus col. 4 (7)	Absolute change (8)
		Employment (3)	Per cent (4)	Employment (5)	Per cent (6)		
09	261	444	5.78	511	5.22	- 0.56	+ 67
	266	15	0.20	11	0.11	- 0.09	- 4
10	273	39	0.51	29	0.30	- 0.21	- 10
	274	15	0.20	0	0.0	- 0.20	- 15
11	286	99	1.29	103	1.05	- 0.24	+ 4
	289	400	5.21	476	4.87	- 0.34	+ 76
13	303	18	0.23	20	0.20	- 0.03	+ 2
	304	267	3.47	242	2.47	- 1.00	- 25
	305	80	1.04	226	2.31	+1.27	+146
	306	244	3.17	355	3.63	+0.46	+111
	308	33	0.43	96	0.98	+0.55	+ 63
	309	385	5.01	123	1.26	- 3.75	- 262
14	311	0	0.0	2	0.02	+0.02	+ 2
	315	692	9.00	849	8.69	- 0.31	+157
15	324	11	0.14	8	0.08	- 0.06	- 3
	325	0	0.0	208	2.13	+2.13	+208
	327	964	12.54	1,040	10.64	- 1.90	+ 76
	328	52	0.68	68	0.70	+0.02	+ 16
16	331	46	0.60	23	0.24	- 0.36	- 23
	334	0	0.0	184	1.88	+1.88	+184
	335	104	1.35	821	8.39	+7.04	+717
	336	61	0.79	61	0.62	- 0.17	n.c.
17	347	48	0.62	49	0.50	- 0.12	+ 1
	348	9	0.13	25	0.26	+0.13	+ 16
	351	105	1.37	170	1.74	+0.37	+ 65
	353	21	0.27	18	0.18	- 0.09	- 3
	356	0	0.0	15	0.15	+0.15	+ 15
18	369	0	0.0	5	0.05	+0.05	+ 5
19	375	12	0.16	21	0.21	+0.05	+ 9
20	381	285	3.71	330	3.37	- 0.34	+ 45
	383	126	1.64	96	0.98	- 0.66	- 30
	385	168	2.18	223	2.28	+0.10	+ 55
	397	8	0.10	0	0.0	- 0.10	- 8
	399	44	0.57	23	0.24	- 0.33	- 21
Totals		7,687		9,784			

relative gain. The rest, with the exception previously noted of electrical products industries (16), saw relative decline. By far the most impressive feature of the industrial structure of the designated area in 1967 is the proportion of the total manufacturing work-force in growth industries — an impressive 52.7%, which is approximately 10% more than in 1964.

The ADA scheme has brought in its train a major increase in the scale of industrial development in the designated area. Furthermore, it has resulted in a

significant acceleration in the growth of industrial employment and a substantial improvement in the growth potential of the area's industrial structure.

#### *The industrial structure of the peripheral area, 1967*

The degree of change in the peripheral area is less than that in the designated area for the same time period (Tables 5.3 and 5.4). In terms of total employment in manufacturing, it has experienced an increase of only

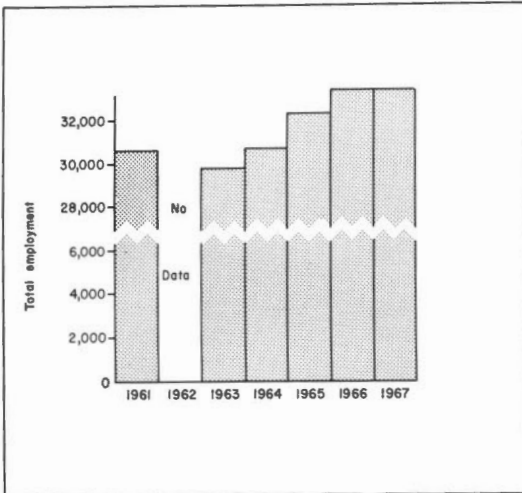


FIGURE 5.1

Total employment in the designated area, 1961-1967.

Table 5.3  
Employment in the peripheral area by major group, 1964 and 1967

Major group (Industry)	1964		1967	
	Employment	Per cent	Employment	Per cent
01 Food and beverage	1,818	14.0	2,024	14.7
03 Rubber	402	3.1	625	4.5
04 Leather	547	4.2	470	3.4
05 Textile	9	0.1	9	0.1
06 Knitting mills	0	0.0	27	0.2
07 Clothing	135	1.0	117	0.8
08 Wood	1,516	11.6	1,080	7.8
09 Furniture and fixtures	1,605	12.3	1,851	13.4
10 Paper and allied	91	0.7	205	1.4
11 Printing, publishing and allied	335	2.6	429	3.1
12 Primary metal	485	3.7	490	3.5
13 Metal fabricating (except machinery and transportation equipment)	877	6.7	1,166	8.4
14 Machinery (except electrical)	1,643	12.6	1,738	12.5
15 Transportation equipment	121	0.9	84	0.6
16 Electrical products	2,019	15.6	2,113	15.3
17 Non-metallic mineral products	237	1.8	218	1.6
19 Chemical and chemical products	182	1.4	311	2.2
20 Miscellaneous manufacturing	1,002	7.7	907	6.5
<b>Total</b>	<b>13,024</b>		<b>13,864</b>	

840 workers over the three-year period; its lead over the designated area in total manufacturing work-force is reduced from 39% to 29%. Structurally, the most important change between 1964 and 1967 is the dramatic fall in the relative importance of the wood industries which had 11.4% of the manufacturing employment in 1964, and only 7.8% in 1967, reducing to four the members of the group with a more than 10% share of total employment. These are

- 01 Food and beverages 14.7%
- 09 Furniture and fixtures 13.4%

- 14 Machinery industries 12.5%
- 16 Electrical products 15.3%

Significant relative gains were few. Only the metal fabricating industry (13) which raised its share from 6.7% to 8.4%, and the furniture and fixture industry (09) which raised its share by 1.3% saw upward changes of better than 1.0%. The leather and miscellaneous manufacturing industries are the only other industries to have experienced notable relative losses, 0.8% and 1.2% respectively.

Table 5.4  
Employment in the peripheral area by three-digit code, 1964 and 1967

Major group (1)	Three-digit code (2)	1964		1967		Col. 6 minus col. 4 (7)	Absolute change (8)
		Employment (3)	Per cent (4)	Employment (5)	Per cent (6)		
01	101	162	1.24	238	1.72	+0.48	+ 76
	103	347	2.66	418	3.01	+0.35	+ 71
	105	530	4.07	545	3.93	- 0.14	+ 15
	107	2	0.02	4	0.03	+0.01	+ 2
	112	26	0.20	0	0.0	- 0.20	- 26
	123	333	2.59	371	2.68	+0.09	+ 38
	124	18	0.14	18	0.13	- 0.01	n.c.
	129	233	1.79	209	1.51	- 0.28	- 24
	139	85	0.65	170	1.23	+0.58	+ 85
	141	82	0.63	51	0.37	- 0.26	- 31
03	163	329	2.52	404	2.91	+0.39	+ 75
	169	73	0.56	221	1.59	+1.03	+148
04	172	355	2.72	306	2.21	- 0.51	- 49
	174	162	1.24	134	0.97	- 0.27	- 28
	179	30	0.23	30	0.22	- 0.01	n.c.
05	221	9	0.07	9	0.06	- 0.01	n.c.
06	231	0	0.0	15	0.11	+0.11	+ 15
	239	0	0.0	12	0.09	+0.09	+ 12
07	243	135	1.04	117	0.84	- 0.20	- 18
08	251	149	1.14	159	1.15	+0.01	+ 10
	252	414	3.18	384	2.77	- 0.41	- 30
	254	487	3.74	62	0.45	- 3.29	- 425
	256	96	0.74	96	0.69	- 0.05	n.c.
	258	82	0.63	82	0.59	- 0.04	n.c.
	259	288	2.21	297	2.14	- 0.07	+ 9
09	261	1,418	10.90	1,676	12.10	+1.20	+258
	266	187	1.43	175	1.26	- 0.17	- 12
10	273	35	0.27	134	0.97	+0.70	+ 99
	274	56	0.43	71	0.51	+0.08	+ 15
11	286	192	1.47	257	1.85	+0.38	+ 65
	289	143	1.12	172	1.24	+0.12	+ 29
12	291	373	2.86	488	3.52	+0.66	+115
	296	2	0.02	2	0.01	- 0.01	n.c.
	297	110	0.84	0	0.0	- 0.84	- 110
13	302	3	0.02	2	0.01	- 0.01	- 1
	303	21	0.16	39	0.28	+0.12	+ 18
	304	247	1.89	258	1.86	- 0.03	+ 11
	305	66	0.51	264	1.90	+1.39	+198
	306	130	1.00	121	0.87	- 0.13	- 9
	307	106	0.81	130	0.94	+0.13	+ 24
	308	58	0.44	73	0.53	+0.09	+ 15
	309	246	1.89	279	2.01	+0.12	+ 33
14	311	398	3.05	343	2.47	- 0.58	- 55
	315	919	7.05	1,058	7.65	+0.60	+139
	316	326	2.50	337	2.43	- 0.07	+ 11
15	324	26	0.20	15	0.11	- 0.09	- 11
	325	79	0.61	62	0.45	- 0.16	- 17
	328	16	0.12	7	0.05	- 0.07	- 9
16	331	708	5.43	1,018	7.34	+1.91	+310
	332	968	7.44	816	5.88	- 1.56	- 152



Table 5.4 (Cont'd)  
Employment in the peripheral area by three-digit code, 1964 and 1967

	334	149	1.14	106	0.76	- 0.38	- 43
	336	49	0.38	27	0.20	- 0.18	- 22
	337	135	1.04	136	0.98	- 0.06	+ 1
	339	10	0.08	10	0.07	- 0.01	n.c.
17	347	98	0.75	110	0.79	+ 0.04	+ 12
	348	48	0.37	68	0.49	+ 0.12	+ 20
	351	15	0.12	17	0.12	n.c.	+ 2
	353	11	0.08	14	0.10	+ 0.02	+ 3
	355	15	0.12	9	0.06	- 0.06	- 6
	359	50	0.38	0	0.0	- 0.38	- 50
19	372	30	0.23	25	0.18	- 0.05	- 5
	374	9	0.07	0	0.0	- 0.07	- 9
	376	0	0.0	66	0.48	+ 0.48	+ 66
	377	95	0.73	180	1.30	+ 0.57	+ 85
	378	28	0.21	40	0.29	+ 0.08	+ 12
	379	20	0.15	0	0.0	- 0.15	- 20
20	381	304	2.33	160	1.15	- 1.18	- 144
	385	7	0.05	0	0.0	- 0.05	- 7
	393	406	3.11	463	3.34	+ 0.23	+ 57
	397	13	0.10	12	0.09	- 0.01	- 1
	399	272	2.09	272	1.96	- 0.13	n.c.
Totals		13,024		13,864			

In general, for the peripheral area, the pace of change has been slower over the three years and the predominant direction of those noticeable changes that did take place is downward. In 1967, the peripheral area still carries the unfavourable elements of 1964 in its make-up, and in two formerly important staple industries active decline has been experienced. The slow pace of upward movement in employment levels is, of course, closely related to the negative side-effects generated, through the operation of the ADA scheme, in the neighbouring region. Dependent, so far, on less powerful inducements to industry than those provided through the incentives program, it has witnessed plants potentially destined for its municipalities locating in the designated area to take advantage of the ADA program. Temporarily, there has been a hiatus in the location of plants in the vicinity of Highway 400, on which the present industrial structure depends for its growth elements. However, the competition for labor by the newer plants that had located in the vicinity of Highway 400 prior to 1965 has accelerated decline among the older industries.

In August 1967, the designated area could be compared favourably in a great many respects to the neighbouring peripheral area. Structurally and in terms of growth performance the differences that were apparent, perhaps five years ago, have been greatly reduced after its short spell as a designated area. It is, however,

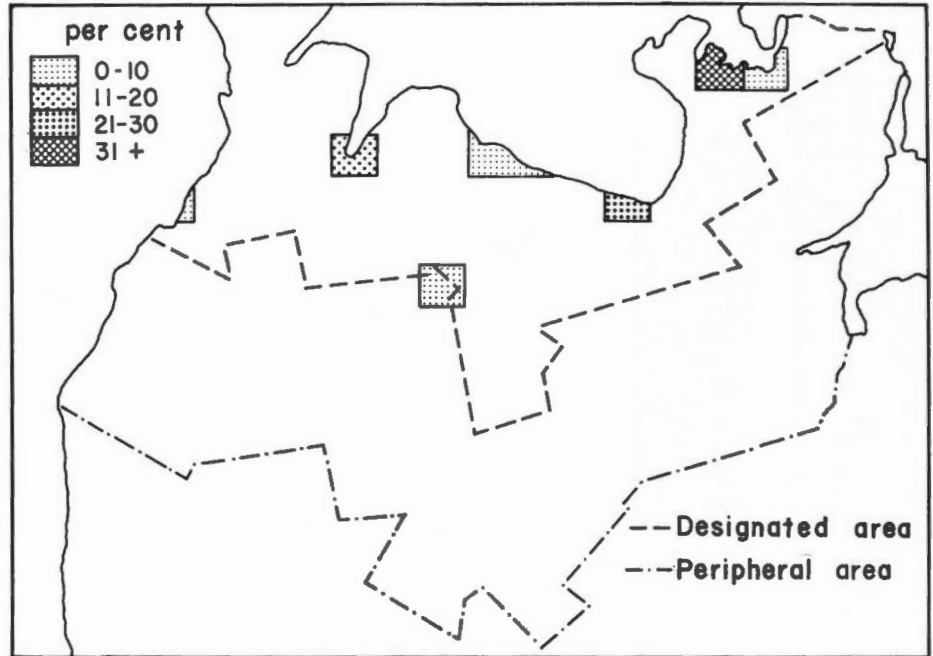
still farther away from the main growth poles of Ontario (in time-distance at least), and without the temporary alteration of space preferences in industrial location wrought by the ADA scheme such changes in comparative status would have taken considerably longer to evolve. With the termination of the incentives scheme effectively by December 1968, the distance factor will once again become important for future choices of location. Against this spatial disadvantage, the designated area can now set the advantages of a comparatively large scale working industrial complex which will generate its own industrial needs.

### The spatial impact of the ADA program

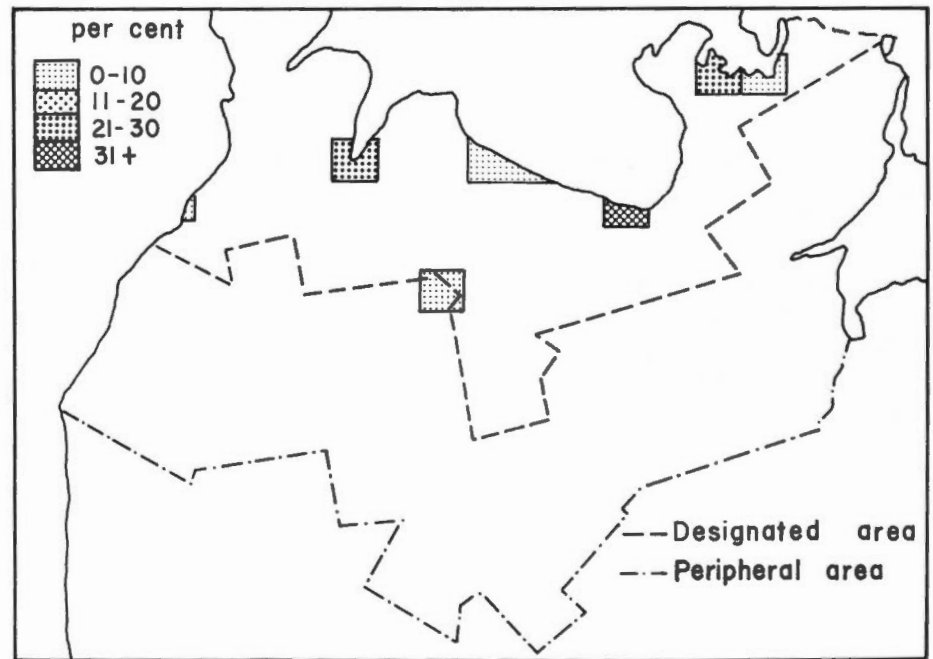
Thus far the designated area has been treated as an indivisible whole. The impact of the ADA program has, however, had a distinctive spatial as well as structural impact. To demonstrate this, Figures 5.2 to 5.4 show the spatial distribution of the main elements previously discussed in relation to the scheme's direct impact.

Figure 5.2 shows the spatial distribution of induced investment (replacement cost) as a result of firms receiving assistance from the Area Development Agency. It is clear from this that the greater part of the value of buildings and equipment brought in by the scheme was concentrated in the Midland area. More than 65% of the





**FIGURE 5.2**  
The spatial distribution of induced investment as a percentage of total induced investment, July 1967.



**FIGURE 5.3**  
The spatial distribution of induced employment as a percentage of total induced employment, July 1967.

total was localized in the Midland area in August 1967. Collingwood, by contrast, had received 21.4% and Owen Sound only 10.8%. It is worth repeating that some of the plants which represented the heaviest investment input through the scheme were not completed until after August 1967 and that none of these are in Midland. In more general terms it is important to note that 97.8% of the total induced investment was concentrated in the

three main municipalities of the designated area, and only a very small fraction of it found its way to smaller centres, such as Meaford, Port Elgin and Markdale.

Figure 5.3 shows the areal distribution of the directly induced employment generated by the survey date. In this case the striking feature is the evenness with which it had been spread among the three main centres. All had proportions close to 30% with 32.3% in

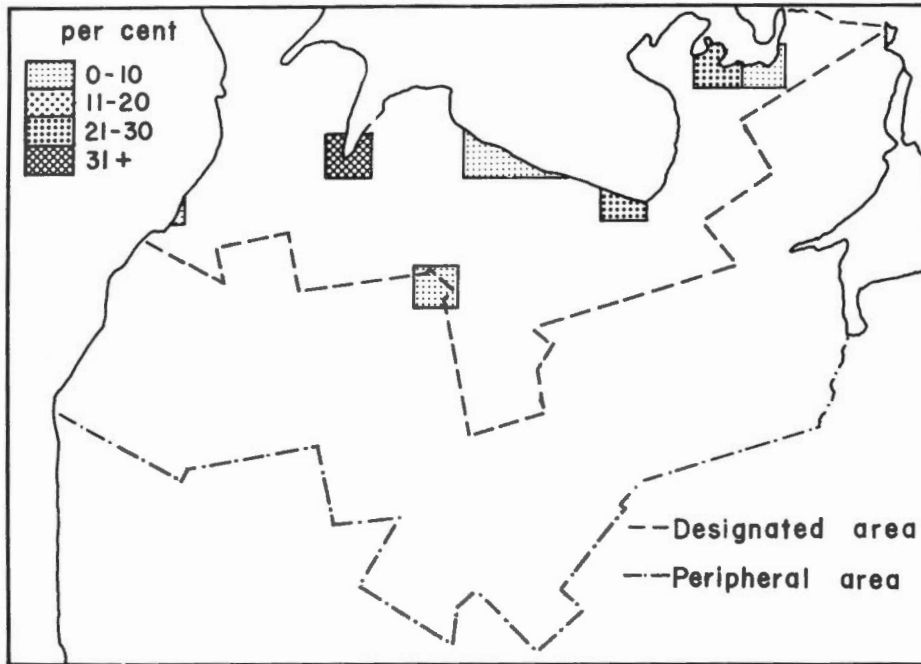


FIGURE 5.4

The spatial distribution of induced payroll as a percentage of total induced payroll, July 1967.

Collingwood, 30.8% in Midland and 29.1% in Owen Sound. The balance is made up by Meaford 5.5%, Port Elgin 0.9%, and Markdale 1.4%.

Figure 5.4 shows the distributions of the induced payroll due to the scheme and here a new order of relative importance emerges. Owen Sound claimed the greater part with 36.0% in comparison with 32.5% in Midland and 24.8% in Collingwood. This reversal of Collingwood's position with respect to payroll compared with employment is interesting. This occurred because the greater proportion by far of its induced employment was in the form of unskilled and semi-skilled workers, most of them females. Wage rates for these grades were particularly low, holding down the total payroll figure.

**Manufacturing employment changes in Canada Manpower Centres**

The series of Tables 5.5 to 5.10 present the details of the net impact of the ADA scheme on various aspects of the employment situation for each of the Canada Manpower Centres which make up the designated area.

*Owen Sound*

Between 1964 and 1967 the total number of workers in manufacturing in Owen Sound CMC increased by 17.0%. This represents a net increase of some 615 jobs over the period. In structural terms, as Tables 5.5 and 5.6 show, there is a distinct tendency for the traditionally important elements of the area's economic base to decline in importance and to be replaced by

newer growth oriented industries. The leather, wood and non-metallic mineral products industries all experienced a substantial decline as did the transportation equipment industry, heavily weighted here by its shipbuilding sub-group. At the other end of the scale, the rubber and metal fabricating industries raised their share of total employment by 6.1% and 5.1% respectively. Between the two extremes a wide variety of industries experienced relatively stable conditions. Illustrating the extent of the improvement in the industrial composition of the Owen Sound area in response to these changes, in 1964 31.6% of its workers were accredited to growth industries at the three-digit level, while in 1967 the proportion stood at 43.9%

*Collingwood*

Of the three CMCs making up the designated area, Collingwood is, perhaps, the one most powerfully affected by the impact of the scheme up to August 1967. Its employment rose from 1,684 in 1964 to 2,652 in 1967, an increase of 57.2% (Tables 5.7 and 5.8). Although statistics are not available to document it, a substantial proportion of this increase is in the female category.

Structural changes over the period are also far reaching. In 1964 three industries were dominant in Collingwood's industrial composition. These were

15 Transportation equipment	46.8%
01 Food and beverages	15.7%
09 Furniture and fixtures	11.2%

Table 5.5

Owen Sound CMC, workers in manufacturing by two-digit code, 1964 and 1967

Major group (Industry)	1964		1967		Per cent change
	Employment	Per cent	Employment	Per cent	
01 Food and beverage	178	4.95	191	4.54	-0.41
03 Rubber	0	0.0	257	6.10	6.10
04 Leather	272	7.56	153	3.63	-3.93
05 Textile	169	4.70	197	4.68	-0.02
08 Wood	839	23.33	889	21.11	-2.22
09 Furniture and fixtures	206	5.73	249	5.91	0.18
10 Paper and allied	54	1.50	29	0.68	-0.82
11 Printing, publishing and allied	474	13.18	524	12.44	-0.74
13 Metal fabricating (except machinery and transportation equipment)	248	6.89	505	11.99	5.09
14 Machinery (except electrical)	506	14.07	634	15.06	0.99
15 Transportation equipment	188	5.23	129	3.06	-2.17
16 Electrical products	211	5.87	271	6.44	0.57
17 Non-metallic mineral products	72	1.99	67	1.59	-0.40
19 Chemical and chemical products	12	0.33	21	0.50	0.17
20 Miscellaneous manufacturing	168	4.67	96	2.28	-2.39
Totals	3,597		4,212		

Table 5.6  
Owen Sound CMC, workers in manufacturing by three-digit code, 1964 and 1967

Three-digit code	Industry	1964		1967	
		Employment	Per cent	Employment	Per cent
101	Slaughtering and meat	8	0.22	10	0.24
105	Dairy factories	86	2.39	76	1.80
123	Feed manufacturers	53	1.47	47	1.12
129	Bakeries	10	0.28	3	0.07
141	Soft drinks	21	0.58	55	1.31
169	Other rubber	0	0.0	257	6.10
174	Shoes	272	7.56	153	3.63
197	Wool cloth mills	169	4.70	197	4.68
251	Sawmills	38	1.06	38	0.90
252	Veneer and plywood mills	171	4.75	57	1.35
254	Sash, door and planing mills	172	4.78	128	3.04
259	Miscellaneous wood	458	12.74	666	15.83
261	Household furniture	206	5.73	249	5.91
273	Paper box and bag	39	1.08	29	0.69
274	Other paper converters	15	0.42	0	0.0
286	Commercial printing	99	2.75	95	2.26
289	Printing and publishing	375	10.43	429	10.19
303	Ornamental and architectural metal	3	0.08	0	0.0
304	Metal stamping, pressing and coating	5	0.14	5	0.12
305	Wire and wire products	0	0.0	108	2.86
306	Hardware, tools, cutlery	232	6.45	324	7.69
308	Machine shops	8	0.22	68	1.61
309	Miscellaneous metal fabrication	506	14.08	634	15.07
324	Truck body and trailer	11	0.31	8	0.19
327	Shipbuilding and repair	176	4.89	121	2.87
328	Boatbuilding and repair	1	0.03	0	0.0
331	Small electrical appliances	46	1.28	23	0.55
335	Communications equipment	104	2.89	187	4.44
336	Electrical industrial equipment	61	1.69	61	1.45
347	Concrete products	43	1.19	39	0.90
348	Ready -mixed concrete	8	0.22	9	0.22
353	Stone products	21	0.58	19	0.43
375	Paint and varnish	12	0.34	21	0.50
383	Brooms, brushes and mops	122	3.39	96	2.28
397	Signs and displays	8	0.22	0	0.0
399	Miscellaneous manufacturing	38	1.06	0	0.0
	Totals	3,597		4,212	

Table 5.7  
Collingwood CMC, workers in manufacturing by two-digit code, 1964 and 1967

Major group (Industry)	1964		1967		Per cent change
	Employment	Per cent	Employment	Per cent	
01 Food and beverage	265	15.74	306	11.56	-4.18
03 Rubber	0	0.0	126	4.76	4.76
04 Leather	16	0.95	16	0.60	-0.35
05 Textile	98	5.82	235	8.88	3.06
07 Clothing	102	6.06	51	1.93	-4.13
08 Wood	59	3.50	44	1.66	-1.84
09 Furniture and fixtures	188	11.16	224	8.46	-2.70
11 Printing, publishing and allied	25	1.49	35	1.32	-0.17
14 Machinery (except electrical)	35	2.08	116	4.38	2.30
15 Transportation equipment	788	46.79	988	37.22	-7.57
16 Electrical products	0	0.0	330	12.40	12.40
17 Non-metallic mineral products	105	6.23	178	6.72	0.49
20 Miscellaneous manufacturing	3	0.18	3	0.11	-0.07
Totals	1,684		2,652		

Table 5.8  
Collingwood CMC, workers in manufacturing by three-digit code, 1964 and 1967

Three-digit code	Industry	1964		1967	
		Employment	Per cent	Employment	Per cent
105	Dairy factories	37	2.20	23	0.87
112	Fruit and vegetable canners	163	9.68	216	8.16
123	Feed manufacturers	44	2.61	48	1.81
129	Bakeries	7	0.41	7	0.26
139	Miscellaneous food	3	0.18	0	0.0
141	Soft drinks	11	0.65	12	0.45
169	Other rubber	0	0.0	126	4.76
174	Shoes	16	0.95	16	0.60
216	Carpets, mats and rugs	0	0.0	140	5.29
229	Miscellaneous textiles	98	5.82	95	3.59
243	Men's clothing	102	6.06	51	1.93
251	Sawmills	29	1.72	29	1.09
254	Sash, door and planing mills	18	1.07	0	0.0
256	Wooden box	12	0.71	15	0.57
261	Household furniture	173	10.28	213	8.05
266	Other furniture	15	0.89	11	0.41
286	Commercial printing	6	0.36	8	0.30
289	Printing and publishing	19	1.13	27	1.02
311	Agricultural implements	0	0.0	2	0.07
315	Miscellaneous machinery and equipment	35	2.08	114	4.31
325	Motor vehicle parts and accessories	0	0.0	69	2.61
327	Shipbuilding and repair	788	46.79	919	34.61
335	Communications equipment	0	0.0	330	12.41
348	Ready-mixed concrete	0	0.0	3	0.11
351	Clay products	105	6.23	175	6.61
385	Plastics n.e.s.	3	0.18	3	0.11
	Totals	1,684		2,652	

Table 5.9  
Midland CMC, workers in manufacturing by two-digit code, 1964 and 1967

Major group (Industry)	1964		1967		Per cent change
	Employment	Per cent	Employment	Per cent	
01 Food and beverage	195	8.10	209	7.16	-0.94
04 Leather	327	13.62	306	10.49	-3.13
05 Textile	113	4.69	189	6.48	1.79
07 Clothing	170	7.06	135	4.63	-2.43
08 Wood	89	3.70	49	1.68	-2.02
09 Furniture and fixtures	65	2.70	49	1.68	-1.02
11 Printing, publishing and allied	0	0.0	20	0.68	0.68
13 Metal fabricating (except machinery and transportation equipment)	779	32.38	557	19.09	-13.29
14 Machinery (except electrical)	151	6.27	101	3.46	-2.81
15 Transportation equipment	51	2.12	207	7.09	4.97
16 Electrical products	0	0.0	488	16.72	16.72
17 Non-metallic mineral products	6	0.25	32	1.03	0.75
18 Petroleum and coal products	0	0.0	5	0.17	0.17
20 Miscellaneous manufacturing	460	19.11	573	19.64	0.53
Totals	2,406		2,920		

Table 5.10  
Midland CMC, workers in manufacturing by three-digit code, 1964 and 1967

Three- digit code	Industry	1964		1967	
		Employment	Per cent	Employment	Per cent
124	Flour mills	159	6.61	177	6.06
141	Soft drinks	36	1.49	32	1.10
174	Shoes	282	11.74	306	10.49
179	Small leather goods	45	1.87	0	0.0
201	Synthetic textiles	113	4.69	189	6.48
244	Women's clothing	139	5.77	120	4.11
245	Children's clothing	31	1.29	15	0.51
254	Sash, doors and planing mills	30	1.25	0	0.0
256	Wooden boxes	59	2.45	49	1.68
261	Household furniture	65	2.70	49	1.68
289	Printing and publishing	0	0.0	20	0.68
303	Ornamental and architectural metal	15	0.62	20	0.68
304	Metal stamping	262	10.89	237	8.12
305	Wire and wire products	80	3.32	118	4.04
306	Hardware, tools and cutlery	12	0.50	31	1.06
308	Machine shops	25	1.04	28	0.96
309	Miscellaneous metal fabrication	385	16.01	123	4.21
315	Miscellaneous machinery and equipment	151	6.27	101	3.46
325	Motor vehicle parts and accessories	0	0.0	139	4.76
328	Boatbuilding and repair	51	2.12	68	2.33
334	Radio and television receivers	0	0.0	184	6.30
335	Communications equipment	0	0.0	304	10.43
347	Concrete products	5	0.21	12	0.38
348	Ready-mixed concrete	1	0.04	4	0.14
356	Glass and glass products	0	0.0	16	0.51
369	Other petroleum and coal products	0	0.0	5	0.17
381	Scientific and professional equipment	285	11.85	330	11.32
383	Brooms, brushes and mops	4	0.17	0	0.0
385	Plastics n.e.s.	165	6.85	220	7.55
399	Miscellaneous manufacturing n.e.s.	6	0.25	23	0.79
	Totals	2,406		2,920	

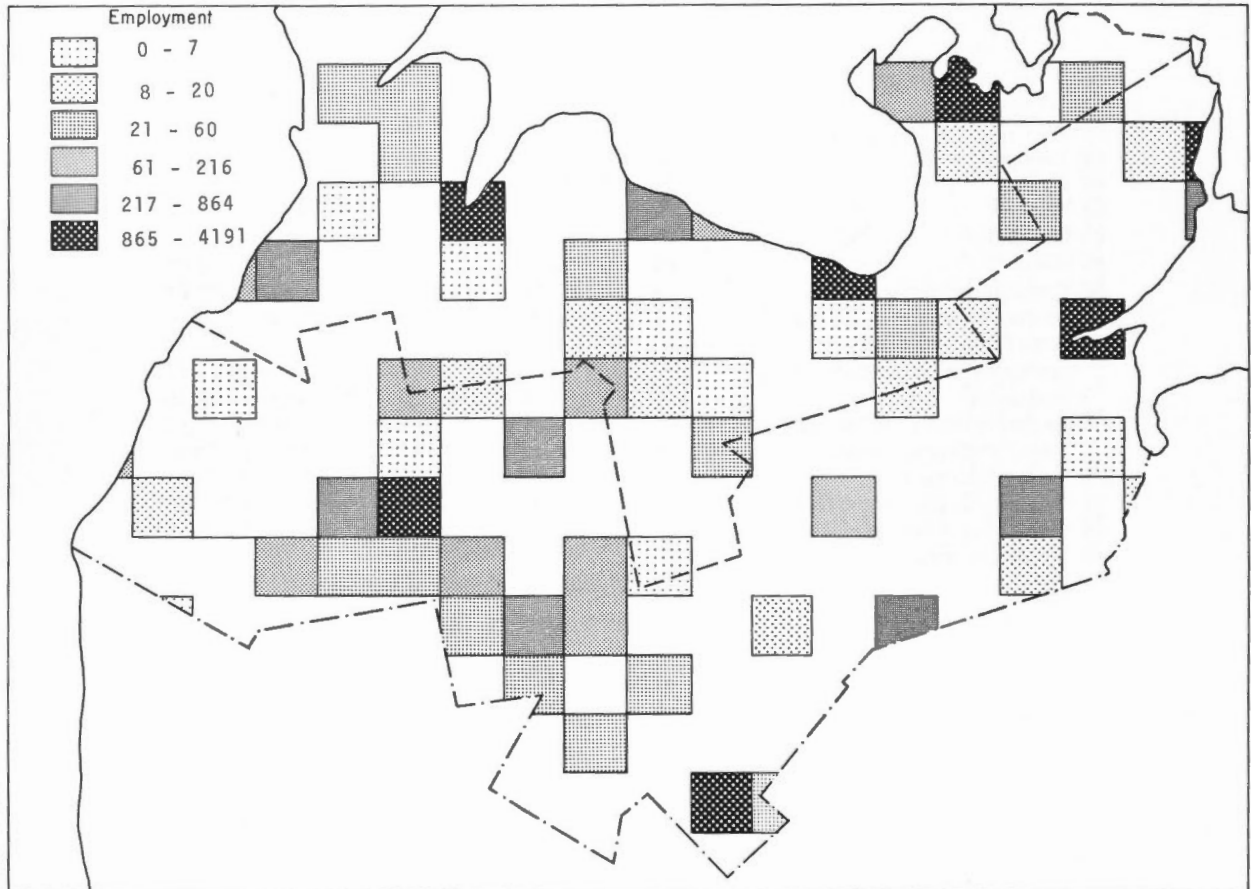


FIGURE 5.5 The spatial distribution of 1967 factory population.

In the case of transportation equipment, almost all of the employment was engaged in the shipbuilding industry. At a time when the impact of the St. Lawrence Seaway on Great Lakes ship construction was generating boom conditions, such dependence on a single industry caused Collingwood little embarrassment. Under the less certain conditions more normal in shipbuilding, such a situation has its potential dangers. As the second line of major employers, the food and beverage, and furniture industries offered little alternative growth potential. As with most of the designated area centres, small elements of newer, more growth oriented industries were present, but in 1964 the scale of their operations was small.

By the date of the questionnaire survey in 1967, the changes in this situation are remarkable. The shipbuilding industry, though still expanding its employment, lost a good deal of its relative importance. The food and furniture industries, too, suffered relative losses as did the clothing and wood industries. The new elements which caused this shift of emphasis are industries entirely new to the area, and a substantial increase in scale among some industries which were

already present. In 1967, the weight of dominance in industrial employment is spread more widely with the following industries in positions of importance

15 Transportation equipment	37.2%
16 Electrical products	12.4%
01 Food and beverages	11.5%
05 Textiles	8.9%
09 Furniture and fixtures	8.5%

The problem of potential overdependence on shipbuilding has lost much of its severity through the emergence of a real degree of diversification. New growth oriented industries in electronics, rubber manufacture and carpets branch of textiles, also provide new direction for the development of Collingwood's previously one-sided economy.

The classification of growth industries for Collingwood provides a problem in that, by its recent performance, shipbuilding both in Canada and Ontario has undeniable claims for inclusion in the growth sector. In the longer term, and particularly in view of current government attitudes, it would be misleading to suggest



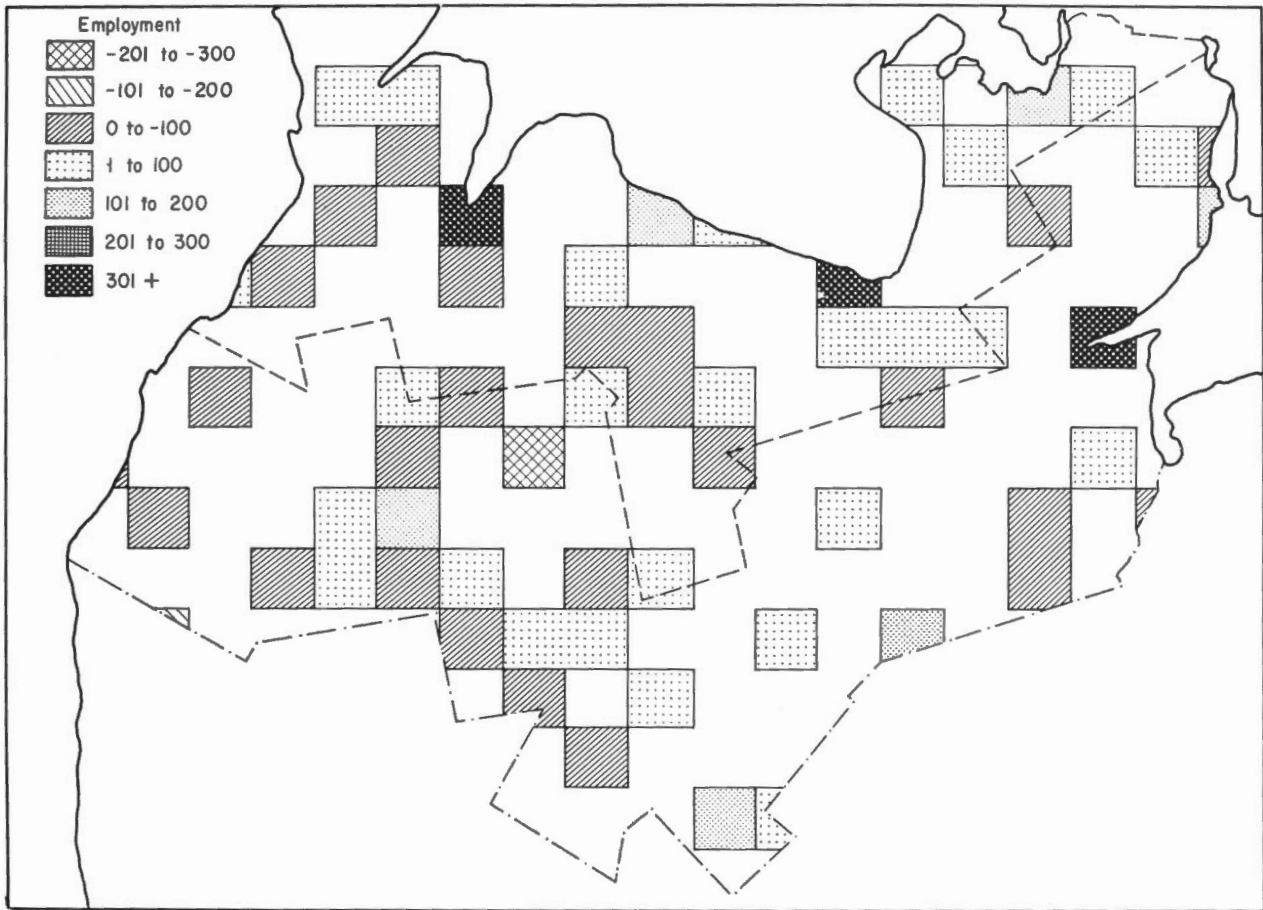


FIGURE 5.6 Change in factory population, 1964-67.

that its growth potential in Collingwood is great. If ship-building is, in this case, counted as a non-growth industry then the compositional improvement wrought by the introduction of new elements is affirmed by the rise in the proportion of total employment in growth industries from 15.9% in 1964 to 40.5% in 1967.

#### *Midland*

In the case of Midland, the increase in numbers of workers in manufacturing between 1964 and 1967 was less spectacular than in Collingwood. The net gain was 514 workers, an increase of 21.2%. In structural terms the general scope of change was also less than that in Collingwood although individual industries saw great changes. Tables 5.9 and 5.10 show the details of changes between the two dates. It is immediately apparent that the significant difference between pre-designation and post-designation conditions is the emergence for the first time of a major electrical products industry in 1967. Parallel with this development there is a widespread, but slow, decrease in the absolute numbers employed and relative importance of the industries traditional to the

area. The leather, clothing, wood and furniture industries all experienced both absolute and relative losses. The heaviest loss in employment, however, is sustained in the metal fabricating group of industries through the closure of a single important factory.

In general terms the changes in composition in Midland are far less sweeping than in Collingwood or even Owen Sound, though the arrival of a new high growth potential branch of the electronics industry in the area is significant. The proportion of the work-force in defined growth industries at the three-digit level rose from 43.4% in 1964, already a favourable position, to 52.1% in 1967.

In general terms, the impact of the ADA incentives scheme on the individual CMCs appears to have been the same, though with a difference in scale and detail from place to place. First, job opportunities have greatly increased, causing a rise in the work-force. Second, a process of structural re-orientation has been set in motion for the traditional primary based industries have been replaced by growth oriented industries which provide a stimulus for further change.

The over-all spatial pattern of change in employment is shown for the study area as a whole in Figures 5.5 and 5.6. Perhaps the most striking feature of the spatial pattern of employment in 1967 (Figure 5.5) is the extent to which it remains concentrated in the series of nodes along the bayshore, in the east on Highway 400, and in the south closer to the larger centres of the

Toronto periphery. As Figure 5.6 indicates, the changes in this general pattern partly wrought (in the designated area) by the impact of the ADA scheme were relatively slight between 1964 and 1967. If anything they contributed to the existing concentrations, while the intermediate zone straddling the designated area-peripheral area boundary continued to lose industrial employment.

## Tertiary economic structure and employment

In preceding chapters we have analyzed the impact of the ADA program on industry structure, industrial employment, and the demand for housing within the designated and peripheral areas. In this chapter we are concerned with examining the effect of these changes in manufacturing employment and manufacturing wage-bill on the tertiary base of the settlements within the study area (Figure 6.1). The framework within which the analysis is undertaken is that of central place theory (1). This body of theory relates the service structure of settlements to the level of demand both within and surrounding the settlement, and is of considerable interest to economic planners, for the implication is that changes in the level of demand will result in changes in tertiary structure.

### The conceptual framework

Empirical research undertaken in recent years in many parts of the world has indicated that there is considerable evidence for relating the service structure of settlements to the population size of the settlements (2). The population represents the level of demand, and in relatively large settlements (1,000+), the hinterland, which is difficult to delimit and measure provides a relatively small population compared with the settlement as a whole. The empirical evidence relates the tertiary structure of the settlement to the population size of the settlement.

### Empirical models

The models developed from central place concepts involve an aggregation of spatially distributed data into regression equations. For this reason they are referred to as cross-sectional models, and their interpretation involves problems that are similar to models using time series data. However, whereas with time series models some of the problems have been attacked and partially solved (such as auto-correlation), the problems of using

cross-sectional data are known only by intuition (3). It is therefore necessary at the outset to indicate that while the results may look extremely attractive and useful from a planning sense, they must be interpreted with a degree of caution.

The first model suggests that the number of business types ( $B_i$ ) found in the  $i^{\text{th}}$  settlement is a function of the population size of the  $i^{\text{th}}$  settlement ( $P_i$ ), there being  $n$  settlements within the area

$$(i = 1, 2, 3, \dots, n)$$

$$(B_i) = \alpha (P_i) \quad (\text{Eq. 6.1})$$

Some business activities are high order activities and are only found in high order settlements, which, in the context of the models used in this analysis, means large settlements in terms of population size. At the lower end of the scale are low order activities, which are found in both low order settlements and high order settlements.

The second model relates the total number of business and service establishments found in a settlement to the population size of the settlement

$$(E_i) = \beta (P_i) \quad (\text{Eq. 6.2})$$

This equation states that the number of retail and service establishments found in the  $i^{\text{th}}$  settlement ( $E_i$ ) is positively related to the population size of that settlement. The integer value of establishments ignores variation in size. For example, a large drugstore will count as one establishment, and a small drugstore will also count as one establishment. As previous studies have indicated that this relationship is strong despite the fact that size differences are ignored, the equation can be regarded as extremely useful.

The third model indicates that the number of establishments of the  $B^{\text{th}}$  business type in the  $i^{\text{th}}$

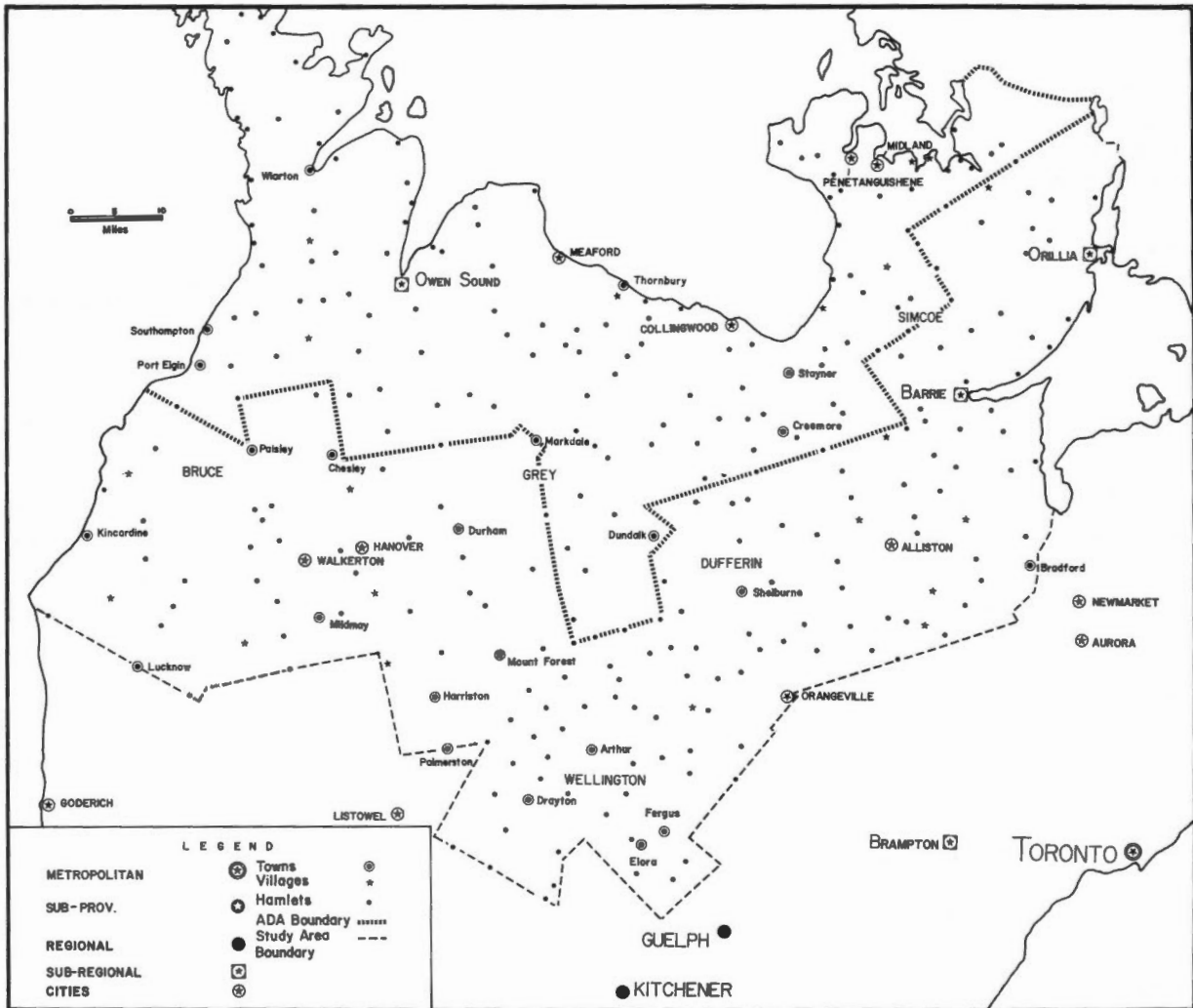


FIGURE 6.1 The hierarchy of service centres in the study area, 1966.

community ( $B_{E_i}$ ) is also a function of the population size of the  $i^{th}$  settlement

$$(B_{E_i}) = \lambda (P_i) \tag{Eq. 6.3}$$

If the *threshold value*, that is the number of people (or level of demand) it takes to support one establishment of a given business type, is  $X$ , then that particular business type will not normally be found in settlements containing less than  $X$  persons. The number of establishments will then increase with the population size of the settlement for those settlements that contain populations greater than the threshold size.

Two further models, not directly related to central place theory, but implied by the equations above, concern retail sales (RS) and employment in tertiary activities (TE). If the number of business types and the number of business establishments increase with the population size of settlements, then it is reasonable to

postulate that retail sales should be positively related to settlement size

$$(RS_i) = \pi (P_i) \tag{Eq. 6.4}$$

and that tertiary employment should also be related to population size

$$(TE_i) = \psi (P_i) \tag{Eq. 6.5}$$

**Change in tertiary activity business types and establishments, 1964-1967**

Data have been obtained from the white pages of *Bell Telephone Directories* relating to tertiary economic activities in municipalities in the study area for 1964 and 1967. The data have been classified by four-digit code as detailed in Appendix IV, and this information provides the basis for the analysis of tertiary economic structure

Table 6.1  
Designated area: percentage change in tertiary activity business types and establishments, 1964-1967, by municipality

Municipality	1964 B <sub>i</sub>	1967 B <sub>i</sub>	Per cent change	1964 E <sub>i</sub>	1967 E <sub>i</sub>	Per cent change
Allenford	12	15	25.00	17	22	29.41
Chatsworth	16	19	18.75	21	29	38.09
Clarksburg	14	14	0.0	18	17	- 5.55
Coldwater	18	23	27.77	28	39	39.28
Collingwood	57	56	- 1.75	312	376	20.51
Dundalk	29	33	13.79	64	67	4.68
Elmvale	37	35	- 5.41	77	73	- 5.19
Feversham	11	12	9.09	15	12	-20.00
Flesherton	21	27	28.57	35	51	45.71
Markdale	31	34	9.67	68	84	23.52
Midland	57	61	7.01	358	390	8.93
Owen Sound	66	65	- 1.51	729	768	5.34
Penetanguishene	43	43	0.0	132	151	14.39
Port McNicoll	17	15	-11.76	28	31	10.71
Port Severn	7	6	-14.28	13	14	7.69
Southampton	29	32	10.34	96	95	- 1.04
Tara	23	21	- 8.69	39	33	-15.38
Thornbury	26	30	15.38	39	61	56.41
Victoria Harbour	14	16	14.28	23	30	30.43
Wasaga Beach	22	21	- 4.54	84	72	-14.28
Waubashene	12	10	-16.66	24	28	16.66
Warton	38	43	13.15	113	118	4.42
Total	600	631	5.16	2,333	2,561	9.77
Study area Total	1,541	1,593	3.37	6,117	6,595	7.81

Source: data compiled by the authors.

within municipalities. A *business type* (B<sub>i</sub>) is defined as a three-digit code except for eight instances (4). Owen Sound in 1964 had 66 tertiary business types. Each business establishment (E<sub>i</sub>) is defined by a four-digit code, and so therefore each business type may contain one or more business establishments. For example, the motor vehicle repair (658) business type in Owen Sound in 1964 contained 31 different establishments. This figure is obtained by counting all the four-digit codes (from 6580 to 6584) present in Owen Sound in this category.

Tables 6.1 and 6.2 show that both the range of business types and the number of establishments in municipalities for which data can be obtained have increased between 1964 and 1967. Municipalities within the study area as a whole have increased their range of business types by, on the average, 3.37% and the total number of business establishments by 7.81%. The increase has been greater for municipalities within the designated area than for those in the peripheral area. It is

not possible to state that these greater increases in the designated area are the result of the direct and indirectly induced employment and wage-bill generated by the ADA program. The succeeding sections will, however, help to clarify such inferences.

#### Empirical analysis of the conceptual framework

Equation 6.1 is applicable to the study area in both 1964 and 1967. The parameters for the equation (Table 6.3) pertaining to the entire study area are similar for both 1964 and 1967. These parameters are the average for the two different areal subsets. The designated area subset parameters are slightly larger than those for the peripheral area, but the changes between time periods in each subset are very small. The parameters pertaining to the study area can therefore be regarded as stable in the short term. The equation in 1964 therefore takes the form

$$(B_i) = -58.93 + 28.62 \log (P_i) \quad (\text{Eq. 6.6})$$

Table 6.2  
Peripheral area: percentage change in tertiary activity business types and establishments, 1964-1967, by municipality

Municipality	1964 B <sub>i</sub>	1967 B <sub>i</sub>	Per cent change	1964 E <sub>i</sub>	1967 E <sub>i</sub>	Per cent change
Alliston	42	51	21.42	164	211	26.82
Arthur	35	36	2.85	95	97	2.10
Ayton	14	15	7.14	21	26	23.80
Barrie	64	66	3.12	947	1,020	7.70
Beeton	19	24	26.31	45	48	6.66
Bervie	1	1	0.0	1	1	0.0
Brussels	31	28	- 9.67	78	55	-29.48
Cargill	12	9	-25.00	22	13	-40.90
Chesley	36	40	11.11	79	79	0.0
Clifford	27	24	-11.11	45	49	8.88
Cookstown	24	22	- 8.33	43	38	-11.62
Drayton	28	28	0.0	52	56	7.69
Dublin	17	10	- 41.17	20	13	-35.00
Dungannon	10	11	10.00	10	11	10.00
Durham	41	38	- 7.31	121	100	-17.35
Elmwood	10	12	20.00	16	18	12.50
Elora	26	25	- 3.84	59	45	-23.72
Everett	3	5	66.66	4	6	50.00
Fergus	46	45	- 2.17	165	175	6.06
Hanover	49	48	- 2.04	222	241	8.55
Holstein	7	10	42.85	7	10	42.85
Lefroy	17	12	-29.41	27	20	-25.92
Lucknow	18	27	50.00	31	48	54.83
Mildmay	26	22	-15.38	51	51	0.0
Mitchell	40	41	2.50	115	109	- 5.21
Moorefield	18	18	0.0	29	28	- 3.44
Mount Forest	37	44	18.91	130	160	23.07
Neustadt	15	17	13.33	25	26	4.00
Orillia	62	62	0.0	747	815	9.10
Palmerston	24	32	33.33	65	87	33.84
Ripley	21	24	14.28	32	47	46.87
Stroud	21	14	-33.33	34	22	-35.29
Teeswater	28	29	3.57	56	65	16.07
Tottenham	25	22	-12.00	44	42	- 4.54
Walkerton	45	50	11.11	182	202	10.98
Total	939	962	2.44	3,748	4,034	6.60
Study area Total	1,541	1,593	3.37	6,117	6,595	7.81

Source: data compiled by the authors.

The second model, relating the total number of business establishments found in a settlement to the population of the settlement, is also applicable to the study area, peripheral area and designated area, when both variables are expressed in common logarithms (Table 6.4). In 1964 the regression equation takes the form

$$\log(E_i) = -0.8097 + 0.8475 \log(P_i) \quad (\text{Eq. 6.7})$$

The third model has been applied to 38 different tertiary business types. As with all the equations in this chapter, each variable has been tested for normality and transformed to approximate normality if it were not so in arithmetic form. In each of the 38 cases, a transformation into common logarithms proved to be the most convenient way of approximating the normality assumption of regression analysis. Thus, in each case the equation takes the form



Table 6.3  
Regression parameters for Equation 6.1, 1964 and 1967, study area,  
peripheral area and designated area

Location	Year	a	b	r	t <sub>b</sub>	n
Study area	1964	-58.93	28.62	0.93	15.42	40
	1967	-56.26	28.12	0.92	14.47	40
Designated area	1964	-62.50	29.60	0.92	9.83	18
	1967	-60.17	29.16	0.90	8.61	18
Peripheral area	1964	-54.65	27.42	0.94	12.17	22
	1967	-52.07	26.99	0.94	12.60	22

Source: business type data compiled by the authors. Population data by municipality obtained from the *Municipal Directory*, Toronto: Department of Municipal Affairs, 1965 and 1968.

Note: t<sub>b</sub> refers to "students" t, which in this case is used to test the hypothesis that the regression coefficient (b) is significantly greater than zero.

Table 6.4  
Regression parameters for Equation 6.2, 1964 and 1967, study area,  
peripheral area and designated area

Location	Year	a	b	r	t <sub>b</sub>	n
Study area	1964	-0.8097	0.8475	0.9319	16.04	40
	1967	-0.7234	0.8296	0.9496	18.91	40
Designated area	1964	-0.7051	0.8069	0.8921	8.14	18
	1967	-0.7522	0.8336	0.9423	11.60	18
Peripheral area	1964	-0.8880	0.8774	0.9711	18.65	22
	1967	-0.6789	0.8200	0.9558	14.90	22

Source: business type data compiled by the authors. Population data by municipality obtained from the *Municipal Directory*, Toronto: Department of Municipal Affairs, 1965 and 1968.

Note: t<sub>b</sub> refers to "students" t, which in this case is used to test the hypothesis that the regression coefficient (b) is significantly greater than zero.

$$\log({}_B E_i) = \log a + b \log (P_i) \quad (\text{Eq. 6.8})$$

The regression parameters for each of these business types, ranked by threshold size, are presented in Table 6.5 as estimated from the 1964 data.

Equation 6.4 can be tested only for 1951 and 1961, as retail sales data for municipalities in 1964 are unavailable. The relationship seems to be very strong at both time periods for the entire study area and each subset (Table 6.6). However, both the *a* parameter and *b* parameter do not exhibit the same stability between each time period as do the previous equations. Though the relationship generally takes the form

$$\log (RS_i) = \log a + b \log (P_i) \quad (\text{Eq. 6.9})$$

particular values cannot be attached to the parameters, and estimates cannot be obtained for 1964 and 1967.

Fortunately, the tertiary employment equation (Eq. 6.5) exhibits reasonably stable parameters for both 1961 and 1964, and for each spatial subset (Table 6.7). The equation in 1964 takes the form

$$\log (TE_i) = -1.1152 + 1.1073 \log (P_i) \quad (\text{Eq. 6.10})$$

which suggests that a settlement consisting of 20 persons will have 1 person employed in some tertiary economic activity.

### The effect of ADA induced industry

By December 31, 1968, a little over \$7 million had been received by ADA assisted plants in the designated area (5). This figure does not indicate the total ADA investment in the area, as in most cases grants and tax holiday payments are made over a period of years. However, the interim direct impact of this investment on total wages and labor in manufacturing has been

Table 6.5  
Regression parameters and threshold values for 38 business types, 1964, study area

Code	Threshold	a	b	r	t <sub>b</sub>	n
63	43	-1.3586	0.6643	0.86	10.13	38
656	60	-0.7270	0.4091	0.64	4.95	37
654	110	-0.7327	0.4389	0.69	5.85	38
658	120	-1.0475	0.5136	0.69	5.83	38
696	160	-0.4118	0.1864	0.62	3.36	19
673	200	-1.1934	0.5188	0.71	6.23	39
642, 647	210	-0.7994	0.3465	0.58	3.27	22
031	250	-1.4513	0.6092	0.81	7.67	31
613, 613	280	-0.8482	0.3490	0.58	3.14	20
50, 51	290	-1.9625	0.7968	0.90	11.68	33
649	300	-1.2518	0.5155	0.68	5.27	33
875	320	-2.0567	0.8266	0.76	7.11	39
735	340	-2.2498	0.8883	0.85	9.36	36
676	380	-2.3391	0.9084	0.90	11.87	34
872	440	-2.1443	0.8127	0.89	11.38	34
693	480	-1.8875	0.7065	0.83	8.61	34
66	520	-2.5453	0.9322	0.89	10.84	32
652	530	-1.7842	0.6555	0.77	6.33	29
021	540	-1.2081	0.4341	0.63	4.24	28
859	590	-1.8629	0.6716	0.80	6.30	24
823	600	-2.6464	0.9572	0.89	11.57	35
624, 626	630	-1.7635	0.6318	0.79	6.62	28
677	650	-1.6468	0.5901	0.84	7.71	26
699	660	-2.2280	0.7872	0.82	6.20	20
877	690	-0.8600	0.3043	0.78	6.72	31
681	700	-1.6105	0.5672	0.91	12.82	35
874	820	-1.8951	0.6509	0.78	5.76	22
827	900	-2.8078	0.9418	0.88	8.05	19
866	1,000	-2.2970	0.7677	0.93	12.22	23
897	1,100	-2.1500	0.7117	0.76	4.93	19
704	1,200	-1.5462	0.5072	0.80	3.23	7
851	1,350	-1.3343	0.4282	0.77	3.57	10
825	1,400	-2.3148	0.7494	0.86	7.93	23
861	1,450	-1.4025	0.4433	0.74	3.78	13
621	1,600	-2.1804	0.6810	0.85	4.80	10
692	1,850	-1.7725	0.5447	0.75	4.04	14
698	4,300	-2.4239	0.6916	0.85	3.92	7
694	7,800	-2.0251	0.6279	0.85	6.49	17

Table 6.6  
Regression parameters for Equation 6.4, 1951 and 1961, study area,  
peripheral area and designated area

Location	Year	a	b	r	t <sub>b</sub>	n
Study area	1951	1.0012	0.7587	0.85	8.37	27
	1961	0.0894	1.0140	0.94	14.96	29
Designated area	1951	0.3127	0.9372	0.97	11.85	10
	1961	-0.0145	1.0390	0.92	7.54	11
Peripheral area	1951	1.2640	0.6912	0.80	5.25	17
	1961	1.1621	0.9988	0.95	12.72	19

Source: Retail Sales, 1951 from *1951 Census of Canada*, vol. VII, Retail Trade, (Ottawa: DBS), pp. 4.23-4.35; Retail Sales, 1961 from *1961 Census of Canada*, Series 6.1, Retail Trade, (Ottawa: DBS), pp. 4.4-4.17. Population data from the *1951 and 1961 Census of Canada*, Series 1.1, *Incorporated Villages, Towns, and Cities* (Ottawa: DBS).

Table 6.7  
Regression parameters for Equation 6.5, 1961 and 1964, study area,  
peripheral area and designated area

Location	Year	a	b	r	t <sub>b</sub>	n
Study area	1961	-1.1592	1.0240	0.97	22.05	28
	1964	-1.1152	1.1073	0.95	19.80	40
Designated area	1961	-0.9837	0.9740	0.97	12.10	10
	1964	-1.2407	1.1362	0.96	14.71	18
Peripheral area	1961	-1.2846	1.0605	0.98	18.36	18
	1964	-0.9612	1.0681	0.95	13.53	22

Source: tertiary employment is defined as employees (retail + wholesale + service) + working proprietors. Data for 1961 from the 1961 Census of Canada, Retail Trade, pp. 4.11-4.16 and Wholesale Trade and Services, pp. 31.11-31.16. Tertiary employment estimates for 1964 obtained from the Community Planning Branch, Department of Municipal Affairs, Toronto.

enumerated in the previous chapters. This increase in manufacturing labor force and total wages generates a demand for tertiary activities and services which have to be met primarily within the designated area. In the previous section it has been indicated that a conceptual framework concerning the relationship between settlement size and tertiary activities can be applied successfully to the study area and the designated area. This section is concerned with linking those relationships to the manufacturing labor force and wage-bill base.

**Manufacturing labor force, wage-bill and settlement size**

*The relationship between the manufacturing labor force and wage-bill*

At the outset it is important to recognize that the total wages received from manufacturing in a settlement and the total manufacturing labor force within a settlement are closely inter-correlated. In Table 6.8 it is

Table 6.8

Regression parameters for the relationship between the manufacturing wage bill and labor force in settlements, 1951-1967 (both variables logarithmically transformed).

Year	a	b	r	t <sub>b</sub>	n
1951	3.0349	1.0991	0.99	58.67	41
1961	3.3212	1.0609	0.99	63.68	30
1964	3.4840	1.0333	0.98	28.58	36
1967	3.8061	0.9073	0.94	18.39	48

Sources: manufacturing labor force and total wages for 1951 and 1961 from *The Manufacturing Industries of Canada, Geographical Distribution*, 1951 and 1961, (Ottawa: DBS). 1964 manufacturing labor force and total wages data supplied through the courtesy of D.G. Campbell, Assistant Director, Economic Statistics Branch, DBS. The 1964 data have been supplemented by information from our own 1964 data file. 1967 data obtained from the 1967 data file compiled by the authors.

indicated that this relationship is very strong, though local differences in wage rates do seem to have weakened the correlation coefficient in 1967. This is, perhaps, related to the higher wage rates paid by the ADA induced industries as discussed in the previous chapter.

It is noticeable that the *a* parameter, or *Y* intercept, has increased through time. This is a reflection of the effect of inflation and the general increase in real wages that has occurred over the past seventeen years. The *b* parameter, as would be expected, fluctuates closely around unity. Thus it can be concluded that the size of the manufacturing labor force and the manufacturing wage-bill in a town are, in the long term, fairly synonymous.

*The relationship between the tertiary economic structure and the manufacturing labor force and wage-bill*

The relationship between the population of a settlement and the manufacturing labor force

$$P_i = \delta (ML_i) \tag{Eq. 6.11}$$

is more consistent, particularly between 1951 and 1964 (Table 6.9), than that between settlement size and total wages received from manufacturing (Table 6.10)

$$P_i = (TWM_i) \tag{Eq. 6.12}$$

The empirical evidence indicates that the better variable through which to analyze the impact of the ADA program is through its effect on the labor force. The general equation which can therefore be used to link the impact of the ADA program to the size of a settlement is

$$\log(P_i) = 2.1110 + 0.5660 \log(ML_i) \tag{Eq. 6.13}$$

Table 6.9  
Regression parameters for Equation 6.11,  
study area, 1951-1967

Year	a	b	r	t <sub>b</sub>	n
1951	2.0068	0.5768	0.90	12.28	36
1961	2.1216	0.5684	0.91	10.84	27
1964	2.1110	0.5660	0.89	9.97	28
1967	2.2585	0.5075	0.89	10.60	30

Table 6.10  
Regression parameters for Equation 6.12,  
study area, 1951-1967

Year	a	b	r	t <sub>b</sub>	n
1951	0.4981	0.5097	0.89	11.40	36
1961	0.2861	0.5462	0.92	12.08	28
1964	0.1961	0.5454	0.89	9.78	27
1967	0.3671	0.5171	0.90	11.04	30

for the parameters of this equation are fairly consistent for 1951, 1961 and 1964. The inconsistency of the parameters for 1967 is undoubtedly due to the disequilibrium created by the generation of manufacturing activity as a result of the designation of part of the study area.

The system of equations is complete for the linking of the effects of the ADA program to the tertiary economic structure of settlements within the study area. Equations 6.6 to 6.13 can be linked into a forty-three line nomogram (Figure 6.2), for all the equations have the population of settlements as one of the variables. From Figure 6.2 it is apparent that a settlement containing 5,000 people (line *m*) commonly has 650 persons employed in manufacturing, who in return receive almost \$3 million for their labour. Associated with a settlement of this size are usually 1,000 individuals, both employees and proprietors, concerned with tertiary activities of one kind or another.

A settlement of 5,000 people commonly has a range of 47 tertiary business activities, and contains about 210 tertiary business establishments. Included in these are

- 10 Retail food stores (large)
- 6 Motor vehicle dealers
- 7 Gasoline service stations
- 8 Motor vehicle repair shops
- 2 (approx.) Liquor, wine and beer shops
- 5 Hardware stores
- 3 Department and variety stores
- 3 Wholesalers of general merchandise
- 10 Businesses concerned with transportation
- 4 General stores

- 10 Hotels and restaurants, etc.
- 10 Insurance and real estate businesses
- 10 Furniture and appliance stores
- 7 Barber and beauty salons
- 5 Fuel dealers
- 8 Apparel and shoe stores
- 4 Auto parts dealers
- 4 Establishments directly servicing agriculture
- 4 General recreation facilities
- 8 Doctors
- 4 Hardware and lumber wholesalers
- 3 Airconditioning and heating firms
- 6 Miscellaneous retail stores
- 2 (usually) Funeral directors
- 3 Pharmacies
- 3 Laundries, etc.
- 5 Medical service centres
- 3 Lawyers offices
- 3 Establishments servicing buildings and private homes
- 2 Investment companies
- 1 (and usually 2) Motion picture theatres
- 3 Dentists
- 1 Accountant
- 2 Electrical appliance dealers
- 1 Florist

Jewellery stores are not commonly found in settlements of 5,000 people as their threshold population is around 7,800 people.

### Change

The statistical interpretation of Equations 6.6 to 6.13 is that there is a strong association between the variables. The basic premise of this section, however, is that a change in the independent variable in each of the equations will result in a change in the dependent variable. If the ADA program added some 350 new jobs to a town, which had a manufacturing employment total of 650, the tertiary employment and economic structure should, in time, readjust to line *h* in Figure 6.2. This readjustment will, of course, take time, and as time itself involves change in social patterns and economic behaviour, the predictions must be interpreted with a degree of caution.

The long-term impact of the ADA program on tertiary employment and economic activity can be estimated settlement by settlement from Equations 6.6 to 6.13 and Figure 6.1. The impact on employment, which is a basic concern of this monograph, in the tertiary sector can be estimated for each municipality in which ADA induced investment occurred. In Table 6.11, the three major municipalities experiencing large *net* increases in manufacturing employment as a result of the ADA program are listed along with the estimated

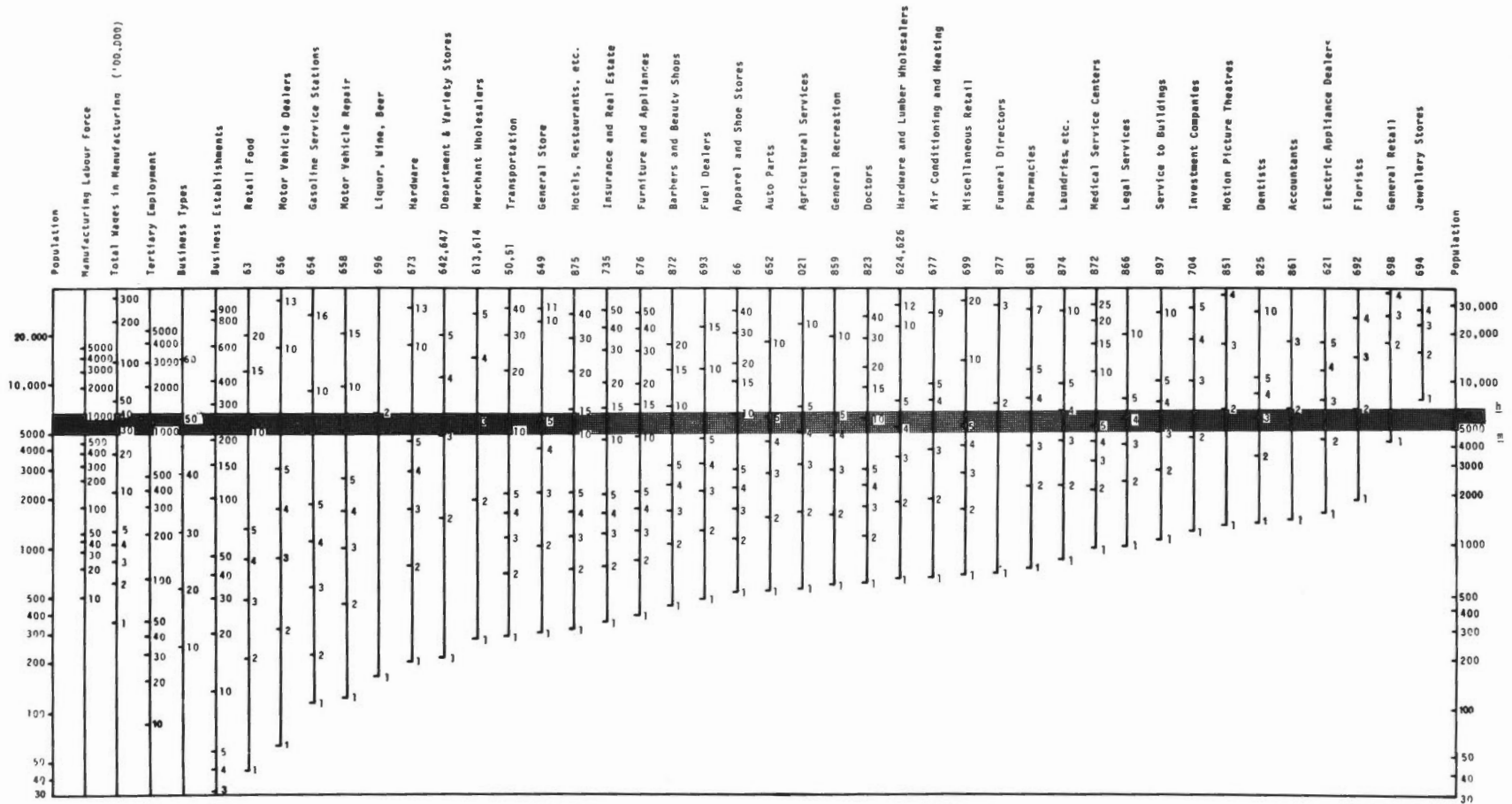


FIGURE 6.2 The relationship between manufacturing labor force, settlement size, tertiary employment and various tertiary economic activities in the study area in 1964.

Table 6.11  
 Estimated long-term increase in tertiary employment in the major municipalities  
 affected by net direct ADA induced increases in employment

Municipality	Total manufacturing employment		ADA induced employment	Net ADA induced increase in employment	Theoretical increase in tertiary employment
	1964	1967			
Owen Sound	2,162	2,677	646	513	201
Collingwood	1,435	2,322	718	718	240
Midland	2,070	2,345	685	275	147
All others	958	1,107	173	165	59
Totals			2,222	1,671	647

*Note:* The net increase in manufacturing employment in the designated area between 1964 and 1967 was 2,097.

increases in tertiary employment that should occur in time.

Note that these increases in tertiary employment will not occur immediately, for the presumption is that there should be time for the multiplier effect of this directly induced employment to be felt in all other economic activities within the community. The equations assume that indirect employment in manufacturing industries, construction, and so forth has occurred. The estimates therefore predict an increase in tertiary employment in the designated area of 647 jobs based on the net ADA induced increase in employment between 1964 and 1967.

The effect of the ADA program on tertiary employment and tertiary economic activity can be estimated through a series of symbolic equations that can be expressed in mathematical terms with data pertaining to the study area. Most of the statements made are inferential, but can be viewed with a degree of confidence for all of the equations are proven by empirical analysis to be statistically valid. Furthermore, the system of equations reveals the vast number of changes that will take place in the tertiary structure of communities in the designated area as a result of an increase in manufacturing labor force associated with ADA induced investment.



### The effectiveness of the ADA program

This monograph can be regarded as a study in method as much as a piece of empirical research. The basic problem has been the obtaining of information applicable to a number of models which can be used for assessing the economic impact of industrial investment. A secondary problem has concerned the development of a computer-oriented methodology capable of handling the type of information needed for such a study. The first problem has proven more difficult to surmount than the second, though the independent surveys conducted by the authors yielded a great deal of information. This data problem is exemplified when an attempt is made to calculate a general employment multiplier for the designated area (1).

#### A general employment multiplier

A general multiplier, indicating the effect of the ADA program on employment in the designated area for the period 1964 to 1967, is not easily determined. This analysis has been conducted within the framework of the general model (Eq. 1.2) which has been discussed in Chapter I. The model states that the total ADA induced employment ( $M_E$ ) is the sum of the direct ADA induced employment ( $E_D$ ) and the indirect employment. In our analysis the indirect employment has been disaggregated into that due to inter-industry flows generated by ADA ( $E_L$ ), and the final demand impact ( $E_F$ ). This latter term is difficult to calculate, for although it has proven possible to estimate the effect of the ADA scheme on employment in the service sector (Chapter VI), it has not proven possible to estimate the further impact of final demands of this nature on manufacturing production. Thus the analysis is incomplete, for while the  $E_L$  term was estimated from the inter-industry study of direct output flows to assisted plants, the  $E_F$  term was derived from the symbolic models relating changes in wage-bill and employment to changes in service sector structure and employment.

Ideally, had there been no other influences on employment change in the designated area the multiplier

effect ( $M$ ) of the program on total employment would be expressed by

$$M = \frac{E_D + E_L + E_F}{E_D}$$

Substituting the derived employment values

$$M = \frac{2222 + 7 + 647}{2222} = 1.29$$

In other words, for approximately every three jobs directly created as a result of the ADA scheme there would have been one additional indirectly created job.

However, there is some information to suggest that this multiplier overstates the effect of the ADA program. If we take the ( $E_D + E_L$ ) term of the model to be the effect of the scheme on manufacturing employment in the area, and the  $E_F$  term to be the effect on services, we can compare actual performances in these sectors (including non-ADA secular trends) with the projections of the multiplier model. In fact, manufacturing employment increased between 1964 and 1967 by only 2,097, and employment in service activities rose by only 310. If it is assumed that these actual changes are *all* in some way associated directly or indirectly with the impact of the ADA scheme and its 2,222 job opportunities then the multiplier can be estimated as

$$M = \frac{2097 + 310}{2222} = 1.083$$

In other words, a more realistic estimate would be that by 1967 (only two years after the ADA program had come into effect in this area) more than twelve directly

sponsored jobs are needed to generate one indirect induced job.

## Summary

Prior to designation the employment structure of the designated area was much less buoyant than the peripheral area which was, in turn, less so than that for Ontario as a whole. The general economic trends indicated that the region was relatively poor, with an aging population, a high rate of unemployment, and relying on an industrial base heavily weighted by traditional industries. The eastern part of the study area, however, showed signs of changes as a result of the construction of Highway 400 which connects this area to Toronto.

The impact of the ADA program by May 1968 was to induce into the designated area over \$80 million of industrial investment. This has diversified the industrial base, and has planted within it seeds of rapid industrial growth. More than 80% of the new investment is associated with motor vehicle manufacturing and the electronics industry.

The impact of new investment on employment opportunities has been dramatic. The direct inducement of employment in August 1967 was in the order of 2,222 jobs. This is of sufficient magnitude to revolutionize the previous base of industrial activity in the designated area. The new employment is heavily concentrated in industries that are linked with widely acknowledged growth sectors in the North American economy — motor vehicles and electronics. Many of the new jobs created through the scheme have been in the female grades, in which hitherto, job opportunities have been limited. Furthermore, this increase in employment opportunities is spread over a wide variety of skills for both males and females.

The new and expanded plants have also provided jobs paying significantly higher wages than those previously normal to the area. For new plants the mean annual wages are \$4,060, for expanded plants \$3,530, but for those industries which did not receive assistance the equivalent figure is \$2,670. By 1970, it is estimated that the direct ADA impact in terms of total payroll will result in a doubling of the 1964 payroll in the designated area. By 1970, the direct impact of the ADA program will be observed by its provision of 5,000 new jobs, a local payroll increment in excess of \$20 million, and an input to local authority taxation of approximately \$1 million.

The indirectly induced employment in the study area by 1967 is only 19, and in the designated area it is as small as 7. But the indirect impact of the scheme in North America as a whole is undoubtedly much larger. However, it is considered that although the immediate

indirect multiplier effects may be greater in Toronto, southwest Ontario, or the northeastern United States, the return effect in the future should be significant.

The major indirect effect of the ADA program on wage rates has been to transplant to the area a nucleus of industries which pay wages similar to those in the more heavily industrialized parts of Ontario. This, plus the heavy increase in demand for labor and resultant labor shortages, is causing wage rates in other industries to rise. A major reason for labor shortage is the lack of low income housing. This shortage of housing has prevented many inhabitants from moving to the towns and cities within the designated area to take advantage of the increased employment opportunities.

As far as the tertiary sector is concerned, the indirect impact of the ADA program is difficult to evaluate. There appears to have been a much greater increase in number and range of services in the designated area than in the peripheral area since 1964. Furthermore, it is indicated that the impact in the future will be considerable both on the range of service and retail activities in the area, and on employment in this sector. For example, it is estimated that tertiary employment in the designated area will increase by approximately 650 jobs.

## Conclusion

According to Krutilla, the effectiveness of a regional development program may be measured by the extent to which it increases the productive capacity of a region, and, concomitantly, stimulates effective demand for the region's output (2). By such criteria the ADA program in the designated area can be considered highly successful. In the short term, it has generated a massive increase in regional investment, a sharp rise in regional wage levels and personal incomes, and a significant improvement in the regional export base. A steep rise in regional imports has counteracted some of the forces for growth in the initial phase, but it is reasonable to assume that this will be a temporary feature. Success, however, has not been achieved without the creation of local stresses and strains. Shortages of houses, schools, public utilities and certain grades of labor have occurred in the key growth centres of the region. Development has, therefore, presented its problems as well as its advantages.

It is interesting to examine some of the lessons that can be learned from this analysis of impact of the ADA program in the Georgian Bay area. At the outset it must be recognized that there were certain advantages inherent in the location, social and economic structure of the designated area. These are:

- (1) While the CMCs of Owen Sound, Midland and Collingwood were definable under the ADA criteria as suffering from economic stress, they could not be

said to represent an extreme or perhaps even an average case of regional underdevelopment in the Canadian context (3).

(2) The smallness of the designated area would ensure that even a limited success in attracting new industry would have a significant impact.

(3) The proximity of the area to Toronto and in particular to Highway 400 gives it special locational advantages in a development context.

(4) The area is fortunate in possessing few significant social or cultural barriers to industrialization.

(5) There are no great aesthetic or environmental barriers to development in the area. On the contrary, it is recognized as a desirable recreation area.

(6) There were few "perception problems" to be overcome in promoting development. Through its proximity to Toronto and its well known recreational facilities it was viewed as a favourable development site, given incentives, by most industrialists.

It must, therefore, be concluded that the designated area was something of a special case and by no means the epitome of a "depressed region". This must be clearly borne in mind in gauging the reasons for the success of the program.

Much of the literature pertaining to the subject of regional economic development advocates a "growth pole" approach in the application of incentives programs (4). The general opinion is that investment should be directed toward those parts of depressed regions which have the greatest potential for economic growth. Once a successful cumulative growth has been achieved within these "poles", the development can be spread centrifugally to the peripheral areas. In this context, the designated area is a peripheral zone to which growth has been successfully spread through a government sponsored incentives program.

In the Province of Ontario, the Oshawa-Toronto-Hamilton-Niagara Falls "horseshoe" can be regarded as a traditional growth region, within which the greatest dynamism is centred in Toronto. The "spread" growth effect, partially directed by the construction of limited access highways, has enveloped peripheral inner-zone settlements, such as Barrie, Kitchener, Guelph and London, into a three-pronged growth axis. There is little

doubt that these tentacles of growth would eventually have extended to the designated area but this would have taken at least ten years. The ADA program can be considered an intervention that has accelerated this "spread" process, directing growth to an area that was, in the context of Ontario, suffering from "economic stress". In fact, the apparent need to de-designate the area after the incentives program had been in operation for only thirty months testifies to the validity of this observation. A major lesson to be learned is that an incentives program basically concerned with aiding the flow of manufacturing capital to capital-short areas can be very successful where there are signs of incipient economic growth.

It has been noted that this successful implantation of new industrial development has brought with it a number of problems. Some of these have been identified, such as housing shortages, strains on public utilities and community services, and structural labor shortages. A more detailed study undoubtedly would have documented many more. Although problems of this type are a part of the growth process, probably a carefully planned development program could have avoided these difficulties. This is not, of course, a comment on the Area Development Agency, but a criticism of the narrow terms of reference within which the program was legally conceived.

Therefore, in terms of such criteria as the amount of new investment, the creation of new jobs and the increment to real income the ADA program was a success. Part of that success was due, perhaps fortuitously, to the fact that in this particular case the industrial incentives scheme was the kind of growth stimulus that was well suited to the specific development needs of the designated area. Had the program been broader in approach involving incentives for the provision of housing, schools, roads and other infrastructure facilities the growth process would have been accelerated, and the path from stagnation to growth would have been smoother. The creation of the Department of Regional Economic Expansion in 1968 from a group of independent but related federal development programs is a positive step toward the attainment of these broader goals.

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**Appendix I  
ADA Questionnaire**

Interviewer. . . . . Interviewee . . . . . Position . . . . . Date . . . . .

**I. DESIGNATION**

- A. Name of firm . . . . .
- B. Current address . . . . .
- C. Previous address . . . . .
- D. Main product or process . . . . . E. Date of establishment . . . . .
- F. Name of original occupant . . . . .
- G. Date of change to present name (if applicable) . . . . .
- H. Name and address of parent company (if applicable) . . . . .

**II. SITE AND PLANT CHARACTERISTICS**

- 1. What is approximate total floor area of factory at present? . . . . .sq.ft.
- 2. What was approximate total floor area of factory when production began at this site? . . . . .sq.ft.
- 3. What is total area of this site? . . . . .sq.ft.
- 4. What major extensions to factory or site have been made since production began (e.g. stores, machine shop, etc.)? . . . . .  
 . . . . . Year . . . . .sq.ft.
- 5. What major extensions to factory or site are in hand or projected in the near future?  
 . . . . .  
 . . . . . Year . . . . .sq.ft.
- 6. What is the estimated replacement cost (i.e. insured value) of factory buildings at July 1967 (include associated offices or canteen facilities, but not land)? \$ . . . . .
- 7. Are factory buildings rented? . . . . . Yes. . . . . No
- 8. What is replacement cost of all plant and equipment at July, 1967 (exclude vehicles used solely for distribution)? \$ . . . . .

**III. EMPLOYMENT CHARACTERISTICS OF LABOR**

A. Wage Earners

10. Employment in 1964 at this site:

		Skilled	Semi-skilled	Unskilled	Total
Number	M				
	F				
Wage rate	M				
	F				

11. Employment at this site in July 1967:

		Skilled	Semi-skilled	Unskilled	Total
Number	M				
	F				
Wage rate	M				
	F				

B. Salaried Staff (administrative, clerical, technical)

12. Employment in 1964 at this site:

	Male	Female	Total
Number			
Average annual wage			

13. Employment at this site in July 1967:

	Male	Female	Total
Number			
Average annual wage			

14. Labor inputs (executive, skilled, unskilled) Total payroll \$ . . . . .
15. Is there a seasonal fluctuation in your employment needs? . . . . . Yes. . . . . No  
 Specify: Peak months JFMAMJJASOND Slack months JFMAMJJASOND
16. Anticipated expansion in numbers employed at this site (within, say, a period up to 1970) . . . . .
- (a) With major extensions to factory and site (as detailed in IIb) . . . . .
- (b) Without major extensions to factory or site (approximate numbers) . . . . .
17. (a) Are you experiencing difficulty in recruiting local labor? . . . . . Yes. . . . . No
- (b) How many unfilled vacancies have you at present? . . . . .
18. Are you satisfied with the standard of labor recruited locally? In terms of:  
 Less than average Average Greater than average
- (a) Absenteeism
- (b) Productivity
- (c) Labor relations
- (d) Turnover
19. (a) Were any key personnel brought in from outside the area? . . . . . Yes. . . . . No  
 Please specify tasks for which required: . . . . . Number . . . . .  
 . . . . . Number . . . . .
- (b) What percentage of the personnel (19a) has been replaced by locally recruited labor? . . . . . %

IV. JOURNEY TO WORK

20. Location of workers in July 1967. (If possible, exact location classified by unskilled, semi-skilled, skilled, salaried.)

V. THE CHOICE OF LOCATION

21. Who, within the company, is responsible for making location decisions (e.g. owner, board of directors, factory manager etc.)? . . . . .
22. (a) Is the respondent one of the company personnel involved in location decisions? . . . . . Yes. . . . . No
- (b) What qualities do you consider to be of greatest importance in choosing locations for new company factories? Please list in order of importance.



- (i) . . . . .
  - (ii) . . . . .
  - (iii) . . . . .
  - (iv) . . . . .
23. Was the establishment of your present factory premise motivated by:
- (i) Introduction of a new product . . . . .
  - (ii) Introduction of a new process . . . . .
  - (iii) Expansion of existing production line . . . . .
  - (iv) Other reasons for dissatisfaction with premises. Please specify (e.g. rent, lease, taxes, etc.) . . . . .
24. Does the company procure the services of any agency in location decisions?
- (i) Government agencies – Federal . . . . .
  - Provincial . . . . .
  - Local . . . . .
  - (ii) Private agencies . . . . .
  - . . . . .
  - . . . . .
  - . . . . .

**VI. LOCATION FACTORS**

25. What factors specifically attracted your company to locate in . . . . . ?

	Check	Rank		Check	Rank
1. Transportation			6. Attractiveness of local environment		
(i) Rates . . . . .					
(ii) Facilities . . . . .			7. Plant Consideration		
(iii) Connectivity . . . . .			(i) Existing factory available . . . . .		
2. Accessibility of raw materials			(ii) Low rents/purchase price . . . . .		
(i) Materials (general) . . . . .			(iii) Fully serviced site . . . . .		
(ii) Power and Fuels			(iv) Existing factory producing same goods . . . . .		
a) cost . . . . .			8. Others		
b) special requirements . . . . .			(i) Previous experience of production in this area . . . . .		
(iii) Water Supply			(ii) Special relationships with other firms in the area . . . . .		
a) cost . . . . .					
b) special requirements . . . . .					
3. Accessibility to markets . . . . .					
4. Labor					
(i) Cost . . . . .					
(ii) Union: non-union . . . . .					
(iii) Skills (and potentials) . . . . .					
(iv) Area's reputation . . . . .					
5. Government					
(i) Incentives . . . . .					
a) local . . . . .					
b) other . . . . .					
(ii) Co-operation					
a) local . . . . .					
b) other . . . . .					

VII. INPUT-OUTPUT DATA

OUTPUTS	I Percentage of total value of all outputs during last complete financial year	II Method of Transport	III Destination (Percentage by value)	IV Wholesale firm if destination in III is not ultimate destination of product
(a) Finished products				
(b) Part processed products				

Total value of outputs -- last complete financial year.

INPUTS Non-labor	I Percentage of total value of all inputs during last complete financial year	II Method of Transport	III Origin (Percentage by value)	IV Wholesale firm if origin in III is not initial origin of material
Main materials (excluding capital equip. etc.)				
Power and fuels				

Total value of inputs -- last complete financial year.

VIII. IMPACT OF AREA DEVELOPMENT AGENCY POLICY

- 26. Were you in contact with ADA prior to choosing your present site? . . . . . Yes. . . . . No
- 27. Were you aware of the services offered by ADA to perspective developments in designated areas? . . . . . Yes. . . . . No
- 28. Which of the various services offered by ADA did you use?  
 . . . . .  
 . . . . .  
 . . . . .
- 29. Which other areas were considered as alternative locations?  
 . . . . .  
 . . . . .
- 30. Did ADA assistance greatly influence your decision to locate in . . . . . ? . . . . . Yes. . . . . No

## Appendix II

### Data coding descriptions

Field name	Field name description	Columns
INTP	Interview prefix	1
REFNUM	Reference number	2-5
BRASUB	Branch or subsidiary (branch = 1)	6
DESPER	Designated area or peripheral area	7
CMCCO	CMC code	8-9
COUNTY	County	10-11
TOWNSP	Township	12-13
MUNCIP	Municipality	14-15
GRID	Grid reference	16-21
PRELOC	Previous location	22-23
PARCOL	Parent company location	24-25
DATESB	Date of establishment	26-28
INDCO	Industry code	29-33
PSFLSP	Present floor space	34-37
INFLSP	Initial floor space	38-40
ARESIT	Area of site (acres)	41-43
SPAD47	Floor space added (1964-67)	44-46
PLSP70	Planned increment to floor space (1967-70)	47-49
RPCOBD	Replacement cost of factory buildings	50-53
RPCOEQ	Replacement cost of plant and equipment	54-57
REFNUM	Reference number	81-84
MS64	1964 Males skilled	85-87
MSS64	1964 Males semi-skilled	88-90
MUS64	1964 Males unskilled	91-93
FS64	1964 Females skilled	94-96
FSS64	1964 Females semi-skilled	97-99
FUS64	1964 Females unskilled	100-102
TOTM64	1964 Total male workers	103-105
TOTF64	1964 Total female workers	106-108
WRMS4	1964 Wage rate male skilled	109-110
WRMSS4	1964 Wage rate male semi-skilled	111-112
WRMUS4	1964 Wage rate male unskilled	113-114
WRFS4	1964 Wage rate female skilled	115-116
WRFSS4	1964 Wage rate female semi-skilled	117-118
WRFUS4	1964 Wage rate female unskilled	119-120
MS67	1967 Males skilled	121-123
MSS67	1967 Males semi-skilled	124-126
MUS67	1967 Males unskilled	127-129
FS67	1967 Females skilled	130-132
FSS67	1967 Females semi-skilled	133-135
FUS67	1967 Females unskilled	136-138
TOTM67	1967 Total male workers	139-141
TOTF67	1967 Total female workers	142-144
REFNUM	Reference number	161-164
WRMS7	1967 Wage rate male skilled	165-166
WRMSS7	1967 Wage rate male semi-skilled	167-168
WRMUS7	1967 Wage rate male unskilled	169-170
WRFS7	1967 Wage rate female skilled	171-172
WRFSS7	1967 Wage rate female semi-skilled	173-174
WRFUS7	1967 Wage rate female unskilled	175-176
MSST64	1964 Male salaried staff	177-179
FSST64	1964 Female salaried staff	180-182
TSST64	Total salaried staff 1964	183-185

## POLICY AND PLANNING BRANCH

Field name	Field name description	Columns
MAVSA4	Male average annual salary 1964	186-188
FAVSA4	Female average annual salary 1964	189-191
MSST67	Male salaried staff 1967	192-194
FSST67	Female salaried staff 1967	195-197
TSST67	Total salaried staff 1967	198-200
MAVSA7	Male average annual salary 1967	201-203
FAVSA7	Female average annual salary 1967	204-206
DATENT	Date of entry	207-209
TEMP64	Grand total all workers 1964	210-213
TEMP67	Grand total all workers 1967	214-217
SICLA4	Size class 1964	218-219
SICLA7	Size class 1967	220-221
TOTPAR	Total payroll 1967	222-225
SEAFUC	Seasonal fluctuation	226
REFNUM	Reference number	241-244
EXEM70	Anticipated expansion in employment by 1970	245-247
EXTFAC	Expansion with major extensions to factory	248-250
NOEXFA	Expansion without major extensions to factory	251-253
DIFREC	Difficulty in recruiting local labor (yes = 1)	254
UNFVAC	Number of unfilled vacancies	255-257
ABSENT	Absenteeism	258
PRODUC	Productivity	259
LABREL	Labor relations	260
TURNNOV	Turnover (labor)	261
IMKEPE	Key personnel brought in	262-264
LOKEPE	Key personnel replaced by locals	265-267
REAEST	Reason for establishment	268
ASGOVT	Assistance by government agency (yes = 1)	269
ASPRIV	Assistance by private agency (yes = 1)	270
REFNUM	Reference number	321-324
TOVAOP	Total value of outputs	325-330
PELOOP	Per cent local destination	331-333
PEMEOP	Per cent metro destination	334-336
PEONOP	Per cent rest of Ontario destination	337-339
PECAOP	Per cent rest of Canada Destination	340-342
PEUSOP	Per cent USA destination	343-345
PEOTOP	Per cent other destination	346-348
NOLAIP	Total value of non-labor inputs	349-354
POFUIP	Total value of power and fuel inputs	355-360
PELOIP	Per cent local origin inputs	361-363
PEMEIP	Per cent metro origin inputs	364-366
PEONIP	Per cent Ontario origin inputs	367-369
PECAIP	Per cent Canada origin inputs	370-372
PEUSIP	Per cent USA origin inputs	373-375
PEOTIP	Per cent other origin inputs	376-378
CONADA	In contact with ADA (yes = 1)	379
AADASC	Aware of ADA scheme (yes = 1)	380
ADAUSD	ADA scheme used (yes = 1)	381
ADALOC	ADA strong influence on location decision (yes = 1)	382
RENTED	Plant rented or not (yes = 1)	383

**Appendix III**  
**SIC code: Major group and subgroups**

Major group	Three-digit code	Title	Major group	Three-digit code	Title
01		<i>Food and beverages industries</i>			
	101	Slaughtering and meat processors		218	Textile dyeing and finishing plants
	103	Poultry processors		219	Linoleum and coated fabrics
	105	Dairy factories		221	Canvas products
	107	Process cheese manufacturers		223	Cotton and jute bags
	111	Fish products		229	Miscellaneous textile
	112	Fruit and vegetable canners and preservers	06		<i>Knitting mills</i>
	123	Feed manufacturers		231	Hosiery mills
	124	Flour mills		239	Other knitting mills
	125	Breakfast cereal manufacturers	07		<i>Clothing industries</i>
	128	Biscuit manufacturers		242	Custom tailoring shops
	129	Bakeries		243	Men's clothing
	131	Confectionery manufacturers		244	Women's clothing
	133	Sugar refineries		245	Children's clothing
	135	Vegetable oil mills		246	Fur goods
	139	Miscellaneous food		247	Hats and caps
	141	Soft drink manufacturers		248	Foundation garments
	143	Distilleries		249	Other clothing
	145	Breweries			
	147	Wineries			
02		<i>Tobacco products industries</i>			
	151	Leaf tobacco processing	08		<i>Wood industries</i>
	153	Tobacco products manufacturers		251	Sawmills
03		<i>Rubber industries</i>		252	Veneer and plywood mills
	161	Rubber footwear manufacturers		254	Sash and door and planing mills
	163	Tire and tube manufacturers		256	Wooden box factories
	169	Other rubber		258	Coffins and caskets
				259	Miscellaneous wood
04		<i>Leather industries</i>	09		<i>Furniture and fixture industries</i>
	172	Leather tanneries		261	Household furniture
	174	Shoe factories		264	Office furniture
	175	Leather glove factories		266	Other furniture
	179	Luggage, handbag and small leather goods manufacturers		268	Electric lamps and shades
05		<i>Textile industries</i>	10		<i>Paper and allied industries</i>
	183	Cotton yarn and cloth mills		271	Pulp and paper mills
	193	Wool yarn mills		272	Asphalt roofing manufacturers
	197	Wool cloth mills		273	Paper box and bag manufacturers
	201	Synthetic textile mills		274	Other paper converters
	211	Fibre preparing mills	11		<i>Printing, publishing and allied industries</i>
	212	Thread mills		286	Commercial printing
	213	Cordage and twine		287	Engraving and allied
	214	Narrow fabric mills		288	Publishing only
	215	Pressed and punched felt mills		289	Printing and publishing
	216	Carpets, mats and rugs			

Major group	Three-digit code	Title	Major group	Three-digit code	Title
12		<i>Primary metal industries</i>		337	Battery manufacturers
	291	Iron and steel mills		338	Manufacturers of electric wire and cable
	292	Steel pipe and tube mills			
	294	Iron foundries	17		<i>Non-Metallic mineral products industries</i>
	295	Smelting and refining		341	Cement manufacturers
	296	Aluminum rolling, casting and extruding		343	Lime manufacturers
	297	Copper and alloy rolling, casting and extruding		345	Gypsum products manufacturers
	298	Metal rolling, casting and extruding, n.e.s.*		347	Concrete products manufacturers
13		<i>Metal fabricating industries (except machinery and transportation equipment)</i>		348	Ready-mixed concrete manufacturers
	301	Boiler and plate works		351	Clay products manufacturers
	302	Fabricated structural metal		352	Refractories manufacturers
	303	Ornamental and architectural metals		353	Stone products manufacturers
	304	Metal stamping, pressing and coating		354	Mineral wool manufacturers
	305	Wire and wire products manufacturers		355	Asbestos products
	306	Hardware, tool and cutlery manufacturers		356	Glass and glass products manufacturers
	307	Heating equipment manufacturers		357	Abrasives manufacturers
	308	Machine shops	18	359	Other non-metallic mineral products
	309	Miscellaneous metal fabricating			
14		<i>Machinery industries (except electrical machinery)</i>		365	Petroleum refineries
	311	Agricultural implements		369	Other petroleum and coal products
	315	Miscellaneous machinery and equipment manufacturers	19		<i>Chemical and chemical products industries</i>
	316	Commercial refrigeration and air conditioning equipment manufacturers		371	Explosives and ammunition manufacturers
	318	Office and store machinery manufacturers		372	Manufacturers of mixed fertilizers
15		<i>Transportation equipment industries</i>		373	Manufacturers of plastics and synthetic resins
	321	Aircraft and parts manufacturers		374	Manufacturers of pharmaceuticals and medicines
	323	Motor vehicle manufacturers		375	Paint and varnish manufacturers
	324	Truck body and trailer manufacturers		376	Manufacturers of soap and cleaning compounds
	325	Motor vehicle parts and accessories manufacturers		377	Manufacturers of toilet preparations
	326	Railroad rolling stock		378	Manufacturers of industrial chemicals
	327	Shipbuilding and repair	20	379	Other chemical
	328	Boatbuilding and repair			
	329	Miscellaneous vehicle manufacturers			<i>Miscellaneous manufacturing industries</i>
16		<i>Electrical products industries</i>		381	Scientific and professional equipment manufacturers
	331	Manufacturers of small electrical appliances		382	Jewellery and silverware manufacturers
	332	Manufacturers of major appliances (electric and non-electric)		383	Brooms, brushes and mops
	334	Manufacturers of household radio and television receivers		384	Venetian blind manufacturers
	335	Communications equipment manufacturers		385	Plastic fabricators, n.e.s.
	336	Manufacturers of electrical industrial equipment		393	Sporting goods and toys
				395	Fur dressing and dyeing
				397	Signs and displays
				399	Miscellaneous manufacturing n.e.s.

Source: Standard Industrial Classification Manual, Ottawa: Dominion Bureau of Statistics, 1960, pp. 17-19.

\*Not easily specified.



**Appendix IV  
Modified tertiary economic activity code**

Class	Three-digit code	Four-digit code	Title	Class	Three-digit code	Four-digit code	Title
02			<i>Agricultural services</i>				
	021		Services incidental to agriculture			5272	General storage
		0211	Veterinarians			5273	Auto storage
		0212	Farm spraying	54			<i>Communication</i>
		0213	Breeding service				
		0214	Hatchery		543		Radio and television broadcasting
		0215	Kennels			5431	Radio station
		0218	Nursery			5432	Television station
		0219	Food grading and packing		544		Telephone systems
	023		Farm equipment dealers		548		Post office
03			<i>Forestry services</i>				
	039		Forestry	60,61,62			<i>Wholesale trade (and occasionally retailing)</i>
42			<i>Special trade contractors</i>				
	421		Trades		602		Wholesalers of livestock
		4211	Excavator		608		Wholesalers of petroleum products
		4212	Carpenter		611		Wholesalers of paper and paper products
		4213	Bricklayer		613		Wholesalers of general merchandise
		4214	Electrician		614		Wholesalers of food
		4215	Plumber			6141	Wholesale bakers
		4216	Well driller			6142	Wholesale grocers
		4217	Plasterer			6143	Wholesale fish
		4218	Heating			6147	Wholesale butchers
		4219	General repairs			6148	Wholesale fruits and vegetables
					615		Wholesalers of tobacco products
50			<i>Transportation</i>		619		Wholesalers of motor vehicles and accessories
	501		Air transport			6191	Wholesale auto parts
	504		Water transport		621		Wholesalers of electric appliances
		5045	Boat cruises			6211	Electric motors sales and service
	506		Railroads			6213	Refrigeration
	507		Truck transport		623		Wholesalers of machinery and equipment
		5071	Movers			6231	Business machines
		5072	Transport service			6232	Office furniture and equipment
		5073	Trucking			6235	Surgical supplies
		5074	Delivery service				
	508		Bus transportation		624		Wholesalers of hardware, plumbing and heating equipment
51			<i>Transport: General</i>			6241	Wholesale hardware
	512		Taxicab operations			6242	Oil burners sales and service
	517		Tourist agency		626		Wholesalers of lumber and building materials
	519		Ambulance service				
52			<i>Storage</i>			6261	Building supplies
	527		Other storage and warehousing			6262	Wholesale lumber
		5271	Cold storage			6263	Fencing
						6264	Scaffolding

Class	Three-digit code	Four-digit code	Title	Class	Three-digit code	Four-digit code	Title	
63	627		Wholesalers of scrap and waste material			6733	Paint and wallpaper	
		6271	Auto wreckers			6734	Lumber	
	629		Wholesalers*			6735	Wood products	
		6291	Feed dealers			6736	Light (Lamp) products	
		6292	Wholesale florists			6737	Lawn mowers	
		6293	Wholesale seed			6738	Typewriters and supplies	
		6294	Wholesale janitors equipment			6739	Leather goods	
		6295	Wholesale fertilizers		674		Antiques	
		6298	Auctioneers		676		Household furniture and appliance	
				<i>Retail food</i>			6761	Furniture dealers
	631			Food stores			6762	Electric appliances
		6311		Grocers			6763	Floor covering
		6312		Butchers			6764	Draperies
		6313		Fish			6765	Sewing machine sales and service
		6314		Ice cream			6766	Music dealers
		6315		Dairy			6767	Radio sales and service
		6316		Baker			6768	Television sales and service
		6317		Fruits and vegetables	677		6769	Chinaware
		6318		Confectioners			6771	Air conditioning and heating
		6319		Health foods			6772	Air conditioning
	64			<i>General merchandise stores</i>			6773	Heating and furnaces
		642		Department	68		6774	Boilers
		647		Variety				Water conditioning
		649		General				<i>Drug stores</i>
			6493		Cosmetics	681		Pharmacies
	65			<i>Retailers of automotive products</i>	69			<i>Other retail stores</i>
		652		Accessory, parts, tire and battery shops		691		Book and stationery
		6521	Auto parts (Sales and service)			6911	Bookstores	
		6522	Tires			6912	Stationery	
654			Gasoline service stations			6913	Religious supplies	
		6541	General service stations		692		Florists	
		6542	Auto washing		693		Fuel dealers	
		6543	Towing service			6932	Coal and coke	
		6544	Marinas (Sales and service)			6933	Fuel oil	
656			Motor vehicle dealers			6934	Gas (Propane)	
		6561	Mobile homes		694		Jewellery	
658			Motor vehicle repair shops		696		Liquor, wine, and beer shops	
		6581	Garages			6961	Brewers' retail	
		6583	Auto body repair			6962	L.C.B.O.	
	6584	Auto painting		697		Tobacconists		
66			<i>Apparel and shoe stores</i>		698		General retail	
	663		Shoes			6981	Hearing aid services	
	665		Men's clothing			6982	Motorcycle sales and service	
	667		Women's ready-to-wear			6983	Luggage	
		6671	Ladies' wear			6984	Photographic equipment	
		6678	Furriers			6985	Records	
	669		Clothing and dry goods			6987	Plastic products	
		6691	Yard goods			6988	Toys	
		6692	Children's wear		699		Retail stores n.e.s.	
		6693	Dry goods			6991	Arts and crafts sales and service	
67			<i>Hardware stores</i>			6992	Music instruction and instruments	
	673		Hardware			6993	Awnings and tents	
		6731	General hardware			6994	Boats	
		6732	Glass (Panels and windows)			6995	Sporting goods	
						6996	Pet shops	
						6997	Monuments	
					6998	Opticians		
					6999	Gift shops		

\*Not otherwise specified.

Class	Three-digit code	Four-digit code	Title	Class	Three-digit code	Four-digit code	Title
70			<i>Financial institutions</i>		864		Engineering and scientific
	702		Savings and Credit			8641	Architects
		7021	Banks			8642	Engineers (Construction)
		7022	Finance corporations			8643	Surveyors
		7023	Mortgages		866		Legal services
		7024	Trust companies			8661	Lawyers
		7025	Credit unions			8662	Solicitors
	704		Investment companies and security dealers			8663	Public notaries
					869		Other services to business management
						8691	T.A.S.
73			<i>Insurance and real estate industries</i>			8692	Employment agencies
	735		Insurance and real estate agencies			8694	Customs brokers
		7353	Adjusters			8695	Trustees
		7354	Insurance agencies			8696	Duplicating and stenographic
		7355	Real estate agencies			8697	Consultants
		7356	Appraisers	87			<i>Personal services</i>
80			<i>Education and related services</i>		871		Shoe repair shops
	801		Elementary and secondary schools			872	Barber and beauty shops
		8011	Primary			8723	Beauty shops
		8012	Secondary			8724	Barber shops
		8013	Nursery		874		Laundries, cleaners, and pressers
	803		Vocational schools			8741	Uniforms
		8031	Business			8742	Diaper service
		8032	Trade			8743	Linen, sales and service
	809		Miscellaneous education and related services			8745	Laundromat
		8091	Dance schools			8746	Cleaners and dyers
		8092	Music schools			8747	Rugs and carpets
		8093	Driving schools		875		Hotels, restaurants and taverns
						8751	Hotels
82			<i>Health and welfare services</i>			8752	Tourist accommodation
	821		Hospitals			8753	Motels
	823		Doctors			8754	Caterers
	825		Dentists			8755	Restaurants
	827		Medical service centres			8756	Inns
		8271	Nursing homes			8757	Camping parks
		8274	Chiropractors		877		Funeral directors
		8275	Medical and welfare societies			8772	Cemeteries
		8278	Osteopaths		879		Other personal services
		8279	Optometrists			8791	Masseurs
						8793	Steam baths
						8794	Shoe shine
85			<i>Motion picture and recreational services</i>				<i>Miscellaneous services</i>
	851		Motion picture theatres and film exchanges	89		891	Labor organizations and trade associations
		8511	Cinemas			8911	Chambers of commerce marketing boards
	853		Bowling alleys and billiard parlours			8912	Unions
		8531	Billiards			893	Photography
		8532	Bowling			894	Blacksmith and welding shops
	859		Other recreational services			8941	Welding
		8591	Golf courses			896	Miscellaneous repair shops
		8592	Clubs			8961	Electric Appliance repair shops
86			<i>Services to business management</i>			897	Services to buildings and dwellings
	861		Accountancy			8971	Extermination and pest control
	862		Advertising			8972	Janitor service
		8621	Signs				

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Class	Three-digit code	Four-digit code	Title
		8973	Landscaping
		8974	Septic tank service
		8975	Painters and decorators
		8976	Home appliance services
	899		Other miscellaneous services
		8991	Auto rental
		8993	General rental
90			<i>Federal administration</i>
	902		Defence services
	909		Other federal administration
93			<i>Provincial administration</i>
	931		Provincial government services
95			<i>Local administration</i>
	951		Local government functions

## Appendix V

### The definition of growth industries in Ontario, 1961-1964

There are a considerable number of methods available in the literature concerning industrial growth and the definition of growth industries (1). The evidence available indicates that there is no one method that can be regarded as superior to others, and that probably the best method is one that serves a particular purpose with the minimum of assumptions and the simplest arithmetic manipulation. The purpose of this appendix is to define objectively growth industries in Ontario. The definition of "growth industries" in this context is taken as being a combination of those industries that have grown faster in Ontario than in Canada, and that have also grown in Canada as a whole. Conversely, non-growth industries will be those that have declined in Ontario relative to Canada, and have declined in Canada as a whole. An industry will be defined by three-digit SIC code.

#### Comparative growth or decline

An index of growth or decline for a particular industry in one area with respect to another (i.e., Ontario with respect to Canada) can be defined by adapting a technique used by Fuchs (2) in an analysis of industrial change in the United States between 1929 and 1954. Whereas Fuchs applied the method to states, we will apply the method to industry sub-groups. The relative growth of manufacturing employment ( $G_i$ ) in the  $i^{\text{th}}$  industry sub-group ( $i = 1, 2, 3, \dots, n$ ) can be represented as

$$G_i = Y_i - H_i$$

and

$$H_i = X_i \left( \frac{B_i}{A_i} \right)$$

where

- $X_i$  = the employment in the  $i^{\text{th}}$  industry sub-group in Ontario in 1961;
- $Y_i$  = the employment in the  $i^{\text{th}}$  industry sub-group in Ontario in 1964;
- $A_i$  = the employment in the  $i^{\text{th}}$  industry sub-group in Canada in 1961;

$B_i$  = the employment in the  $i^{\text{th}}$  industry sub-group in Canada in 1964.

Thus,  $H_i$  is an abstract number representing the employment in the  $i^{\text{th}}$  industry sub-group that would have existed if employment in that group had grown at the same rate as the whole of Canada. It is the  $H_i$  term, therefore, that permits the selection of outstanding growth industries in Ontario.

The difference between the actual value ( $Y_i$ ) and  $H_i$  can then be converted into a percentage gain or loss by

$$G_i\% = \frac{100(Y_i - H_i)}{Y_i \text{ or } H_i}$$

The largest of the two terms in the numerator is used in the denominator, and as a consequence, the range is limited from +100% to -100%. Thus employment by manufacturers of small electrical appliances (16331) shows a comparative gain of 22.1%, which means that employment in this category gained 22.1% more than it would have done if it had grown (or declined) at the same rate as employment in that sub-group in Canada between 1961 and 1964. On the other hand, employment in smelting and refining (12295) shows a loss of -10.4%, which means that employment in this category was 10.4% less than it would have been if it had grown (or declined) at the same rate as employment in that sub-group in Canada between 1961 and 1964. A positive figure, therefore, shows a shift or concentration to Ontario, whereas a negative figure shows a relative shift away from Ontario.

#### Relative growth of industries in Canada

A second measure used to determine whether industries can be classified as growth or not is simply an absolute figure of employment change by SIC three-digit code in Canada. Thus in column 2 of the following table the figure represents the ratio between the 1964 employment in an industrial sub-group and the 1961 employment.

Change in Canada, and comparative gain or loss in Ontario with respect to Canada,  
of industrial employment, 1961-1964, by three-digit code.

Three-digit code (1)	Growth in Canada 1961-64 (2)	G % (3)	Three-digit code (1)	Growth in Canada 1961-64 (2)	G % (3)
101	1.009	2.5	248	1.142	0.4
103	1.028	7.9	249	0.972	10.7
105	0.994	-1.4	251	1.078	-10.0
107	1.066		252	1.229	6.3
111	1.081	17.6	254	1.034	3.4
112	1.074	-2.8	256	1.025	11.7
123	1.001	-6.2	258	1.011	-0.5
124	1.066	-4.0	259	1.123	-13.6
125	0.926	-0.3	261	1.101	2.8
128	0.954	10.8	264	1.228	5.8
129	0.999	-5.6	266	1.189	0.3
131	1.009	7.5	268	1.050	-15.8
133	1.017		271	1.062	-1.2
135	1.039		272	1.086	10.6
139	1.072	3.7	273	1.081	1.8
141	1.038	0.5	274	1.185	-2.5
143	0.971	4.6	286	1.019	-0.4
145	0.969	-0.1	287	0.974	-7.3
147	1.132	-5.6	288	1.002	-7.2
151	1.157	1.7	289	0.993	-1.7
153	1.025	8.3	291	1.194	1.3
161	1.214		292	1.302	-6.2
163	1.085		294	1.176	5.8
169	1.229		295	1.007	-10.4
172	0.963	-0.7	296	0.949	-5.2
174	0.938	7.0	297	1.105	0.5
175	0.988	7.9	298	1.238	1.1
179	1.103	9.7	301	1.153	1.4
183	1.043		302	1.026	5.1
193	1.099	-0.3	303	1.224	-7.3
197	1.101	-1.1	304	1.191	-2.4
201	1.240		305	1.215	2.3
211	0.999		306	1.435	-0.1
212	0.988	-5.2	307	1.104	-7.7
213	1.266	-11.4	308	1.307	2.5
214	1.093		309	1.186	1.8
215	1.103		311	1.240	-8.4
216	1.332	-0.4	315	1.302	-0.8
218	1.242		316	1.226	-3.2
219	1.009		318	1.166	-1.8
221	1.139	0.5	321	0.998	23.0
223	1.066		323	1.431	1.8
229	1.239	16.3	324	1.337	-4.6
231	0.808	-4.6	325	1.430	0.0
239	1.136	-6.4	326	1.149	
243	1.087	-1.5	327	1.140	22.0
244	1.024	1.0	328	1.361	
245	0.987	2.8	329	1.581	
246	0.811	-1.1			
247	0.840	-2.0			

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Three-digit code (1)	Growth in Canada 1961-64 (2)	G% (3)	Three-digit code (1)	Growth in Canada 1961-64 (2)	G% (3)
331	1.188	22.1	359	1.335	8.0
332	1.114	1.4	365	0.903	4.9
334	0.932	23.8	369	1.250	11.6
335	1.276	8.6	371	0.887	
336	1.235	0.5	372	1.200	6.2
337	1.064		373	1.087	6.0
338	1.101	2.4	374	1.083	0.6
339	1.154		375	1.019	11.4
			376	1.019	-6.8
341	1.001	-3.9	377	1.207	
343	0.962	6.0	378	1.077	1.5
345	0.944		379	1.079	1.4
347	1.203	3.4			
348	1.458	-9.6	381	1.042	
351	1.048	7.3	382	1.017	0.5
352	1.098		383	1.059	2.9
353	1.005	3.8	384	0.915	15.3
354	1.115		385	1.316	
355	1.051	13.9	393	1.091	-1.0
356	1.057	3.8	398	0.996	-9.8
357	1.040		399	1.160	3.4

Source: calculations by the authors.



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2. These journey-to-work areas are defined in: Thoman, R.S. and Yeates, M.H. *Delimitation of development regions in Canada*. Area Development Agency, Dept. Industry, Ottawa, 1966, p. 110.
3. Dominion Bureau of Statistics. *Standard industrial classification manual*. Queen's Printer, Ottawa, 1960.
4. Meyer, J.R. *Regional economics: a survey*. Am Econ. Rev., vol. 53, 1963, pp. 19-54.
5. Hansen, L. and Tiebout, S.M. *An intersectoral flow analysis of the Californian economy*. Rev. Econ. and Statistics, vol. 45, 1963, pp. 409-418.
6. The literature concerning economic base models is so extensive that it is probably most efficient to cite the discussion in: Isard, W. *Methods of regional analysis*. John Wiley, New York, 1960, pp. 189-205 and the bibliography, pp. 227-231. The connection between the Hansen and Tiebout model and the basic-nonbasic model is detailed in: Yeates, M.H. and Lloyd, P.E. *A study of the impact of the area development agency program in the southern Georgian Bay area*. Area Development Agency, Dept. Industry, Ottawa, 1968, pp. 8-9.
7. The theory is summarized, and much of the empirical work listed in: Berry, B.J.L. and Pred, A. *Central place studies: a bibliography*. Regional Science Research Institute, Univ. Philadelphia, 1961; and *Supplement*, 1965.
8. The results of less detailed interviews in England by Lloyd, Peter, E. and Dicken, Peter, are at present in preparation for publication. The results of rather cursory industrial interviews in Ontario are presented in: Thoman, R.S. and Yeates, M.H. *op. cit.*, 1966, pp. 18-47.
9. The questionnaire solicits more information than is used in this particular study. This additional information may be used in a further study concerned with locational decision making.
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14. Some time has been spent in assessing the use of *Dun and Bradstreet Directories* as a source of data. The 1966 listings for the southern Georgian Bay area were compared with data collected from actual field enumeration and city

directories, cross-checked against the white pages of telephone directories. The results indicate that the *Dun and Bradstreet Directories* are inadequate and inconsistent as far as their listing of service activities is concerned.

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2. *Ibid.* p. 192.
3. *Ibid.* pp. 296-297.
4. Myrdal, G. *Economic theory in underdeveloped regions*. Duckworth, London, 1963, p. 31.
5. Percentages calculated from data supplied by D.G. Campbell, Assistant Director, Manufacturing and Primary Industries Division, Economic Statistics Branch, Dominion Bureau of Statistics, Ottawa.

### Chapter III

1. Data obtained from questions 6 and 8 on the questionnaire. For a discussion of these questions and data see: Chapter I.
2. Estimations of this type raise problems continually throughout the survey, requiring the application of various procedures aimed generally at prorating the quantities in question, whether they are dollars of investment, payroll or workers, in accordance with the amount of assistance received. In this case, the responses to questions 4 and 5 on the questionnaire related to the square footage of certain types of extension are used as the bases for the estimate. Costs per square foot, including equipment, are estimated for the various sections of the entire plant and these are then multiplied by the extension footage to derive an estimate of the value of plant and equipment added due to assistance. Admittedly, the method is crude, but direct information on the amounts of investment promoted in expanded plants through the operation of the scheme was not forthcoming from any other source.
3. These figures refer to the three-digit code of the manufacturing industries division of the *Standard industrial classification manual*, Dominion Bureau of Statistics, Queen's Printer, Ottawa, 1960.
4. The "index of net redistribution" for workers in the various employment classes is 21.1%. This is calculated as follows:

$$\Delta = \frac{1}{2} \sum_{i=1}^k x_i - y_i$$

where:

- $\Delta$  = the index of redistribution;
- $y_i$  = the percentage of the workforce employed in industry class  $i$  in a given year (1967);
- $x_i$  = the percentage employed in industry class  $i$  in an earlier year (1964);
- $k$  = the number of industry classes

For a discussion of this index see: Duncan, O.D., Cuzzort, R.P. and Duncan, B. *Statistical Geography*. The Free Press of Glencoe, New York, 1961, p. 88.

5. Yeates, M.H. and Lloyd, P.E. *A study of the impact of the area development agency program in the southern Georgian Bay area, Ontario*. Interim report no. 1. Area Development Agency, Dept., Industry, Ottawa, 1967, pp. 4-5.
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3. Services such as plant maintenance or the testing of electronic equipment.
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#### Chapter VI

1. See: Footnote 7, chapter I.
2. Berry, B.J.L. *Geography of market centers and retail distribution*. Prentice-Hall, Englewood Cliffs, N.J., 1967, pp. 1-23 and 89-105.
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4. The exceptions are the following two-digit codes: 52, 54, 63 and 66; the following two-digit codes combined: 50 + 51; and the following three-digit codes combined: 613 + 614, 615 + 624 + 626, and 642 + 647.
5. Calculated from the text of a reply to an inquiry by Mr. Mazankowski given by the Parliamentary Secretary to the Minister of Regional Economic Expansion, May, 1969.

#### Chapter VII

1. It is, of course recognized that short-term multipliers are, in effect, meaningless. Had the time period of analysis been of greater duration, the multiplier aspect of the research project could have been given greater emphasis. Thus, the ensuing section serves more to illustrate one aspect of the general utility of the research design utilized in this study than it does to provide a realistic estimate of the general multiplier effect of the program.
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