INDUSTRIAL INCENTIVES AND MANUFACTURING CHANGE: THE GEORGIAN BAY REGION OF ONTARIO

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Introduction

Location of industry policy constitutes a standard tool of regional economic policy. By providing incentives (or disincentives) to manufacturers to locate or expand in particular regions, governments attempt to influence the spatial distribution of manufacturing activity. Between July 1965 and December 1967 manufacturers investing in the Georgian Bay region of Ontario were eligible to apply for grants under the federal government Area Development Agency (ADA) program. Evaluation of the impacts and effectiveness of location of industry policy can be undertaken from a variety of perspectives. Each introduces its own conceptual and empirical difficulties [30]. The approach in this study is to construct a detailed picture of growth and change in Georgian Bay manufacturing employment from 1961 to 1975. This information provides a background for assessing how ADA policy has influenced both immediate and longer run aspects of manufacturing change. These insights provide a basis for discussing some of the issues surrounding the use of location of industry policy. Before turning to the investigation of manufacturing change, a description of the Georgian Bay region and the ADA program is presented.

The Georgian Bay Region and the ADA Program

For policy purposes, the Georgian Bay incentive region refers to the Canada Manpower Centres of Midland, Collingwood and Owen Sound. In 1966 this 2,500 square mile area had a population of 108,000. The southeastern edge of the region lies within 60 miles of the industrial core of Ontario focusing on Toronto and Hamilton.

Despite its proximity to industrial Ontario, the Georgian Bay region experienced prolonged slow growth throughout the 20th century. Economic growth appears to have peaked early [24]. Staple industries involving fishing, lumbering and agriculture declined throughout the century. In particular there has been an absence of manufacturing in the regional economy. In 1961 per capita employment in Georgian Bay manufacturing was 50 per cent below the Ontario average.

By the early 1960s low incomes and high unemployment were distinguishing characteristics of the regional economy. In general, the extent of regional economic depression increased from east to west as one moved away from the major transport axis connecting Georgian Bay to the urban-industrial core to the south [35].

The Georgian Bay region was eligible for industrial incentives

I wish to thank Lewis W. Morgan for his contribution to this study.
between July 1965 and December 1967. The legislation in force during this period represented the second phase of the Area Development Agency (ADA) program, which was initially established by the federal government in 1963. Although the agency's mandate gave it broad scope for undertaking regional development programs, operations focused upon a program of incentives to encourage manufacturing investment in certain designated regions of Canada. Identification of eligible areas was generally accomplished by comparing local area employment characteristics with national norms. The basis for designation was broadened in 1965 by adding new criteria that were dominated by income norms.

The process of designation can be criticized on a number of grounds. First, the criteria did not consider the potential of an area to support manufacturing. Second, by comparing individual local areas independently on each criteria against national norms, localized pockets of depression were identified. Although this could promote some marginal shifts of manufacturing among local areas, it did not encourage a fundamental redistribution of manufacturing among the major Canadian regions. Finally, the several different designation criteria did not exhibit similar patterns of variation among areas. Since areas could be designated on the basis of any single criterion, it could be argued that similar medicine was being prescribed to cure a variety of diseases. Comparison of the number and distribution of eligible areas in 1963 and 1965 illustrate the importance of the designation criteria in determining the exposure of the program. In 1963, when designation was based solely on employment criteria, 35 areas accounting for 7.5 per cent of the Canadian population were eligible for Incentives. In 1965 the program expanded to include 81 areas and 16 per cent of the Canadian population. With the exception of the major urban areas, the Atlantic region was blanketed and there was a dramatic increase in the coverage of rural areas especially in western Canada.

The ADA Incentive Initially took the form of a three year tax holiday plus accelerated depreciation allowances on buildings (20 per cent on a straight line basis compared with 5-10 per cent on a diminishing balance) and equipment (50 per cent on a straight line basis compared with 20 per cent on a diminishing balance). These allowances could be deferred until after the tax holiday. The 1965 program review resulted in cash grants being substituted for the tax deferrals. The accelerated depreciation provision was retained. Cash grants based on "approved capital costs" were available to new and expanding manufacturing activities on the following scale:

1. 33 1/3 per cent of the first $250,000 cost of new machinery, equipment and buildings, plus
2. 25 per cent of the next $750,000 of approved capital costs, plus
3. 20 per cent of additional costs until the maximum grant of $5 million is reached.

The program was non-discretionary in that all applicants who met the terms of the legislation were automatically granted an incentive.

Although applications had to be received by December 1967, many approved projects did not come into production until some months later.

Data

This analysis builds upon an earlier study by Yeates and Lloyd [35] which was comprehensive in its examination of many aspects of the regional economy. As an analysis of ADA policy, however, it was premature. Yeates and Lloyd relied upon survey data which they compiled in the summer of 1967 and spring of 1968. Throughout the report the authors reiterate that their findings on the impacts of ADA must be viewed as tentative.

This study focuses more narrowly upon manufacturing activity in Georgian Bay. However, by extending the analysis to 1975 it becomes possible to identify and assess both the immediate and longer term impacts of ADA policy upon growth and change in regional manufacturing.

Construction of a biennial census of manufacturing establishments covering the period 1961 to 1975 is central to the analysis. Attempts to assemble official government data for the Georgian Bay region encounter the usual problems of aggregation, confidentiality and disclosure normally associated with small area research. Thus it became necessary to use a variety of commercial and municipal information sources to construct the census. Scott's Industrial Directory: Ontario Manufacturers, which is produced every two years, was a major source. This information was supplemented by the annual Industrial Survey of Ontario Municipalities and the Financial Post Survey of Industries in the case of public companies.

The principal interest is in manufacturing employment. Although there are important conceptual difficulties associated with using employment as an indicator of manufacturing change, the expansion of employment opportunities was an important goal of the ADA program. Additional information compiled at the establishment level included plant location by manpower centre and municipality, industry classification by two and three digit SIC code, the awarding of ADA grants, the location of the firm's headquarters and plant entries and failures by year. In addition, surveyed plants were surveyed in the summer of 1973 to identify the nature of their material and service linkages.

The entire study period from 1961 to 1975 is divided into three segments: a pre-incentive period from 1961 to 1965, an incentive period from 1965 to 69 and a post-incentive period from 1969 to 1975. The performance of manufacturing in the pre-incentive period presumably independent of the designation of Georgian Bay. Although the possibility of applying for ADA incentives ended in December 1967, many assisted plants did not actually get into operation until months later. Thus some changes in manufacturing activity between 1965 and 1969 are considered to be directly affected by the ADA program. The post-incentive period provides a six year period during which more long run adjustment in the regional manufacturing sector should become apparent. Employment trends in Ontario manufacturing are also recorded in order to place the Georgian Bay experience in the context of general economic trends. The following sections describe employment growth and structural change in Georgian Bay manufacturing and discuss the contribution of ADA to these patterns of change.

Growth of Georgian Bay Manufacturing Employment

Between 1961 and 1975 employment in Georgian Bay manufacturing

2
plants increased by 90 per cent from 7,297 to 13,793. Sixty-six per cent of this increase was concentrated in the 1965-69 period. The remaining increase was evenly divided between the pre- and post-incentive periods. Employment in the post-incentive period actually peaked at 14,974 in 1973 before declining in the last two years of the study period.

The temporal pattern of growth in Georgian Bay was quite distinct from that experienced in the Ontario economy. In the pre-incentive period the average annual rate of employment growth in Georgian Bay manufacturing was only 70 per cent of the Ontario rate (Table 1). However, in the latter part of this period, while employment conditions in Ontario improved, conditions in Georgian Bay were deteriorating. During the incentive period the rate of growth in Georgian Bay moved dramatically ahead of the Ontario rate. Finally, in the six years following the withdrawal of incentives, the Georgian Bay rate converged upon the Ontario rate.

The Ontario rate.

Table 1

<table>
<thead>
<tr>
<th></th>
<th>1961-65</th>
<th>1965-69</th>
<th>1969-75</th>
<th>1961-75</th>
</tr>
</thead>
<tbody>
<tr>
<td>Georgian Bay</td>
<td>3.56</td>
<td>10.88</td>
<td>1.40</td>
<td>4.65</td>
</tr>
<tr>
<td>Ontario</td>
<td>4.93</td>
<td>1.61</td>
<td>1.21</td>
<td>2.37</td>
</tr>
</tbody>
</table>

Shift and share analysis has been widely used to describe growth trends in a subject economy such as Georgian Bay relative to a benchmark economy such as Ontario. The technique partitions total growth (net shift) into an industrial mix component (compositional shift) and a regional competitive component (differential shift). If a region's industry mix is heavily weighted with industries which are growing more rapidly than the aggregate rate of all industry in the benchmark economy the compositional shift will be positive. The differential shift is the result of differences between growth rates of individual industries in the benchmark economy and the particular region. A positive differential shift indicates that industries are growing more rapidly in the region than they are in the benchmark economy. Table 2 summarizes the results for Georgian Bay for the respective time segments.

The significance of the distinction between change in existing plants and change resulting from entries or failures needs to be kept in perspective, since successful entries subsequently expand or contract and failures in a given year probably expanded and contracted in earlier years. However, the infusion of new economic activity through failure and the loss of activity through failure are regarded as significant events in the process of manufacturing change and are worth distinguishing from change attributable to expansion or contraction in existing plants.

Table 3 describes the categories of employment change for the seven two-year time intervals. Total employment and the number of plants in the beginning year are shown at the top of each column. In the pre-incentive period, 85 per cent of employment growth was centred

both Tables 1 and 2 indicates that growth in Georgian Bay manufactur-
in the existing plants. During the incentive period new plants became the dominant source of employment growth. Finally, during the post-incentive period the more modest growth was totally attributable to expansions in existing plants.

The ratio of gross to net change varied among the three time segments. The ratio will take on a value of one when gross change equals net change and will increase as the gross change required to achieve a given net change increases. Thus a lower value indicates a more "efficient" or less turbulent employment situation. The sign will indicate whether the net change represents expansion (+) or contraction (-) of employment. The value of the ratio dropped from +2.7 in the pre-incentive period to +1.6 during the incentive period before increasing to +9.8 in the post-incentive period. The ratio is simply a means of summarizing an aspect of employment conditions and, in general, there is no logical basis for expressing a preference for a particular value. The markedly higher value in the post-incentive period does, however, suggest a greater degree of regional employment instability than had been previously experienced, and reasons for this need to be investigated.

The elements of employment change (and plant change in the case of entries and failures) are summarized in percentage terms in Table 4 for each of the three time segments. The sum of the elements across a row equals the net change. Thus each row shows the contribution of each element to net change in that particular time interval. Comparison of values down columns indicates how the rate of change of a particular element varied over time.

During the incentive period entering plants accounted for 70 per cent of net employment increase. While the rate of entry of new plants remained high in the post-incentive period the employment associated with these plants fell to the level which characterized the pre-incentive period. Rates of job loss through contraction and failure were higher in the post-incentive period, reflecting greater instability in regional employment.

The importance of the infusion of new plants in total manufacturing change is clear. The population of plants in Georgian Bay increased from 798 in 1961 to 258 between 1961 and 1975. The change resulted from the entry of 205 plants compared with 129 failures. New plants accounted for 4,635 jobs in the year they were initially recorded. By 1975, 159 of these entries, accounting for 6,215 jobs or 45 per cent of total manufacturing employment, were still in production.

The magnitude of change in Georgian Bay manufacturing has been revealed in the foregoing discussion. The temporal variation in manufacturing change suggests that public policy has contributed to this change. However, the relationships between policy and manufacturing change need to be investigated in a much more explicit way if the effects of public policy are to be fully understood. The following paragraphs begin this assessment.

### Incremental Effects of ADA Policy

In theory, incentives are for projects that would not proceed in their absence. In practice it is impossible to be certain that this condition prevails for each project. With a program like ADA, which involved little administrative discretion in determining which projects...
would receive incentives, the possibility that firms would receive public assistance for projects they would have undertaken in any case looms large. Thus, identification of true incremental impacts becomes an important aspect of policy analysis.

The few attempts to study the incremental impact of Canadian incentive policies have used a variety of techniques [7]. These have included mail questionnaires directed to executives in assisted firms, interviews with corporate executives, comparisons of manufacturing change during a period in which incentives were available with a control period, personal judgement of individual cases and combinations of the above. The studies have concluded that incremental effects have varied from a high of 80 per cent to a low of 30 per cent [7].

In general, most studies have focused their attention on direct incremenitality in plants which received incentives. Although even the problem of identifying direct incremental effects has proven difficult, comprehensive analysis should also consider indirect impacts. Assisted plants may have either complementary or competitive effects on other manufacturing in the region. For example, an assisted plant may offer a market for intermediate inputs which may be served by a new or existing regional plant. Alternatively, assisted plants may compete with other regional manufacturers in either labour markets, other factor markets, or product markets. In the following paragraphs some aspects of the incrementality question are discussed in the context of Georgian Bay.

Assessing Incrementality

Shift and share has been used as a projection technique to estimate how a change in regional comparative advantage affects employment growth in a region [14]. The procedure involves setting the regional competitive rates (i.e., differential shift - DS) in the model to reflect conditions in Georgian Bay in the period before incentives were introduced. However, the actual industry mix (i.e., compositional shift - CS) and net shift conditions of the incentive period are built into the model. The introduction of incentives is assumed to be the sole factor altering Georgian Bay's ability to compete with other regions for industry. Under these conditions the technique will generate estimates of employment in Georgian Bay in 1969 "without incentives". These estimates can be compared with actual 1969 figures.

\[
\begin{align*}
\text{Estimates can be compared with actual 1969 figures.} \\
\end{align*}
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<table>
<thead>
<tr>
<th>Period</th>
<th>Existing Plants</th>
<th>Expansions</th>
<th>Contractions</th>
<th>Employment (Plant)</th>
<th>Failures</th>
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<tbody>
<tr>
<td>1961-65</td>
<td>3.75</td>
<td>2.10</td>
<td>5.30</td>
<td>1.15 (2.75)</td>
<td></td>
</tr>
<tr>
<td>1965-69</td>
<td>12.80</td>
<td>2.70</td>
<td>7.63</td>
<td>1.70 (3.29)</td>
<td></td>
</tr>
<tr>
<td>1969-75</td>
<td>1.45</td>
<td>4.68</td>
<td>6.30</td>
<td>1.52 (7.74)</td>
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\begin{align*}
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\end{align*}
\]
The projections indicate that employment in Georgian Bay in 1969 would have been 8,831 if the regional competitive conditions existing from 1961 to 1965 had continued through the incentive period. The additional 3,854 jobs which were actually generated are, in terms of the projection procedure, attributable to an improvement in regional comparative advantage. If the ADA program were the only factor altering the regional competitive effect, then these jobs could be considered to be incremental. We will return to consider this assumption in a moment.

A second approach to assessing incrementality involves establishing the number of jobs actually occurring in assisted plants as a preliminary to considering the necessity of incentives in generating each project. Table 5 indicates that during the incentive period 97.5 per cent of the net employment increase of 4,295 was concentrated in the 40 plants which received ADA grants. Eighty per cent of the jobs occurred in new plants. The 16 plants which received expansion grants had been growing more rapidly than other Georgian Bay plants in the pre-incentive period; however, their contribution to employment growth through the incentive period was relatively minor.

If all jobs in assisted plants were incremental, then the ADA program could have accounted for up to 4,188 jobs. Alternatively, the shift and share projection indicated incremental employment would have been 3,854 if the introduction of the ADA program was solely responsible for the improvement in Georgian Bay's ability to attract additional industry. These estimates need to be qualified in the light of other factors.

Related Factors

First, 16 plants, which accounted for an increase of 779 jobs, involved expansions of existing facilities. It is particularly difficult to assess the necessity of incentives in the investment decision of this type of project. Plants which received grants to expand had grown at an annual average rate of 9.6 per cent in the pre-Incentive period compared with 1.7 per cent for other manufacturers. One might expect expansion to be a natural consequence of this rapid growth. The additional capital made available through the Incentive program may have facilitated expansion of these growing firms; however, to what extent it was essential in the investment plans of these apparently successful and growing firms cannot be determined in the absence of more detailed information on individual cases. One can only conclude that, as a group, these plants were growing in a way suggesting that some expansion could be expected. To the extent this is true, jobs generated in expansions were not truly incremental.

A second factor affecting the assessment of ADA-related incrementality was the introduction of the Canada-U.S. Auto Pact in 1965. The shift and share projection of incremental employment assumed that the ADA program was the only factor which changed the comparative advantage of Georgian Bay. It is apparent, however, that there was significant interaction between the Auto Pact and ADA grants in generating employment in Georgian Bay.

In creating a continental market for automobiles, the Auto Pact dramatically altered the economic environment in the heretofore small Canadian domestic market. The evidence shows that producers of vehicles and a wide range of parts and components responded to the immediate opportunity by increasing production in Canada [2; 31]. The
Table 5
EMPLOYMENT CHANGE IN ASSISTED & UNASSISTED PLANTS

<table>
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<tr>
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<tr>
<td>All Plants</td>
<td>697</td>
<td>399</td>
<td>1998</td>
<td>2297</td>
<td>9</td>
<td>2277</td>
<td>-1181</td>
</tr>
<tr>
<td>Assisted</td>
<td>366</td>
<td>348</td>
<td>2053</td>
<td>2135</td>
<td>553</td>
<td>1676</td>
<td>-1617</td>
</tr>
<tr>
<td>New</td>
<td>-</td>
<td>27</td>
<td>1700</td>
<td>1709</td>
<td>381</td>
<td>-129</td>
<td>-246</td>
</tr>
<tr>
<td>Expansions</td>
<td>366</td>
<td>321</td>
<td>353</td>
<td>426</td>
<td>172</td>
<td>1805</td>
<td>-1371</td>
</tr>
<tr>
<td>Unassisted</td>
<td>331</td>
<td>51</td>
<td>-55</td>
<td>162</td>
<td>-544</td>
<td>601</td>
<td>436</td>
</tr>
</tbody>
</table>
availability of investment grants in Georgian Bay at the same time made it a doubly attractive location.

Industrial classification systems provide little guidance in identifying non-manufacturing activity which is geared to automobile markets. In addition to the transportation equipment sector, Georgian Bay plants that serve auto related markets are found in the rubber and plastics group, textiles, metal fabricating, electrical products, and non-metallic mineral products. An increase in employment in these plants between 1961 and 1965 indicates that at least 2,166 jobs were in plants whose activity was directly dependent upon the auto industry. New plants accounted for 1,943 of these jobs.

The interdependence of the policy impacts of the two programs makes evaluation of incremental effects of ADA quite problematic. While the Auto Pact created the general economic environment encouraging investment, the ADA incentives probably caused more manufacturers to consider locating in Georgian Bay than would otherwise have been the case. With respect to ADA incentives, these jobs could be considered incremental. At the same time, assembly line production of standard components is often successfully undertaken outside major manufacturing concentrations. The Georgian Bay area is not geographically distant from the major areas of auto production in southern Ontario. It remains questionable whether producers would encounter sufficiently higher costs by locating in Georgian Bay to require the level of public subsidy provided. This raises the possibility that even if these jobs are considered incremental, they are being generated at a high cost to the public.

The duration or longevity of the jobs generated by incentives is another matter which needs to be considered in discussion of incremental effects. The effectiveness of an Incentive program will be demonstrated by a large number of program performance statistics and analytical assumptions [32; 34]. This discussion is restricted to consideration of the longevity of jobs generated in assisted plants. In general, the cost effectiveness will improve with the longevity of the job.

Table 5 reveals that employment in new assisted plants began to decline in the North American 73 period and that both new and expanded plants declined in the 1973-75 period. The 6,417 jobs generated in ADA-assisted plants between 1965 and 1975 were very substantial in the regional economy; however, 25 per cent of those jobs had been lost by 1975.

The discussion of direct incrementality effects of the ADA program suggests that original estimates of incrementality must be treated with caution. In particular, 65 per cent of ADA-related jobs developed in plants that were either expansions of existing operations or producing for the North American auto market. The specialization of rounding investment in these types of operations raise difficult questions which cannot be answered from the evidence at hand. In addition, the evidence suggests that employment in assisted plants was increasingly subject to a high attrition rate through the immediate post-incentive years.

Incremental effects of incentive programs may be indirect as well as direct. Assisted plants may have a complementary effect on the local economy and thereby generate new activities or increase the level of production in existing plants. In such cases, the incremental effects of an incentive program would be increased. Alternatively, assisted plants may be competitive with local manufacturing either by becoming a substitute for or by inhibiting the growth of local activity. Under such circumstances, direct incremental effects would overstate the impacts of incentives. It is clear that such relationships can be quite intricate and present substantial evaluative problems.

Attempts to identify and assess indirect incremental impacts arising through complementary and competitive employment effects presents severe analytical and empirical problems. It is impossible from the evidence available to conclude that complementary or competitive effects were very significant. Evidence supporting the proposition that the ADA program generated complementary effects in other manufacturing plants could not be found. On the other hand, some evidence was found that was consistent with ADA plants exerting a competitive effect on other manufacturers. Since it appears that competitive effects, on balance, outweighed complementary effects, direct incrementality effects should be correspondingly reduced. In the context of this analysis it is impossible to do more than indicate the direction in which these effects are operating. Thus detailed examination of the impacts of incentive programs on employment growth is capable of providing insights into relationships between manufacturing change and public policy but a precise quantitative assessment of incrementality remains intractable.

Structural Change in Georgian Bay Manufacturing

In addition to volume effects, manufacturing incentives policy may have a wide range of structural impacts. Different types of firms and industries are likely to participate to varying degrees in an incentive program. Differential participation may simply reflect changing growth prospects among firms and industries or it may reflect bias which is built into policy [33]. Whatever the cause, changes in aspects of manufacturing structure may be even more important than volume effects in determining the performance of a regional manufacturing sector. Four aspects of structural change are now examined and their policy implications discussed.

Distribution of Employment Among Industries

The mix of industries in a region has long been regarded as an important factor affecting quantitative and qualitative aspects of development. Originally debate centred on the relative merits of a specialized or diversified industrial structure in generating regional development; however, analysis of the relationship between industrial structure and regional development has proven to be complex at both the conceptual and empirical level [8]. In the case of Georgian Bay, Yeates and Lloyd observed that 42.2 per cent of manufacturing employment was in growth industries prior to the introduction of the ADA program. Although this represented a more favourable structure than that which existed in their adjacent control region, manufacturing grew more rapidly in the control region during this period [35].

Table 6 describes the changing distribution of employment among the twenty major manufacturing groups. Conventional measures suggest that the industrial structure tended to be reasonably diversified. The coefficient of specialization hovered around .3 throughout the entire period. The five leading industrial groups accounted for 55 per cent
of employment in 1961 and 1965, 52 per cent in 1969, and 59 per cent in 1975; however, these aggregate measures mask substantial change which was taking place among the individual industry groups.

In the pre-incentive period traditional industries such as furniture and fixtures, food and beverage, and wood appeared in the five leading groups. Following the introduction of the incentive program, electronics, metal fabricating, and higher technology segments of the non-metallic minerals and textile groups became important. Within the transportation equipment group, automobile related activities appeared as a partial counterbalance to the older and troubled shipbuilding industry.

A chi-square test was used to determine whether the 1969 distribution of employment was statistically different from the 1965 distribution. Several methods were used to generate 1969 expected values from the 1961-65 trend. In all cases the 1969 distribution was statistically distinct from the 1965 distribution at the .001 level of significance. There is little doubt that a fundamental structural change occurred in conjunction with the ADA program.

Change in the structure of manufacturing employment resulted from sharp divergences among industry growth rates. Table 7 reveals that average annual growth rates in four industrial groups, electrical products, rubber and plastics, non-metallic minerals, and textiles increased sharply with the availability of incentives. These four groups accounted for 76 per cent of the total regional employment increase and 80 per cent of the increase in assisted plants between 1965 and 1969. Thus the major direct impacts of the ADA program were felt through these four industry groups.

The major restructuring had been accomplished by 1969. In the post-incentive period three of the four assisted industries that had been largely responsible for changing the composition of local manufacturing declined. Although employment increased in electrical products over the six year period, the last two years were marked by sharp employment losses. Among the remaining groups, metal fabricating continued to increase its share of regional manufacturing and accounted for the large majority of growth in this period. The only other groups with a sizeable base which grew in the post periods were the port equipment and non-metallic minerals. Significant employment declines were experienced in two of the older traditional regional industries, leather and furniture.

Although it is clear that the industrial structure was transformed, the question of whether the 1969 (or 1975) structure is "better" than the standard incentive structure is not so easily answered. Attempts to define a "better" or optimal industrial structure apart from a particular regional context have proven unrewarding. For example, if a region has a large proportion of industries which are growing rapidly in the overall economy, it is conventionally labelled as having a favourable structure; however, industries whose "national" growth rates are high do not necessarily grow rapidly in all regions. This is well illustrated in Georgian Bay in the post-incentive period. In Ontario, four industry groups experienced greater than 10 per cent growth in this period; however, three of these actually declined in Georgian Bay.

A particular industrial structure may be labelled as "superior" or "inferior" to another only in terms of its capacity to achieve objectives which are expected to result from manufacturing activity. Such criteria will reflect expectations for the future of the region and should be...
measurable in terms of industry performance. Growth potential or the
capacity to generate jobs is one criterion that gains general acceptance,
particularly in areas of limited job opportunity. Despite the fact that
the true incrementality of the ADA program is likely to be less than the
actual number of jobs appearing in assisted plants, the program did
generate a substantial number of jobs in Georgian Bay in the short
run. Even in the post-incentive period, when the assisted plants
falterered, employment growth in Georgian Bay did match the Ontario
average. Although the Ontario average had declined to a low level in
the 1969-75 period, the growth performance in Georgian Bay reflected a
relative improvement over the pre-incentive period; however, the fact
that the general trend in this period was downward and that the indus­
tries which led the advance appeared to have stagnated gives rise to
concern about longer run prospects.

From a policy perspective, it is clear that the ADA program had
no concern with matching the industrial potential and needs of Georgian
Bay with a strategy of manufacturing growth. The emphasis was strict­
ly upon increasing the level of manufacturing activity in the region. A
fundamental structural impact of this approach was to orient regional
production to North American auto production. Since auto-related
employment appears in many industrial categories, this shift is not
apparent from analysis of employment change in a standard industrial
classification format. This changed orientation has become, however,
the fundamental structural reality for the manufacturing sector in
Georgian Bay.

Table 7

<table>
<thead>
<tr>
<th>Plant Concentration Level</th>
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<tbody>
<tr>
<td>Food, Bever., Tobacco</td>
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<tr>
<td>Rubber, Plastic</td>
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<tr>
<td>Automotive, Knitting</td>
</tr>
<tr>
<td>Clothing, Textile</td>
</tr>
<tr>
<td>Printing, Pr. Tp., etc.</td>
</tr>
<tr>
<td>Rubber, Plastics, Metal</td>
</tr>
<tr>
<td>Machinery, Equip., etc.</td>
</tr>
<tr>
<td>Electrical, Non-Metal</td>
</tr>
<tr>
<td>Chemical, Misc.</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Table 8 indicates that the proportion of regional employment found
in the ten largest plants did not change substantially between 1963 and
1975; however, since the number of plants increased, there was some
increase in relative concentration. In 1963, 39.3 per cent of total
employment was found in 5.5 per cent of the manufacturing plants. By
1975, 3.9 per cent of the plants accounted for 41.7 per cent of the
jobs.

ADA-assisted plants dominated this trend. Assisted plants were
three times as large as the regional average in 1969 and had become
four times as large by 1975. Eight of the ten largest plants in 1969
and 1975 had received ADA grants. Relative to provincial trends,
however, the ADA program had little general effect in increasing the
scale of plants in the region. In 1965 employment in Georgian Bay
plants averaged 74.3 per cent of Ontario plants. By 1975 the ratio had
only increased to 76.6 per cent.
Economic theory suggests that increases in productivity leading to improvements in general economic well-being are linked to increased in scale of production. The Yeates and Lloyd survey revealed that wage levels in assisted plants were higher than those paid in existing manufacturing [35]. Regional income and wage data which would permit this question to be examined are not generally available; however, personal income tax statistics are available for the municipality of Owen Sound, where ten assisted plants located. These data do not reflect a general improvement in regional economic welfare. While annual wages and salaries per tax return in Owen Sound were 82.5 per cent of the Ontario average in the pre-incentive period, they fell to 82.5 per cent in each of the incentive and post-incentive periods. If higher wages and salaries generally prevail in assisted plants, their effect has not been sufficient to bring about an improvement in Owen Sound wages relative to provincial trends.

A final effect to be considered is the increase in potential employment instability associated with the increase in relative concentration. The turnover in the plants appearing in the top ten has been high. Four plants which appeared on the 1963 list were not on the 1969 list and three which appeared on the 1969 list were not on the 1975 list. While large plants can increase the number of job opportunities, sharp downturns and failures can create severe problems in a small regional economy.

In summary, employment became relatively more concentrated in a few plants between 1963 and 1975. ADA-assisted plants were particularly important in contributing to this trend. Little evidence of the impacts on regional economic welfare is available; however, income tax data suggest that relative wage and salary levels in the largest community in the region have not improved since the introduction of the program. Furthermore, increased employment concentration increases the risk of instability associated with significant changes in the fortunes of individual plants that are absolutely large in relation to the regional economy in which they operate.

**Table 8**

<table>
<thead>
<tr>
<th>PLANT CONCENTRATION LEVELS</th>
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<tbody>
<tr>
<td>No. of Plants</td>
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<tr>
<td>Largest 5</td>
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<td>Largest 10</td>
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</table>

In December of 1973 all assisted plants were surveyed. Company officials were presented with figures on the origin of purchases and the destination of sales which they had provided to Yeates and Lloyd. Firms were asked to provide the comparable figures for their most recent year of operations. Of the 38 assisted plants still in production in 1973, 18 provided usable information on inputs and on outputs. These firms accounted for 77 per cent of employment in assisted plants in 1973.

Output linkage remained unchanged in 18 out of 19 cases. Thirteen plants which had no local sales in 1968 continued to have no local sales. Five other plants sold the same proportion locally in 1973 as in 1968 (1-3% - 3 plants; 3-6% - 1 plant; 10-16% - 5 plants). One plant increased its local sales dramatically (from the 1-3% category to over 23%); however, this plant had only four employees. Plants which did make local sales tended to be smaller and experienced more modest employment growth than assisted plants in general.

In 1968, 16 of the 18 plants providing information on inputs had made no local purchases. By 1973, 3 of these were making local purchases (1-3% - 2 plants; 3-6% - 2 plants; 16-23% - 1 plant). Local purchases of the 2 other assisted plants remained at the same level (1-3% - 1 plant; 10-16% - 1 plant).

Local input linkage which did develop was concentrated in the metal fabricating and printing groups. Although there were some instances of increase in local linkage between 1968 and 1973, the extent of integration of assisted plants into the local economy remained much lower than for unassisted plants.

Development strategies which assume that agglomeration effects will result from an initial growth stimulus are increasingly suspect. While intense local linkage may have been important in some of the older industrial complexes such as textiles and metals, agglomeration is by no means a general phenomenon in modern manufacturing [16, 12; 4]. Through a complex web of intra-corporate connections large national and international manufacturing organizations seem able to transcend space. When investment incentive programs rely heavily upon this type of firm, local development impacts become subject to corporate strategies. Research by Salt [22] and Townroe [29] has demonstrated the limited local agglomeration effects resulting from branch plants of large corporations. Moseley and Townroe [21] concluded from their study of linkage adjustments which followed plant movement that the establishment of new local links is of little importance. The most significant linkage impacts may be felt in local service and consumer sectors through regional income multiplier effects arising from the direct increase in jobs and income in assisted plants rather than through an extension of the local technological linkage system [11]. The policy implications of this broadly based research is that agglomeration effects arising from technical linkage are very specific to the firms involved and cannot be counted on in a general way to magnify the original
Ownership and Control of Georgian Bay Manufacturing

The significance of the nationality of ownership and/or control in explaining the performance of manufacturing and development has become an extremely contentious issue [6]. For Canadian manufacturing, the debate revolves around the consequences of ultimate corporate decision-making being located outside Canada. As such it represents an extension of domestic heartland-hinterland relationships now further complicated by the presence of a national border. In an abstract world of economically rational decision-making, nationality of ownership is not considered to be of consequence; however, recognition of the importance of institutional factors and of the absence of the conditions essential for economically rational decision-making have provided support for the position that nationality of ownership or control can be a critical factor affecting the nature of the relationship of a manufacturing firm to the economy in which it operates [3; 9; 13].

Table 9 describes employment trends in Georgian Bay manufacturing firms classified by location of headquarters. Ultimate control is assumed to rest with corporate headquarters, and no allowance is made for possible differences in the extent of decentralization of decision-making within corporate organizational structures. In the pre-incentive period, employment in U.S. plants was stable and well below the level prevailing in Canadian manufacturing at the time.

During the incentive period, 85 per cent of the regional employment increase occurred in U.S.-controlled plants. Offsetting decreases occurred in locally controlled plants and in Canadian plants located outside Ontario. U.S. plants continued to expand their control over Georgian Bay employment in the post-incentive period, although their share of the increase in employment declined to 80 per cent. The participation of U.S. firms in the ADA program has enabled them to extend their control over Georgian Bay employment to the level generally present in Canadian manufacturing. During the last two years of the post-incentive period unemployment losses were concentrated in U.S.-controlled firms. In a period which saw regional employment losses of 1,181, U.S.-controlled firms reduced employment by 1,320.

Concentration solely on employment impacts ignores many of the important issues in the foreign ownership debate; however, even this evidence raises some important policy considerations. While the initial increase in jobs associated with foreign plants was clearly beneficial, the long run impacts are more equivocal. The participation of foreign firms in the ADA program has had the effect of integrating the region more closely into a continental economic system, particularly with respect to the auto industry. The resulting transfer of strategic decision-making to foreign corporate headquarters makes local manufacturers increasingly dependent upon imposed decisions.

Foreign ownership introduces an additional discretionary element into the corporate decision-making process. Decisions may affect the location and level of production as discussed above. Other research has shown that foreign ownership tends to be associated with less local linkage [4; 11] and reduces the autonomy of local plants in their R & D and marketing functions [13]. These kinds of considerations need to be weighed against the benefits seen to arise from utilizing foreign firms as an instrument of regional development policy.
### Table 9

PER CENT DISTRIBUTION OF ESTABLISHMENT AND EMPLOYMENT BY LOCATION OF HEADQUARTERS

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</thead>
<tbody>
<tr>
<td>Georgian Bay</td>
<td>81.3</td>
<td>37.5</td>
<td>81.9</td>
<td>35.8</td>
<td>81.2</td>
<td>33.1</td>
<td>76.5</td>
<td>25.3</td>
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<tr>
<td>Region</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Rest of Ontario</td>
<td>7.1</td>
<td>17.5</td>
<td>7.1</td>
<td>17.7</td>
<td>8.1</td>
<td>19.0</td>
<td>8.5</td>
<td>18.4</td>
</tr>
<tr>
<td>Rest of Canada</td>
<td>1.6</td>
<td>15.5</td>
<td>1.6</td>
<td>16.4</td>
<td>1.6</td>
<td>16.2</td>
<td>1.9</td>
<td>13.6</td>
</tr>
<tr>
<td>U.S.</td>
<td>8.2</td>
<td>26.7</td>
<td>8.2</td>
<td>27.6</td>
<td>8.1</td>
<td>28.8</td>
<td>12.2</td>
<td>40.3</td>
</tr>
<tr>
<td>U.K.</td>
<td>0.5</td>
<td>0.2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Europe</td>
<td>1.1</td>
<td>2.7</td>
<td>1.1</td>
<td>2.6</td>
<td>1.1</td>
<td>2.8</td>
<td>0.9</td>
<td>2.4</td>
</tr>
<tr>
<td>Other Foreign</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
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</tr>
</tbody>
</table>
Summary and Conclusions

The ADA experience in Georgian Bay suggests that location of industry policy can affect the process of manufacturing change to a substantial degree. Growth of manufacturing employment in Georgian Bay manufacturing plants increased at an annual average rate of 10.88 per cent during the period that investment grants were available. Over 95 per cent of employment growth occurred in assisted plants. The corresponding growth rates in the pre- and post-incentive periods were 3.56 per cent and 1.40 per cent.

The magnitude of the employment effects of location of industry policy needs to be assessed in terms of Incremental impacts. The data indicate that at least 65 per cent of the direct jobs in ADA-assisted plants in Georgian Bay should be considered as "conditionally" Incremental. Furthermore the ADA plants appear to have had a modest competitive effect upon existing industry. Competitive impacts should be subtracted from direct Incremental impacts.

Given the limited official data on the ADA program in Georgian Bay and the general problems of identifying Incrementality, it is impossible to provide definitive conclusions on the volume effects of the program. However, by bringing the information and insights derived from this investigation together with both the summary statistics for the ADA program in all of Ontario [7] and the information produced in the Yeates and Lloyd study [35], it is possible to indicate some possibilities. In Table 10 estimates of Incremental employment and the cost per job are presented, based upon the increase of 4,188 jobs in ADA plants from 1965 to 1969. If 60 per cent of the "conditionally" Incremental jobs were truly incremental, then up to 67 per cent of Georgian Bay employment could be called Incremental.

Table 10  
INCREMENTAL IMPACTS OF ADA

<table>
<thead>
<tr>
<th>Incrementality Ratio</th>
<th>Incremental Jobs</th>
<th>Grant/Job*</th>
</tr>
</thead>
<tbody>
<tr>
<td>80%</td>
<td>3350</td>
<td>$6,600</td>
</tr>
<tr>
<td>65%</td>
<td>2722</td>
<td>8,165</td>
</tr>
<tr>
<td>50%</td>
<td>2094</td>
<td>10,614</td>
</tr>
</tbody>
</table>

*Based upon Yeates and Lloyd's information on Investment for 36 plants. Grant is assumed to average 25 per cent of investment. Investment data are adjusted to include the 4 assisted plants not included in the Yeates and Lloyd study.

In addition to affecting the scale of manufacturing in a region, incentives can have profound effects on the structural characteristics of manufacturing industry. The distribution of employment among industry groups underwent fundamental change as a result of differences in ADA program participation among industries. Employment became slightly more concentrated in a few large manufacturing plants. Assisted plants failed to develop significant local linkages; however, the new activity resulted in the local economy becoming closely linked to the North American automobile industry. Finally, the ADA program resulted in a substantial increase in the proportion of employment found in U.S. owned and controlled plants.

Policy makers' major concern with location of industry policy is its impact upon employment levels in development regions. Recent evidence suggests that incentive policies can affect the gross distribution of manufacturing employment (19; 20; 5); however, the full implications of location of industry policy extend far beyond job creation. For example, less is known about the long term impacts of incentives on the performance of firms locating in development regions or on general regional welfare.

Georgian Bay represented something of a special case. It was located close to the industrial core of southern Ontario and benefited from a general expansion of auto-related industries. Regional expansion was rapid and large in relation to the size of the local economy. During the period of rapid expansion of manufacturing, however, related development problems in housing and the environment were encountered. Despite the scale of the ADA impacts in the local economy, population appeared to grow more rapidly in surrounding areas which were not eligible for ADA grants. In each census year from 1961 to 1976, population declined in the designated area relative to the three county area of which it was a part. Growth focused on Barrie, at the eastern edge of the designated region, as population spilled out of the Toronto region to the south.

By the mid-1970s manufacturing employment in Georgian Bay faced considerable uncertainty. The trend in the latter part of the post-incentive period appears to have continued, with the announcement since 1975 of contractions and closures in major Georgian Bay manufacturing plants. The experience in Georgian Bay calls into question the approach to development which was reflected in the ADA program. Development programs must be concerned with more than increasing jobs in target regions. Public agencies must begin with a comprehensive perspective on the meaning of development and endeavour to put these principles into practice in the context of a particular regional framework. Planning and evaluative work in this direction will require much more comprehensive data systems at the regional level than are currently available.
References


