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*THE DISTRIBUTION OF DREE
SPONSORED MANUFACTURING
INVESTMENTS IN ATLANTIC
CANADA 1972 - 75*
Roger Hayter and Keith Storey



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THE DISTRIBUTION OF DREE SPONSORED MANUFACTURING
INVESTMENTS IN ATLANTIC CANADA 1972-75

Roger Hayter and Keith Storey

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The Distribution of DREE Sponsored Manufacturing Investments in Atlantic Canada 1972-75

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N.B. SIC codes 1-20, Tables 11-21, 26, correspond to the industry groups on Tables 1 and 2.

47 Colum headings New Brunswick, Nova Scotia, Prince Edward Island

The Distribution of DREE Sponsored Manufacturing
Investments in Atlantic Canada 1972-75

Roger Hayter and Keith Storey*

The formation in 1969 of the Department of Regional Economic Expansion (DREE) was widely welcomed in Atlantic Canada; this federal initiative represented the intent to provide a more coordinated and comprehensive institutional framework within which to administer an enlarged system of financial support for programmes of regional economic development with funding priorities assigned to Eastern Canada. However, even though DREE has been extremely active and visible in the region in providing assistance for infrastructure provision, manufacturing expansions and a variety of other activities, it has, since its inception, faced a mounting tide of criticism.

Initially, expressions of concern about DREE in the Atlantic Provinces focussed upon the centralization of the department's decision-making functions in Ottawa which, it was argued, created unnecessary delays in responding to local proposals and a lack of understanding of local priorities. While this criticism was largely defused by the policy of decentralization initiated in 1972 (Walker, 1975, p. 210) other criticisms over the impacts and directions of DREE's programmes soon emerged especially with regard to the operations

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of the Regional Development Incentives Act (RDIA). Several studies have found, for example, that the industrial incentives offered under this scheme have largely failed to change the locational preferences of entrepreneurs in that a large proportion of subsidized expansions have not been "incremental", that is they would have gone ahead at the same location with or without support. (Springate, 1972; Usher, 1974; Economic Council of Canada, 1977, pp. 161-63). In addition, Woodward (1974) has provided evidence that the type of subsidies offered encouraged firms to substitute capital for labour thus offsetting one of the Department's main aims, that of creating employment. Perhaps the most sweeping attack on the performance of the RDIA programme, however, was made by the Atlantic Development Council (1976) which concluded that DREE was failing to support the kinds of industrial activities in the kinds of places to the degree that was anticipated and that was thought necessary to generate sustained and rapid growth in the economy of the Atlantic Provinces. The A.D.C.'s (1976) report therefore raised serious internal doubts as to whether DREE's industrial development policy was exerting any significant and longlasting effect on the underlying spatial and industrial structure of the manufacturing sector of Atlantic Canada. Its analysis was limited, however, to the 1969-72 period that is for the initial and possibly uncertain stages of the programme.

This paper constitutes a further analysis of the RDIA programme for the 1972-75 period during which time the scheme became firmly entrenched, widely known to entrepreneurs both inside and outside the region, and the policy of (decision-making) decentralization completed. The scope of the study is an examination of the allocation of RDIA grants awarded to manufacturing firms in the four

Atlantic Provinces. In particular an attempt is made to assess the extent to which the distribution of RDIA awards has been consistent with the long run strategy for development advocated by DREE for Atlantic Canada. The next two sections outline more fully the objectives of the paper and the nature of this strategy.

SCOPE AND LIMITATIONS OF THE ANALYSIS

The overall purpose of this study is to provide various statistical parameters of the RDIA programme and to examine the factors responsible for the industrial and spatial composition of RDIA awards in Atlantic Canada between 1972-75. More particularly the objectives are:

- (a) to determine the level of spending on (and the amount of employment subsidized by) the RDIA programme by province, industry and individual job;
- (b) to assess the contribution of subsidized manufacturing expansions in promoting the diversification of employment opportunities in the manufacturing sector relative to the distribution of industrial employment in 1971;
- (c) to assess the extent to which RDIA awards have been concentrated in the four major centres and especially the extent to which "diversifying" manufacturing activities have been concentrated in these centres;
- (d) to identify the principal location factors influencing entrepreneurial decisions to establish new manufacturing facilities which have been subsidized by DREE; and, in particular, to determine the extent to which jobs sponsored by DREE may be considered "incremental".

There were two principal sources of information used in this study. The first consisted of the data published by DREE in its monthly reports regarding awards of RDIA grants to manufacturing firms between June 1972 and July 1975 for the Atlantic Provinces. The information contained in these reports includes names of firms awarded RDIA grants, the value of the subsidy awarded, expected additions to employment, location of plant, purpose of subsidy (new plant, modernization etc.) and type of product. Second, the analysis draws upon a pilot questionnaire survey conducted in the summer of 1976 of DREE sponsored firms and designed to elicit information on locational choice, industrial linkage and the significance of the RDIA grants to investment decisions. In addition, senior officials of the provincial and federal governments responsible for the implementation of the RDIA programme and related government services were personally contacted and interviewed in Fredericton, Moncton, Halifax and St. John's.

The questionnaire survey consisted of two samples of DREE sponsored firms. The first comprised 100 randomly chosen firms who were awarded an RDIA grant during the study period to construct a new plant ("new plant sample"). These firms were mailed a questionnaire and, whenever possible, subsequently contacted in-person or by phone. As a result the response rate was relatively good as 74 questionnaires were returned (although all questions were not always fully answered). The second sample comprised 100 randomly chosen firms who were awarded RDIA grant to invest in an existing plant ("existing plant sample"). These firms were circulated with a questionnaire following the 'new site sample' survey. Unfortunately, budgetary reasons pre-empted contact of these firms by the authors by phone or in-person. As a result the response rate was relatively low and only 30 useable questionnaires were returned.

On the basis of these sources of information a large amount of statistical data has been generated on the RDIA programme in Atlantic Canada between 1972-75. For the most part this information is illustrated in tabular form and summarized in terms of simple descriptive statistics and frequency distributions while on some of the sampled data the well known X^2 test is applied. More rigorous testing of precisely stated statistical hypotheses was limited, first, by ambiguities inherent in the idea of diversification and, second, by the nature of the data. As regards the latter in many industrial categories insufficiency of observations (in terms of number of subsidized plants) disallows statistical manipulation including, in some cases, even the calculation of percentages. In this regard it might be noted that DREE support of some sectors is represented by just one or two awards. It may also be pointed out that the statistics presented regarding the RDIA programme, for example with respect to employment, constitute expected values and not necessarily realized values. In other words the information presented includes firms who were awarded subsidies but then did not bring their plants on-stream, scaled down their hiring plans or (more likely) subsequently failed.

The second major problem facing this analysis stems from the fact that there is no broadly accepted absolute (and unambiguous) definition of diversification. In addition, it might be noted that DREE has never specified unequivocally what it considers to be an optimal pattern of (employment) diversification for the region. Consequently, this study has adopted the conventional practice of interpreting diversification from a relative perspective and, following the example of the A.D.C. (1976), simply attempts to determine the extent to which DREE has encouraged a broadening of aggregate employment opportunities within the manufacturing

sector of Atlantic Canada. To help assess the impacts of the RDIA programme on the manufacturing employment structure of the region location quotients (L.Q.'s) for 20 two-digit manufacturing sectors and coefficients of specialization (diversification) have been calculated for Atlantic Canada (Table 1) and for each province (Tables 2 and 3) with employment as the variable and Canada as the benchmark region.⁽¹⁾ Calculation of these ratios in this manner, of course, does assume homogeneous production and consumption functions throughout the benchmark region and equates diversification solely with employment distribution. In addition it should be recognized that the numerical values of the indexes may themselves be changed simply by adopting a different system of industrial aggregation (or by choosing a different benchmark region).

Notwithstanding these limitations the L.Q.'s and coefficients of specialization so calculated provide a simple and useful description of the manufacturing structure of Atlantic Canada immediately prior to the study period and yardsticks by which to assess the effects of the RDIA programme. If, for example, an L.Q. > 1.5 is said to define a "distinctive industry" then in 1961 there were only four such industries and by 1971 the number had dropped to two; food and beverages and paper and allied (Table 1). While there were some regional differences in manufacturing specialisms all the provinces remain highly dependent upon the food and beverage sector. Apart from Nova Scotia there seems to have occurred little aggregate diversification of

1. For each industry location quotients are defined as:
$$\frac{\text{employment in the } i^{\text{th}} \text{ industry in the study region}}{\text{employment in all industries in the study region}} \div \frac{\text{employment in the } i^{\text{th}} \text{ industry in the benchmark region}}{\text{employment in all industries in the benchmark region}}$$

For a given study region the coefficient of specialization (Sc) is determined by subtracting the percentage employment of each industry in the study region from that in the benchmark region and summing either the negative or positive values. Sc varies from 0 ("perfect diversification") to 1 ("perfect specialization"). See Isard, 1960.

manufacturing employment during the 1960's. Indeed coefficients of specialization indicate that Newfoundland and Prince Edward Island became even more specialized in the traditionally important activities in 1971 than they were in 1961 (Table 3). Even at the more refined three digit S.I.C. level the impression of a relatively small and highly specialized resource-oriented manufacturing is still evident. (2)

To evaluate the effects of the RDIA programme on the manufacturing employment structure of the region, the relative levels of DREE support by industry are compared with the 1971 L.Q.'s. For example, if the relative level of DREE support for a distinctive industry ($L.Q. > 1.5$) approximates (or exceeds) the relative importance of the industry in the region in 1971 then it is argued that the RDIA programme is helping to reinforce the existing specialized structure. Alternatively, DREE support for a traditionally unimportant industry ($L.Q. < 1.0$) is considered as contributing towards diversification of aggregate employment opportunities in the region. While this procedure invokes a partial and relative interpretation of diversification (specialization) it does allow a qualitative assessment of whether or not the general thrust of the RDIA programme 1972-75 was in the direction DREE anticipated.

DREE'S STRATEGY FOR INDUSTRIAL DEVELOPMENT IN ATLANTIC CANADA

As its spatial framework for the long run industrial development of Atlantic Canada DREE adopted a form of growth centre strategy. In particular, it was growth centre thinking that underlay designation of 12 communities as "special areas" which were made eligible for assistance in infrastructure

2. Using the three digit S.I.C. seven distinctive industries can be identified for 1961 and six for 1971 out of possible total of 36 industries.

and other activities as well as industrial development incentives. While the majority of these communities were relatively small, and perceived as being "resource centres" or "service centres" (A.D.C., 1971, pp. 40-1), the keystone of DREE's growth centre strategy was clearly the four large centres that were selected in 1970 for special area status; namely, St. John's (Nfld), Halifax-Dartmouth (Nova Scotia), St. John and Moncton (New Brunswick). Thus it was at these four centres that DREE anticipated and desired a concentration and diversification of manufacturing employment directly through the operations of the RDIA programme and indirectly by "the infrastructure program, which complements the incentive program in the region's major growth centres, [and] is intended to attract to such centres over time sufficient concentrations of industry to encourage further growth here and hence in the regional economy" (A.D.C., 1976, p. 7).

To further support expansion and diversification of the major growth centres DREE combined with individual provinces in the creation of urban oriented industrial development agencies, specifically the New Brunswick Multiplex Corporation and Metropolitan Area Growth Investments Ltd. (M.A.G.I.). The former institution, created in 1971, was set up to develop a so-called "propulsive industry", and specifically a metal working based industrial complex, in the St. John region. M.A.G.I. was established in 1972 in an effort to stimulate entrepreneurship and investments in the Halifax area.

Despite a clear commitment to growth centre thinking, however, it was obvious to several observers that in practical terms DREE's special area programme could at best be viewed only as a "crude growth centre approach" (Cannon, 1975, p. 122). Thus not only were a number of small communities labelled special areas, including the principal 'reception' settlements involved in the Newfoundland resettlement scheme (see P. Copes, 1972), but

the entire Atlantic region was also made eligible for the same level of support including infrastructure which, contrary to what is frequently assumed, has not been confined to the special areas. In addition it should be recognized that DREE does not have strong discretionary powers over manufacturing development other than control over cash grants which are awarded on the basis of an investment evaluation of each project. Beyond this, DREE has no formal mandate to reject proposals on the basis of broader social criteria (unless they are oil refineries or pulp mills).⁽³⁾ Furthermore DREE does not even attempt to influence either the location of plants within Atlantic Canada or to encourage inter-provincial moves from the Canadian industrial core to designated regions. In other words, while DREE anticipated a concentration and diversification of manufacturing employment at the major growth centres it did not - and still does not - have the powers to ensure individual projects fulfill these expectations. In the words of the A.D.C. (1976, p. 17) DREE's policy approach has been essentially "passive".

Of course, to implement its programmes DREE has necessarily required the close cooperation of individual provinces. In this regard it is not entirely clear the extent to which the provinces supported the principle of spatially concentrating growth, per se. On the other hand, DREE's emphasis on expansion and diversification of secondary manufacturing employment appealed strongly to the provinces who for at least two decades had considered their limited and specialized manufacturing base to be at the root of their economic problems (Gwyn, 1972; George, 1974). Thus the provinces hoped that DREE would command sufficient resources

3. Pulp mills and oil refineries were apparently excluded as candidates for incentives because of their high capital cost per job and because as resource based industries (at least in the case of pulp mills) their location could not be altered by government policy. These criteria have not been applied to other activities, however.

and expertise to generate a substantial secondary manufacturing sector which hitherto their policies had failed to achieve.

In terms of the evolution of its strategy for Atlantic Canada DREE's experimentation with growth centre notions may be perceived as part of an international trend in regional policies in the 1960's in both developed and less developed countries (Richardson and Richardson, 1975; Darkoh, 1977; Brown and Burrows, 1977, p. 182-5). There have been admittedly considerable inter-country variations in the formulation of growth centre policies. Nevertheless such a broadly based trend reflected widely held beliefs that slow growth regions such as Atlantic Canada resulted from "structural" causes and in particular from excessive specialization in traditional, declining industries and from peripheral situations in relation to major market concentrations. With its emphasis on the need for a spatial concentration and diversification of economic activities a growth centre policy appeared to be a particularly appropriate framework to organize government intervention in the interregional disparities issue. DREE's advocacy of a growth centre strategy for Atlantic Canada, for example, has been explicitly interpreted as a response to the economic success achieved within the highly urbanized and diversified economy, of southern Ontario, the so-called Canadian heartland (Todd, 1977). The internationally based trend towards growth centre strategies also appears to have been broadly based on a common rationale. Thus, it was argued that it is more socially efficient to channel investments in relatively few places (and sectors), that is to pursue an unbalanced growth strategy, than it is to widely disperse investments. The argument for direct stimulation of selected large cities is that first, this will induce agglomeration economies and possibly sufficient conditions for

self-sustaining growth within the centres themselves. Secondly, it is argued that expansion of large centres will, in turn, "spread" benefits to surrounding hinterland areas to the extent, for example, that there is an increase in demand for the commodities and (surplus) resources of these areas. While the growth centre framework has been severely criticized (Darwent, 1969; Hansen, 1974; Mathews, 1977) suffice to say this was (an outline of) the rationale used by the A.D.C. (1971) and others (Todd, 1977) in support of DREE's growth centre strategy for Atlantic Canada.

THE RDIA PROGRAMME IN ATLANTIC CANADA

During the study period 512 RDIA grants were awarded to manufacturing firms in the Atlantic Provinces and of these 245 (47.9%) were to aid the construction of new plants and 265 were to be subidize expansion, modernization and/or the introduction of new products at existing plants. The awards to new plants accounted for 13,497 or 70% of the jobs expected to materialize and almost 72% of the value of grants awarded. The average number of (expected) jobs was approximately 55 for new plants compared to 22 for existing plants with both distributions being highly positively skewed (Tables 4 and 5). Thus the modal employment category for the new plants is 15-49 employees and for existing plants 5-14 employees; for all plants combined the modal size category is 15-49 employees as it is for the sampled plants (Table 6).

As regards the overall dimensions of the RDIA programme in Atlantic Canada the Economic Council (1977, p. 154) estimated that during the fiscal period 1969-70 to 1974-5 DREE awarded \$159.6 m. to sponsor 23,619 jobs in the region. Within the study period examined in this paper DREE

awarded approximately \$111m in support of approximately 19,406 jobs. While, admittedly, the RDIA programme comprises less than 40% of total DREE expenditures within Atlantic Canada, in absolute terms the level of industrial subsidies in the region is perhaps not as great as popularly supposed. Indeed, it is interesting to note that with respect to Canada as a whole the Atlantic Provinces have received less than 25% of the capital subsidies awarded to manufacturing firms (Economic Council 1977, p. 154).

In terms of provincial distributions within Atlantic Canada, New Brunswick has received the most support including, for example, almost half of the new plant subsidies and 40.0% of existing plant subsidies (Table 7). New Brunswick's dominance is also evident in the distribution of sampled plants (Table 8). As for the other criteria New Brunswick was awarded 47% of the jobs and 49% of the grants, Nova Scotia 32% of the jobs and 31% of the grants; Prince Edward Island 7.6% of the jobs and 8.3% of the grants; while Newfoundland obtained 13.8% of the jobs and 11.9% of the grants. The distribution of awards to the provinces by employment-size and subsidy-size category (Tables 9 and 10) are similar to the patterns identified for the region as a whole (Tables 4 and 5) except that the average size of sponsored plants is somewhat higher for New Brunswick compared to the other provinces; a tendency which reflects the relatively high proportion of new plant subsidies that went to that province (Table 7). On the basis of manufacturing employment distributions in Atlantic Canada in 1971 (see Table 2) Nova Scotia (with 41.5% of the manufacturing employment in the region) and Newfoundland (17.4% of the manufacturing employment in the region) did not receive their "fair share" of DREE subsidized jobs.

The distribution of subsidy types by SIC categories (for all plants

1972-75 and for the sampled plants) reveals marked variations in DREE's pattern of support (Table 11). These variations are the focus of the next section. The average size of grants also varied substantially among industries although some of the more extreme averages are in sectors in which very few plants received support (Table 12). In general, the data in Table 12 indicate, for employment and value of subsidy, that new plants were consistently more expensive to support and consistently provided more employment than expansion of existing plants. In terms of value of subsidy per job created, however, the differences between old and new plants are very much reduced and there is a strong clustering of the data around the average for all plants of \$5,700 (Table 13). This average cost per job statistic does ignore failures of DREE plants on the one hand and, on the other hand multiplier effects, as well as other considerations. Nevertheless, \$5,700 would seem to be a useful figure to bear in mind if and when alternatives to an industrial incentives programme are taken into account such as minimum income guarantees, wage subsidies or even sponsored out-migration which Copes and Steed (1975) recently suggested for Newfoundland.

The Industrial Composition of RDIA Grants 1972-75

A large amount of data has been tabulated concerning the industrial composition of DREE subsidized manufacturing as compared to 1971 industrial distributions as reported by Statistics Canada. These include the distribution of DREE sponsored manufacturing plants and employment for the 20 two digit S.I.C. categories for Atlantic Canada as a whole (Table 14) and individually for the four provinces (Tables 15-18). Since it might be expected that the RDIA grants in support of new plant construction would reveal a greater tendency towards diversification than

the overall pattern of RDIA awards the industrial composition of expected employment, number of subsidies and value of subsidies awarded to new plants have also been tabulated for Atlantic Canada and the provinces (Tables 19-21).

The most striking characteristic of the industrial composition of RDIA grants 1972-75 in Atlantic Canada is the extent to which they were concentrated in relatively few categories, specifically the traditionally important economic activities. In the region as a whole and with respect to all types of plant subsidy, for example, 50.7% of DREE sponsored jobs were in the food and beverage and wood processing sectors which together accounted for 47.6% of the region's manufacturing labour force in 1971 (Table 14). Provincially, reinforcement of existing specialities has been most apparent in Newfoundland and Prince Edward Island (Tables 15 and 16). In Newfoundland, for example, the food and beverage sector accounted for 56% of the province's manufacturing employment in 1971 and 55% of the employment expected to be generated by RDIA awards while in Prince Edward Island the dominance of this sector to the provincial economy and to the industrial incentives programme is even more marked.

In the larger provinces there was also a close correspondence between the relative importance of the traditional "distinctive" industries and the industrial incentives programme. In New Brunswick, for example, the food and beverages and wood processing sectors, the first and third most important sectors in 1971 comprising 46.2% of the provincial manufacturing employment base, accounted for 42.6% of DREE assisted employment (Table 17). Finally, in Nova Scotia, the food and beverage and transportation equipment sectors, traditionally the province's two leading manufacturing sectors accounting for 44.5% of the province's manufacturing employment in 1971 were allocated 38.2% of the jobs sponsored by DREE (Table 18).

With respect to the industrial composition of the new plant subsidies the same overall characteristic remains evident. Thus for Atlantic Canada the food and beverage and wood processing sectors accounted for 46.4% of sponsored employment and almost 50% of the grants awarded to new plants. There is a significant difference in the kind of support provided by DREE to these two traditionally dominant sectors, however. In particular, wood processing has been substantially "over-represented" in the RDIA programme, especially with respect to subsidies for new plants. This trend is evident throughout Atlantic Canada. In comparison, and except for Prince Edward Island, DREE's support for the food and beverage sector has been dominated by awards to existing plants. In the case of wood processing the majority of subsidies have been awarded to construct new sawmills, an activity which had long been stagnating and even declining in Atlantic Canada. Although there is no evidence of any broadly based sector planning by DREE it is possible that the RDIA programme "activated" latent entrepreneurial expertise within the region. In the case of the food and beverage sector the great majority of awards went to modernize, expand and/or diversify existing fish processing plants many of which had originally been established during the 1960's under various government programmes. In this activity then many of the best opportunities for establishing a new plant had already been exploited.

Whether subsidies should be granted to such resource based activities such as sawmills and fish processing plants is questionable, given that the fundamental purpose of industrial incentives is to alter the locational preferences of entrepreneurs (Cannon, 1975, p. 112). Indeed, because it was felt that the location of resource-based operations could not be influenced by government policy pulp and paper mills were declared

ineligible for DREE assistance - at least in the Atlantic region.⁽⁴⁾

Consequently the paper and allied sector is the only traditionally important sector which has received few RDIA grants. In general, however, DREE's pattern of support for manufacturing activities between 1972-75, in terms of employees generated, number of plants assisted and the value of awards, has tended to reinforce the existing structure of the region.

While DREE has concentrated its support in the traditional activities most economic sectors have received some awards under the RDIA programme. Indeed, there were several sectors which had 1971 L.Q.'s < 1 and where the relative level of DREE support was greater than would have been expected on the basis of their existing importance in the region (as indicated, for example, by the 1971 employment distributions). From this perspective DREE's pattern of support for industry, especially with regard to subsidies awarded to new plants in Nova Scotia and New Brunswick, reveals some success regarding the diversification of aggregate employment opportunities. The most notable examples of diversification include:

- (a) The furniture and fixture sector: This sector which accounted for only 1.1% of the Atlantic region's manufacturing employment in 1971, constituted 9.3% of DREE sponsored employment and has received widespread support in all provinces (except Prince Edward Island) to produce a variety of wooden, plastic and even fibre-glass goods;
- (b) The machine sector: In Nova Scotia this sector has been relatively well supported by DREE in a variety of plants and locations to produce a range of products primarily for industrial consumers;

4. See footnote 3.

- (c) The electrical products sector: Of relatively minor importance to the provincial economies in 1971 electrical products have received extensive sponsorship from DREE notably in Nova Scotia and to some extent in New Brunswick. In Nova Scotia DREE has been attempting to develop high technology, electrical product activities, particularly those with marine applications, in the Halifax-Dartmouth area. It should be noted, however, that during the study period only two RDIA grants, which happened to be large, went to new plants in the Halifax area and one of these involved a branch plant of an electronics firm long established in the city. The other firm actually scaled down its plants at start-up and subsequently failed so that realized employment targets fell considerably below those expected and indicated in Table 18. While in the Halifax area expansion in this sector has been a more apparent than real, growth of electrical products is still considered by DREE and the provincial government to be an important dimension of development strategy (see, Govt. of Nova Scotia, 1973);
- (d) The metal fabricating sector: In New Brunswick metal fabricating activities received considerable DREE support. Several of the plants awarded RDIA grants, in fact, were attracted to the province as part of the New Brunswick Multiplex Corporation which was set up to develop an "industrial complex" of metal working activities in St. John in order to provide goods for off-shore exploration and drilling activities. The anticipated markets did not materialize, however, several plants failed, the New Brunswick Multiplex Corporation was itself phased out in 1976 and the principal remaining participant firm diversified into plastics. Consequently

employment additions in the metal working sector are obviously overestimated as indicated in Table 17. Nevertheless New Brunswick does have a well entrenched metal fabricating sector and a new industrial association of local entrepreneurs has recently been formed and this may be a more realistic basis for expanding these activities;

- (e) The textile sector: In New Brunswick textiles have been sponsored by DREE to a greater extent than would have been expected on the basis of 1971 employment distributions. However, it might be noted that this expansion resulted from the establishment of one large branch plant (see Table 21) and overall textiles remain relatively unimportant to the region;
- (f) The transportation equipment sector: The impressive subsidization of this sector by DREE, notably in New Brunswick and Newfoundland mainly reflected support for boat building, especially recreational (fibre glass) boats, and mobile home and trailer manufacture. In fact, DREE considered the mobile home industry to have considerable growth potential in the region and supported its expansion in all provinces, except Prince Edward Island. Since 1975, however, there have been several signs of overbuilding in this sector including reports of production cutbacks and plant failure.

With respect to the industrial composition of RDIA grants between 1972-75 therefore it must be concluded that while DREE encouraged to some extent a degree of diversification of employment opportunities (especially in Nova Scotia and New Brunswick) the overall results must be regarded as disappointing.⁽⁵⁾ Thus the majority of RDIA awards were concentrated in traditionally

5. A similar observation was made by the A.D.C. (1976, pp. 47-8) for the 1969-72 period.

important sectors and activities and at least some of the anticipated (sector) diversification, especially with regards to electrical products and metal fabricating, has failed to materialize.

The Spatial Composition of RDIA Grants 1972-75

It might be anticipated, that given the limited degree of diversification achieved, that DREE's aspirations for polarizing manufacturing activities in the four major growth centres might be similarly circumscribed. Indeed, this does appear to be the case. The A.D.C. (1976, p. 69) found, for example, that between 1969-72, as a group the growth centres recorded lower increases (higher decreases) in manufacturing employment than the Atlantic Provinces as a whole and this trend appears to have continued during the 1972-75 period. In 1971, for example, the major growth centres accounted for 22.3% of the manufacturing employment in Atlantic Canada while between 1972-75 of the 512 RDIA grants awarded in the region only 116 (or 22.7%) were for the major centres and these were expected to generate just 28.1% of total employment additions in the region and 31.0% of the value of grants awarded (Tables 22 and 23). There are no significant differences in the size distribution of the RDIA awards between growth centres and other areas. In terms of DREE support for new plants the major centres appeared to have fared no better; for example, they accounted for just 24.7% of the new plants established in Atlantic Canada during the study period (Table 24).

There are some variations in the relative performance of the growth centres during the study. In particular St. John's and Halifax-Dartmouth did relatively better within their provincial contexts compared to the

the performance of the New Brunswick growth centres, St. John and Moncton (Table 25). A similar observation was made by the A.D.C. (1976, p. 67) for the 1969-72 period and possibly such a trend reflects the greater number of similar sized 'urban' alternatives, notably Fredericton and Edmunsten, which are available in New Brunswick.

While there is some evidence that DREE encouraged a degree of concentration of manufacturing in St. John's and Halifax-Dartmouth, overall the RDIA programme has not significantly stimulated spatial polarization of manufacturing in the four main growth centres. To a large extent this trend appears to reflect the extensive support for the food and beverage and the wood processing sectors which mainly comprise raw material oriented processing plants. As Table 26 indicates the plants supported in these sectors are predominantly located outside the growth centres (and typically in small, isolated places). In terms of broad sector groupings only metal fabricating (SIC 13) and non-metallic mineral products (SIC 17) were relatively more concentrated in the growth centres than elsewhere.

Locational Orientation of the Sampled Manufacturing Firms

Only limited insights into the spatial distribution of sponsored manufacturing are possible, of course, on the basis of the data published by DREE. To provide further understanding into the locational patterns and behaviour of subsidized manufacturing in Atlantic Canada the sampled plants have been classified as (a) output oriented (b) input-oriented and as (c) footloose (Table 27). Only minor problems were experienced in allocating the sampled plants to one of these 'Weberian' locational categories which are essentially based on considerations of industrial linkage. Thus output oriented activities are attracted to the region

essentially to serve local or regional markets; input oriented activities are set up largely to exploit a specific national resource; while foot-loose activities do not rely upon local inputs or local markets and are essentially attracted to the region by government subsidies and cheap, stable and available labour supplies. Selected characteristics of the geographical distribution of linkages, both with respect to sales (Table 28) and purchases (Table 29) for the sampled plants so-classified have been provided. With respect to the output-oriented plants, for example, as would be expected, virtually all sales were made within Atlantic Canada while a significant number of these plants purchased most of their inputs from outside the region. The input oriented plants on the whole purchased their principal raw materials from local (intra-regional) sources and served a variety of domestic and export markets. Compared to other categories the footloose plants were much more likely to import their principal purchases and somewhat more likely to export. Some of the footloose plants, however, primarily serve the central Canadian market.

The locational classification of sampled plants as outlined here indicates that market orientation is somewhat more important than input-orientation while the footloose plants accounted for approximately 16% of the total sample (Table 27). It is these footloose plants, however, which at the disaggregated level of individual products, have contributed most so far to employment diversification within the region. Generally (8 of the 12 footloose plants in the new plant sample), footloose activities have been established as branch plants by interregional firms such as Venus Electric, Playtex (personal care products), Electrohome (kitchen and bedroom furniture), the Square D Company (electric circuit breakers), Life

Savers (chewing gum), SMI Industries (highway and airport maintenance equipment), Kasper Richter (pedomineters) and Lamilite (kitchen cabinets). The other four new plants classified as 'footloose' include a branch plant established by a Halifax electronics firm to produce underwater electronic equipment, while the remaining three were established by new firms to produce staples, canoes and paddles, and picture frames (for an affiliated retail store).

To help determine whether or not the growth centres were successful in attracting particular types of plant, locational orientation (of sampled plants) has been cross-tabulated by growth centres and elsewhere (Table 30). Application of the X^2 test produces a statistically significant result and inspection of the data indicate that output oriented plants have been most important to the growth centres (Table 30). However, many of these plants were established to serve primarily local market areas and in absolute numbers more output-oriented plants were awarded RDIA grants by DREE outside of the growth centres than inside. In fact, for those output-oriented plants established to serve provincial or inter-provincial markets communities such Truro or Amherst offer a greater degree of centrality than the major growth centres, apart from Moncton. The evidence also indicates that the footloose plants, that is those activities which have contributed most to industrial diversification, have favoured hinterland communities rather than the growth centres. Indeed, this seems to represent continuation of an established trend as many of the widely known branch plants of a footloose nature that were attracted to the region prior to 1972, by such firms as Michelin, Crossley-Karazan, Aerovox have also favoured location in smaller communities.

The relative tendency for the growth centres to attract output oriented activities is partially supported by the geographical distribution of

sales and purchases for plants located in the growth centres compared to elsewhere. Thus inspection of the data indicates that plants in the growth centres marketed mainly within the Atlantic Provinces and exported very little, compared to plants located elsewhere, although X^2 values are not significant (Table 31). In addition, growth centre plants seemed somewhat less likely to purchase inputs locally, compared to plants elsewhere although there is no difference in the propensity of the two groups to import from outside Canada (Table 32).

Concern has sometimes been expressed that the industrial incentives programme has been pre-occupied with subsidizing large footloose branch plant type operations which at best offer unstable employment opportunities. The sampled data do not suggest, however that footloose plants are bigger (or smaller) than other kinds of activities (Tables 33 and 34). Furthermore, while there are examples of footloose plants which exhibit substantial seasonal variations in employment (such as Venus Electric which provides personal care products for the Xmas market) the evidence indicates that in terms of employment footloose plants are more stable than either market or input oriented plants (Table 35). Consequently, the footloose plants subsidized by DREE appear to have contributed to some degree to traditional diversification goals in terms of enhancing the stability of employment and in broadening local employment opportunities. It should be noted however, that this kind of plant has not constituted a large proportion of DREE sponsored grants. In addition to the extent that these plants constitute diversification of the regional economy they have not shown any particular locational preference for the growth centres contrary to DREE's expectations. Finally, and despite the scanty nature of the

evidence, the footloose plants appear to be exerting only limited indirect impacts on the region's economy as, generally speaking, linkage patterns are more oriented to consumers and suppliers located outside of Atlantic Canada.

The Question of Incrementality

DREE's apparent inability to substantially modify existing industrial location trends should not necessarily be considered surprising. It has already been pointed out that in practice the department has few discretionary powers over manufacturing development, with respect to encouraging particular kinds of economic activities or influencing the location of plants within and between provinces. DREE's main criterion for evaluating proposals seems to be an investment analysis of the project's viability. Other than this DREE has no formal mandate to reject proposals on broader social criteria unless the projects involve oil refineries or pulp mills and even in this regard DREE has been inconsistent. This lack of discretion concerning subsidies for industrial developments raises the important question as to the extent to which the manufacturing plants receiving grants are "incremental" to the region. Subsidized plants may be considered incremental to the region (i) if they would not have located in the region without the incentive or (ii) if they would not have been established at all without the incentive. While these categories do not exhaust the ways inducements influence industrial developments, in theory, Dree is not supposed to subsidize investments if they could have gone ahead without the subsidy. There have been several studies, however, which have suggested this may not be the case. Indeed the Economic Council of Canada (1977, p. 162) estimated that possibly 75% of the plants receiving RDIA grants, and at the

least, 41% of sponsored investments, were not incremental.

While these are broad limits there are obvious difficulties in attempting to determine the precise influence of government inducements on the investment decision process. Certainly in our survey of sampled firms the questions asked elicited only superficial responses. Nevertheless, some broad observations may be offered regarding the nature of the location decisions particularly from the point of view of the issue of incrementality.

One of the most surprising characteristics of the new site sample of firms was that of the 73 responses 17 (23%) involved re-locations of existing plants. Furthermore, only one of these plants involved re-location into the Atlantic Provinces from outside and in only one case did a firm contemplate an alternative province or community. The remainder all involved short distance moves primarily within the same community and the moves were stimulated primarily by space limitations at existing locations. In a few instances (at least 3) the moves were to buildings vacated by other firms and therefore did not actually involve new plant construction although identified by DREE as 'new plants' in the monthly reports. Clearly these relocating plants, which typically transferred their existing labour force with them, can hardly be judged "incremental" to the region.

Although industrial incentives theoretically attempt to "re-order locational preferences", only a small proportion of the sampled firms actually considered a locational alternative at any scale. Thus, of 73 responses in the new site sample only 21 (28.8%) contemplated locating in another province, which is virtually the same result stated by the A.D.C. (1976, p. 82), and only 19 firms considered alternative communities. (Of the in-site sample, 4 of the 30 firms considered provincial alternatives and 5 considered community alternatives). Several overlapping reasons may be offered to help explain the limited nature of explicit locational

evaluation. First, for those firms mentioned above who were re-locating over relatively short distances, provincial and community location was essentially a "given" and the investment decision focussed on such questions as plant size, layout and equipment. Second, approximately half the new-site sample comprised establishment of a new business venture by a local entrepreneur and for these entrepreneurs the decision problems explicitly considered focussed on the type of product to be produced and the size and nature of the plant with questions of location choice, again, typically taken as given. Finally, apart from these 'behavioural' constraints to locational choice, since many of the sponsored plants were established to exploit a specific resource or to serve a local market traditional transfer cost considerations clearly imposed strong limits to locational choice.

Of the 21 firms considering spatial alternatives at the provincial level only 11 considered locating outside of the Atlantic Provinces entirely. These firms included eight establishing footloose plants, which is to be expected, and three market oriented plants. With respect to the latter group, two involved small single plant firms; one entrepreneur considered "pulling up roots" and moving to Manitoba and the other decided to return to his native New Brunswick to set up a fibre glass boat plant rather than in Vancouver (B.C.) where he was working. He felt in Vancouver the risks, wages and overheads were "too high". The other market oriented plant was a Quebec based firm which decided in favour of Newfoundland rather than Ontario (no reasons offered). With regard to the footloose plants contemplating a location outside of Atlantic Canada, government subsidies and labour availability and costs were cited as the "decisive" factors in favour of Atlantic Canada. One of these firms, based in Europe, and making its first overseas investment, in order to increase its

access to the North American market, also indicated New Brunswick offered a 'strategic' location between Europe and North America. (In addition, this firm indicated that a location in the United States was rejected because of the uncertainty generated at the time by the Watergate crisis).

It has to be recognized that any attempt to determine the extent to which DREE sponsored manufacturing firms were incremental on the basis of the somewhat limited questionnaire evidence has to be necessarily speculative. In response to the question "Did the Financial Support offered by DREE make any difference to invest here?" 34 out of 62 responses (54.8%) indicated positively. This number of plants, however, represents the most that can be considered incremental. Thus many of these firms who claimed DREE did influence their location decision actually never explicitly contemplated a community or provincial alternative. In addition many of these plants included resource based activities such as sawmills and local market oriented activities such as printers and dairies. At the other end of the scale it might be reasonably argued that the most pessimistic limit on the number plants that can be considered incremental may be defined by those plants (11) who contemplated locating outside the Atlantic region. This represents only 15% of the new sample responses which is even less than the Economic Council's lower limit of 25%. However, if all footloose plants are included then the number of plants increases to 15 which is 20% of the total number of responses. An argument may be suggested, however, why this lower limit possibly underestimates the effects of the RDIA programme on the locational preferences of entrepreneurs. Thus just the knowledge of the availability of industrial incentives may have helped stimulate investments which might not otherwise have occurred at all -

including some established by local entrepreneurs to exploit a local market or resource. It is difficult to say, on the evidence available, to what extent the RDIA programme has helped create an atmosphere of entrepreneurial initiative in the region. Suffice to note that several firms indicated, that while DREE did not influence location per se, investment in a new plant would not have been possible without the existence of government support. In conclusion, this study would support the upper and lower estimates suggested by the Economic Council for defining the number of plants that may be considered incremental (with perhaps a suggestion that the upper limit is too high). Wherever the true proportion lies, however, it is clear that a lot of the plants that were subsidized between 1972-75 did not "need" the subsidies. The identification and implementation of criteria by which to evaluate proposals requesting government support would seem therefore to be one very obvious direction in which DREE should be moving.

CONCLUSION

The main general conclusion that arises from this examination of the RDIA programme between 1972-75 in the Atlantic Provinces is that the actual allocation of industrial incentives was inconsistent with the strategy of growth advocated by DREE. Essentially the same conclusion was reached by the A.D.C. (1976) for the 1969-72 period. In particular, the RDIA programme failed to significantly diversify and spatially polarize aggregate employment opportunities in accordance with DREE's growth centre strategy for the region. Even the diversified activities that have been attracted have tended to favour smaller communities rather than the major growth centres. This apparent failure to radically alter the spatial organization of manufacturing activities in Atlantic Canada stems largely from DREE's

"passive" approach to industrial development which, in the absence of broad planning criteria (i.e. constraints to entrepreneurial behaviour) by which to evaluate proposals, essentially represents a policy of subsidized laissez-faire.

The main problem which arises from the failure to match the tactics of the industrial incentives scheme with overall strategy is that such inconsistency contributes to already high levels of economic uncertainty in the region. The lack of any clear direction in federal government policy, for example, creates considerable problems for individuals, communities and regions who are trying to forecast and plan on any kind of long term basis. In such a situation it seems reasonable to suggest that decisions pertaining to industrial development are probably resolved according to the political power of those bargaining rather than according to social and economic criteria. In addition, there are also problems for planners and others attempting to evaluate and learn from DREE's experimentation with the growth centre strategy.

Thus, on the basis of the actual operation of the programme 1969-75, it is difficult to equivocally conclude whether or not a growth centre strategy is appropriate (see Todd, 1977) or inappropriate for Atlantic Canada (see Mathews, 1977)! However, all the various policy changes that have occurred in economic development programmes in recent years in Atlantic Canada point to first, an increasingly dominant role by the provinces in the planning process and, second, a retreat from the growth centre strategy (Hayter and Storey, 1978). Certainly at the present time it is difficult to identify any long term and uni-directional strategy favoured by DREE for Atlantic Canada as a whole. Unfortunately, the danger of such a policy void at a time of growing disillusionment over the effects of regional economic policy, is that the very principle of regional intervention becomes vulnerable.

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Table 1

Manufacturing Employment: Canada and Atlantic Canada 1961-71

Manufacturing Sector (S.I.C. Code)	1961			1971		
	Atlantic Canada	Canada	Location Quotients	Atlantic Canada	Canada	Location Quotients
Food/Beverages	26,280	219,185	2.17	39,135	242,430	2.77
Tobacco	20	8,833	.01	105	8,945	.02
Rubber	88	18,844	.01	800	44,950	.30
Leather	474	33,166	.26	290	28,700	.17
Textiles	1,278	62,252	.37	1,725	68,785	.43
Knitting Mills	1,032	19,746	.94	1,235	18,315	1.16
Clothing	799	91,928	1.57	600	94,700	.11
Wood Industries	10,208	98,871	1.87	8,215	100,570	1.40
Furniture/Fixtures	647	35,696	.33	935	44,195	.36
Paper/Allied	10,875	101,640	1.93	13,895	123,825	1.93
Printing/Publishing	3,578	84,265	.77	4,120	103,480	.69
Primary Metals	4,229	90,156	.85	4,735	117,040	.69
Metal Fabricating	3,792	103,216	.66	4,145	135,945	.52
Machine Industries	527	49,821	.19	1,170	77,700	.26
Transportation Equipment	7,507	118,021	1.15	7,475	164,195	.78
Electrical Products	948	84,924	.20	2,710	117,015	.40
Non-Metallic Mineral Products	2,193	47,019	.84	2,575	55,850	.79
Petroleum/Coal	1,067	16,959	1.13	1,210	19,710	1.06
Chemicals	1,315	69,510	.34	2,845	78,735	.62
Miscellaneous	914	50,813	.33	1,575	62,240	.43
	<u>77,771</u>	<u>1,404,865</u>		<u>99,500</u>	<u>1,707,330</u>	

Source: Dominion Bureau of Statistics

Table 2

Manufacturing Employment in Atlantic Canada by Province 1971⁽¹⁾

Manufacturing Sector	New Brunswick	Nova Scotia	Prince Edward Island	Newfoundland
Food/Beverages	12,675(2.45)	13,770(2.35)	3,060(5.12)	9,625(3.85)
Tobacco	35(0.00)	40(0.00)	35(1.60)	0(0.00)
Rubber	110(0.11)	660(0.61)	5(0.01)	30(0.01)
Leather	215(0.35)	50(0.01)	15(0.21)	10(0.00)
Textiles	475(0.32)	1,145(0.69)	60(0.25)	50(0.01)
Knitting Mills	10(0.00)	1,225(2.78)	0(0.00)	0(0.00)
Clothing	370(0.18)	175(0.01)	0(0.00)	60(0.01)
Wood Industries	4,150(1.93)	2,850(1.17)	330(1.33)	890(0.86)
Furniture/Fixtures	395(4.17)	455(0.42)	15(0.14)	70(0.15)
Paper/Allied	7,505(2.84)	3,100(10.4)	5(0.00)	3,280(2.57)
Printing/Publishing	1,415(0.65)	1,970(0.79)	165(0.65)	570(0.54)
Primary Metals	775(0.31)	3,580(1.27)	20(0.01)	365(0.30)
Metal Fabricating	1,695(0.58)	1,765(0.54)	110(0.33)	235(0.17)
Machine Industries	440(0.11)	565(0.30)	50(0.26)	120(0.15)
Transportation Equipment	2,220(0.63)	4,755(1.20)	95(0.23)	400(0.24)
Electrical Products	920(0.37)	1,640(0.58)	25(0.01)	125(0.10)
Non-Metallic Mineral Products	1,115(0.94)	1,015(0.75)	35(0.25)	415(0.72)
Petroleum/Coal	295(0.70)	790(1.66)	0(0.00)	125(0.62)
Chemicals	710(0.42)	1,230(0.65)	150(0.77)	750(0.92)
Miscellaneous	910(0.68)	480(0.32)	25(0.16)	150(0.23)
	<u>36,425</u>	<u>41,260</u>	<u>4,205</u>	<u>17,270</u>

Source: Dominion Bureau of Statistics

(1) Location quotients are given in parentheses using Canada as the benchmark region.

Table 3

Coefficients of Specialization for Manufacturing Employment
in the Atlantic Provinces 1961 and 1971

	<u>New Brunswick</u>	<u>Nova Scotia</u>	<u>Prince Edward Island</u>	<u>Newfound- land</u>	<u>Atlantic Canada</u>
1961	37.7	31.5	55.1	50.1	32.4
1971	39.0	26.8	60.1	52.1	34.5

Distribution of Employment by Subsidy Types 1972-75

	<u>Employment Categories</u>							Total Employment
	0-4	5-14	15-49	50-99	100-199	200-499	500-999	
New Plant Subsidies	16	68	99	31	23	9	1	13,497
Existing Plant Subsidies	84	86	67	22	5	1	0	5,907

Table 5

Distribution of Grants by Subsidy Type 1972-75

	<u>Grant Categories (\$000)</u>								Total Value
	0- 9.9	10- 24.9	25- 49.9	50- 99.9	100- 199.9	200- 499.9	500- 999.9	1M- 5M	
New Plant Subsidies	3	21	52	50	50	37	21	13	74,433
Existing Plant Subsidies	18	76	57	49	35	18	10	2	31,383

Table 6

Employment Distribution of Sampled Plants and All DREE

Subsidized Plants 1972-75

Employment Categories

	0-4	5-14	15-49	50-99	100-199	200-499	500-999	<u>Total</u>
All Plants	100	154	166	53	28	10	1	512
Sampled Plants	6	33	34	17	9	3	1	103

Table 7

Type of Subsidy By Province 1972-75

	New Plant Subsidies (%)	Existing Plant Subsidies (%)
New Brunswick	118(47.8%)	106(40.0%)
Nova Scotia	70(28.3%)	85(32.1%)
Prince Edward Island	20(8.1%)	31(11.7%)
Newfoundland	39(15.8%)	43(16.2%)
	247	265

Table 8

Provincial Distribution of Sampled Plants

	<u>New Plant Sample</u>	<u>All Plants</u>
New Brunswick	32	44(42%)
Nova Scotia	24	37(36%)
Prince Edward Island	2	5(5%)
Newfoundland	<u>16</u>	<u>18(17%)</u>
	74	104

Table 9

DREE Sponsored Employment 1972-75 By Province

Province	Employment Categories							Total Employment ¹
	0-4	5-14	15-49	50-99	100-199	200-499	500-999	
New Brunswick	43	63	75	20	18	5	0	9035
Nova Scotia	28	54	44	20	4	4	1	6227
Prince Edward Island	16	11	18	2	4	0	0	1468
Newfoundland	13	26	29	11	2	1	0	2676

¹ Totals estimated by multiplying class frequency with class mid-marks and summing class totals. Note also employment losses due to plant failures are not included in this table.

Table 10

Value of DREE Grants 1972-75 By Province

Province	Dollar Subsidy Categories (\$000)								Total Value ¹
	0-9.9	10-24.9	25-49.9	50-99.9	100-199.9	200-499.9	500-999.9	1M-5M	
New Brunswick	9	45	44	44	29	25	21	7	54,383
Nova Scotia	4	26	38	27	36	15	3	6	34,075
Prince Edward Island	4	12	11	8	6	6	3	1	9,193
Newfoundland	4	14	16	20	14	9	4	1	13,165

¹ Totals estimated by multiplying class frequency with class mid-marks and summing class totals.

Table 11

Distribution of Subsidy Types By SIC Categories for all
Plants Awarded RDIA Grants and for Sampled Plants 1972-75

SIC Category	All Plants (%)	All New Plants (%)	Sampled Plants (%)	Sampled New Plants (%)
01	192 (37.5)	61 (24.7)	24 (23.1)	16 (21.6)
02	-	-	-	-
03	3	2	-	-
04	3	3	-	-
05	9	3	3	-
06	1	1	2	1
07	-	-	-	-
08	90 (17.6)	58 (23.5)	18 (17.3)	14 (18.9)
09	26 (5.1)	16 (6.5)	6	1
10	15 (2.9)	5	1	1
11	18 (3.5)	7	5	2
12	1	1	1	1
13	38 (7.4)	18 (7.3)	13 (12.5)	11 (14.9)
14	20 (3.9)	16 (6.5)	2	1
15	28 (5.5)	17 (6.9)	9	8
16	8	-	3	3
17	30 (5.9)	18 (7.3)	2	2
18	1	-	-	-
19	4	3	2	2
20	25 (4.9) <u>512</u>	12 (4.9) <u>247</u>	6 <u>104</u>	6 <u>74</u>

Table 12

DREE Assisted Projects 1972-75: Average Employment Created
and Grants Awarded by S.I.C. Category

SIC Code	Average No. of Jobs Created			Average Grant Awarded (\$000)		
	All Plants	New Plants	Existing Plants	All Plants	New Plants	Existing Plants
01	33	57	22	171	391	69
02	-	-	-	-	-	-
03	10*	10	10	50	66	38
04	25*	25	-	138	138	-
05	79*	121	59	858	1025	775
06	10*	10	-	18	18	-
07	-	-	-	-	-	-
08	39	49	21	261	268	248
09	62	71	47	264	314	184
10	14*	16	13	140	105	157
11	11	18	7	73	150	23
12	32*	32	-	300	300	-
13	37	44	30	226	331	132
14	35	39	17	148	175	43
15	54	68	36	220	315	71
16	182	240	6	982	1281	84
17	21	28	6	200	262	105
18	32	-	32	300	-	300
19	106*	130	32	253	288	150
20	<u>22</u>	<u>37</u>	<u>9</u>	<u>109</u>	<u>177</u>	<u>45</u>
	<u>38</u>	<u>54</u>	<u>23</u>	<u>216</u>	<u>319</u>	<u>122</u>

* Calculations based on five or fewer plants.

5 plants

DREE Assisted Projects 1972-75: Per-Capita Value of Subsidy
for Each Job Created by S.I.C. Category

SIC Code	Value of Subsidy Per Job Created (\$000)		
	All Plants	New Plants	Existing Plants
01	5.1	6.9	3.1
02	-	-	-
03	5.0*	6.6	3.8
04	5.5*	5.5	-
05	10.9*	8.5	13.1
06	1.8*	1.8	-
07	-	-	-
08	6.7	5.5	11.8
09	4.3	4.4	3.9
10	10.0*	6.6	12.1
11	6.6	8.3	3.3
12	9.4*	9.4	-
13	6.1	7.5	4.4
14	4.2	4.5	2.5
15	4.1	4.6	2.0
16	5.4	5.3	14.0
17	9.5	9.4	17.5
18	9.4*	-	9.4
19	2.4*	2.2	4.7
20	5.0	4.8	5.0
	<u>5.7</u>	<u>5.9</u>	<u>5.3</u>

* Calculations based on five or fewer plants.

Manufacturing Plants and Employment in Atlantic Canada

1971 and Those Assisted by DREE 1972-75

SIC Code	Manufacturing Establishments 1971(%)	DREE Assisted Plants (%)	Manufacturing Employment: 1971(%)	DREE Assisted Employment 1972-75(%)
01	626(34.7)	192(37.5)	39.3	6,348(32.7)
02	0	0	0.1	0
03	9(0.5)	3(0.6)	0.8	29(0.1)
04	6(0.3)	3(0.6)	0.3	74(0.4)
05	27(1.5)	9(1.8)	1.7	715(3.7)
06	7(0.4)	1(0.2)	1.2	10(0.1)
07	9(0.5)	0	0.6	0
08	411(22.8)	90(17.6)	8.3	3,496(18.0)
09	67(3.7)	26(5.1)	0.9	1,603(8.3)
10	38(2.1)	15(2.9)	14.0	210(1.1)
11	149(8.3)	18(3.5)	4.1	203(1.0)
12	15(0.8)	1(0.2)	4.8	32(0.1)
13	104(5.8)	38(7.4)	4.2	1,386(7.1)
14	21(1.2)	20(3.9)	1.2	700(3.6)
15	89(4.9)	28(5.5)	7.5	1,503(7.7)
16	12(0.7)	8(1.6)	2.7	1,452(7.5)
17	94(5.2)	30(5.9)	2.6	631(3.3)
18	5(0.3)	1(0.2)	1.2	32(0.1)
19	39(2.2)	4(0.8)	2.9	423(2.2)
20	74(4.1)	25(4.9)	1.6	560(2.9)
	<u>1,802</u>	<u>512</u>		<u>19,407</u>

Table 15

Manufacturing Plants and Employment in Newfoundland 1971 andThose Assisted by DREE 1972-75

SIC Code	Manufacturing Establishments 1971(%)	DREE Assisted Plants 1972-75 (%)	Manufacturing Employment 1971(%)	DREE Assisted Employment 1972-75(%)
01	95(38.8)	41(50.0)	55.8	1473(55.0)
02	0	0		0
03	0	1(1.2)	0.2	10(0.4)
04	2(0.8)	3(3.7)	.1	74(2.8)
05	2(0.8)	0	.3	
06	0	0		
07	1(0.4)	0	.3	
08	70(28.6)	11(13.4)	5.2	389(14.5)
09	5(2.0)	2(2.4)	.4	107(4.0)
10	4(1.6)	2(2.4)	19.0	5(0.2)
11	20(8.2)	1(1.2)	3.3	2(0.1)
12	2(0.8)	0	2.1	
13	10(4.1)	9(11.0)	1.4	279(10.4)
14	0	0	0.7	
15	7(2.9)	3(3.7)	2.3	169(6.3)
16	1(0.4)	1(1.2)	0.7	9(0.3)
17	13(5.3)	3(3.7)	2.4	74(2.8)
18	1(0.4)	0	0.7	
19	6(2.4)	1(1.2)	4.3	9(0.3)
20	6(2.4)	4(4.9)	0.9	76(2.8)
	<u>245</u>	<u>82</u>		<u>2676</u>

Table 16

Manufacturing Plants and Employment in Prince Edward Island 1971 and
Those Assisted By DREE 1972-75

SIC Code	Manufacturing Establishments 1971(%)	DREE Assisted Plants 1972-75 (%)	Manufacturing Employment 1971(%)	DREE Assisted Employment 1972-75(%)
01	77(50.3)	37(72.5)	72.8	1167(79.4)
02	0	0	0.8	
03	0	0	0.1	
04	1(0.7)	0	0.4	
05	4(2.6)	1(2.0)	1.4	2(0.1)
06	0	0		
07	0	0		
08	33(21.6)	3(5.9)	7.8	96(6.5)
09	1(0.7)	0	0.4	
10	1(0.7)	0	0.1	
11	9(5.9)	0	3.9	
12	0	0	0.5	
13	6(3.9)	4(7.8)	2.6	118(8.0)
14	2(1.3)	1(2.0)	1.2	2(0.1)
15	6(3.9)	4(7.8)	2.3	82(5.6)
16	0	0	0.6	
17	5(3.3)	1(2.0)	0.8	2(0.1)
18	0	0		
19	4(2.6)	0	3.6	
20	4(2.6)	0	0.6	
	<u>153</u>	<u>51</u>		<u>1469</u>

Manufacturing Plants and Employment in New Brunswick 1971

and Those Assisted By DREE 1972-75

SIC Code	Manufacturing Establishments 1971(%)	DREE Assisted Plants 1972-75 (%)	Manufacturing Employment 1971(%)	DREE Assisted Employment 1972-75(%)
01	204(33.5)	59(26.3)	34.8	1754(19.4)
02	0	0	0.1	
03	6(1.0)	0	0.3	
04	3(0.5)	0	0.6	
05	9(1.5)	3(1.3)	1.3	508(5.6)
06	1(0.2)	1(0.4)	0	32(0.4)
07	4(0.7)	0	1.0	
08	128(21.0)	54(24.1)	11.4	2099(23.2)
09	23(3.8)	17(7.6)	1.1	914(10.1)
10	20(3.3)	7(3.1)	20.6	113(1.3)
11	48(7.9)	9(4.1)	3.9	122(1.4)
12	7(1.1)	1(0.4)	2.1	32(0.4)
13	41(6.7)	16(7.1)	4.7	797(8.8)
14	9(1.5)	3(1.3)	1.2	213(2.4)
15	13(2.1)	14(6.3)	6.1	828(9.2)
16	6(1.0)	5(2.2)	2.5	343(3.8)
17	36(5.9)	15(6.7)	3.1	426(4.7)
18	1(0.2)	0	0.1	0
19	17(2.8)	2(0.9)	1.9	381(4.2)
20	<u>33(5.4)</u>	<u>18(8.0)</u>	2.5	<u>475(5.3)</u>
	<u>609</u>	<u>224</u>		<u>9037</u>

Manufacturing Plants and Employment in Nova Scotia 1971 and Those
Assisted By DREE 1972-75

SIC Code	Manufacturing Establishments 1971(%)	DREE Assisted Plants 1972-75 (%)	Manufacturing Employment 1971(%)	DREE Assisted Employment 1972-75(%)
01	250(31.4)	55(35.5)	33.4	1958(31.4)
02	0	0	0.1	
03	3(0.4)	2(1.3)	1.6	19(0.3)
04	0	0	0.1	
05	12(1.5)	5(3.22)	2.8	203(3.3)
06	6(0.8)	0	3.0	
07	4(0.5)	0	0.4	
08	180(22.6)	22(14.22)	6.9	911(14.6)
09	38(4.8)	7(4.5)	1.1	581(9.3)
10	13(1.6)	6(3.9)	7.5	73(1.2)
11	72(9.1)	8(5.2)	4.8	77(1.2)
12	6(0.8)	0	8.7	
13	47(5.9)	9(5.8)	4.3	191(3.1)
14	10(1.3)	16(10.3)	1.4	484(7.3)
15	63(7.9)	7(4.5)	11.5	424(6.8)
16	5(0.6)	2(1.3)	4.0	1099(17.6)
17	40(5.0)	11(7.1)	2.5	128(2.1)
18	3(0.4)	1(0.6)	1.9	32(0.5)
19	12(1.5)	1(0.6)	3.0	32(0.5)
20	31(3.9)	3(1.9)	1.2	15(0.2)
	<u>795</u>	<u>155</u>		<u>6227</u>

Table 19

Value of Grants Awarded for New Plants by DREE
1972-75 by SIC Category and Province

\$000

SIC Code	Brunswick	Scotia	Island	Newfoundland	Atlantic Provinces
01	1877.5 (5.0%)	9842.5 (38.6%)	6525 (81.9%)	5625 (66.4%)	23870 (30.1%)
02					
03		75		37	112
04				412 (4.9%)	412
05	3000 (8.0%)	37.5	37.5		3075 (3.9%)
06	18				18
07					
08	10990 (29.3%)	2680 (10.5%)	750 (9.4%)	1125 (13.3%)	15545 (19.6%)
09	1242.5 (3.4%)	3392.5 (13.3%)		337.5	5022 (6.3%)
10	337	150		35	522
11	917.5	112.5		17.5	1048
12	300				300
13	4912.5 (13.1%)	505	355	187.5	5960 (7.5%)
14	1200 (3.2%)	1592 (6.2%)			2793
15	4480 (11.9%)	467.5	300	112.5	5362 (6.7%)
16	1687.5 (4.5%)	6000 (23.6%)			7687 (9.7%)
17	3730 (9.9%)	600		392 (4.6%)	4722 (5.9%)
18					
19	825			37.5	863
20	1950 (5.2%)	22		150	2122
	<u>37,517.5</u>	<u>25,477.5</u>	<u>7967.5</u>	<u>8470</u>	<u>79,433</u>

Table 20

Employment Expected in New Plants Subsidized
by DREE 1972-75 by SIC Category and by Province

SIC Code	New Brunswick	Nova Scotia	Prince Edward Island	Newfoundland	Atlantic Provinces
01	891 (13.4%)	1036 (23.5%)	831 (74.7%)	702 (54.1%)	3460 (25.6%)
02					
03		10		10	20
04				73	73
05	349 (5.2%)	10	3		362 (2.7%)
06	32				32
07					
08	1719 (25.8%)	795 (18.0%)	96 (8.6%)	221 (17.0%)	2831 (21.6%)
09	478 (7.2%)	549 (12.3%)		106 (8.2%)	1133 (8.4%)
10	42	32		5	79
11	103	19		3	125
12	32				32
13	553 (8.3%)	76	109 (9.8%)	42	780 (5.8%)
14	214	417 (9.4%)			631 (4.7%)
15	807 (12.1%)	256 (5.8%)	74	19	1156 (8.6%)
16	340 (5.1%)	1099 (24.9%)			1439 (10.7%)
17	328 (4.9%)	104		74	506 (3.7%)
18					
19	381 (5.7%)			10	391 (2.9%)
20	403 (6.0%)	12		32	447 (3.3%)
	6672	4415	1113	1297	13497

Table 21

Number of New Plants Subsidized by DREE
1972-75 by SIC Category and Province

SIC Code	New Brunswick	Nova Scotia	Prince Edward Island	Newfoundland	Atlantic Provinces
01	21(17.8%)	14(20.0%)	12(60.0%)	14(35.9%)	61(24.7%)
02	-	-	-	-	-
03	-	1	-	1	2
04	-	-	-	3	3
05	1	1	1	-	3
06	1	-	-	-	1
07	-	-	-	-	-
08	34(28.8%)	14(20.0%)	3	7(17.9%)	58(23.5%)
09	8(6.8%)	6	-	2	16(6.5%)
10	2	1	-	2	5(2.0%)
11	4	2	-	1	7(2.8%)
12	1	0	-	-	1
13	9(7.6%)	4	3	2	18(7.3%)
14	3	13(18.5%)	-	-	16(6.5%)
15	11(9.3%)	3	1	2	17(6.9%)
16	4	2	-	-	6(2.4%)
17	8(6.8%)	7(10.0%)	-	3	18(7.3%)
18	-	-	-	-	-
19	2	-	-	1	3
20	9(7.6%)	2	-	1	12(4.9%)
	<u>118</u>	<u>70</u>	<u>20</u>	<u>39</u>	<u>247</u>

Table 22

Distribution of Employment by Growth Centres and Other Areas

	<u>Employment Categories</u>							Total Employment
	0-4	5-14	15-49	50-99	100-199	200-499	500-999	
Growth Centres	15	38	42	11	5	4	1	5,457
Other Areas	85	116	124	42	23	6	0	13,950

Table 23

Distribution of Grants by Growth Centres and Other Areas

	<u>Grant Categories (\$000)</u>								Total Value
	0- 9.9	10- 24.9	25- 49.9	50- 99.9	100- 199.9	200- 499.9	500- 999.9	1M- 5M	
Growth Centres	3	19	22	25	23	13	4	7	34,398
Other Areas	18	78	87	74	62	42	27	8	76,419

Table 24

Distribution of Subsidy Types By Province and By
Growth Centres and Elsewhere 1972-75

	<u>New Plant Subsidies</u>		<u>Existing Plant Subsidies</u>	
	<u>Growth Centres</u>	<u>Elsewhere</u>	<u>Growth Centres</u>	<u>Elsewhere</u>
New Brunswick	31	87	27	79
Nova Scotia	14	56	18	67
Prince Edward Island	0	20	0	31
Newfoundland	16	23	10	33

Table 25

Employment in Growth Centres: 1971 Totals and Number
Sponsored by DREE 1972-75

	<u>Manufacturing</u>	<u>Employment 1971</u>	<u>Employment Sponsored by DREE</u>	
	<u>Total</u>	<u>Provincial</u> <u>Share</u>	<u>Total</u>	<u>Provincial</u> <u>Share</u>
Halifax-Dartmouth (N.S.)	7920	19.2%	1968	31.6%
St. John and Moncton (N.B.)	10,890	29.8%	2560	28.3%
St. Johns (Nfld.)	3380	19.5%	930	34.8%

Table 26

Distribution of Sponsored Plants by Growth Centres
and Elsewhere 1972 - 75 for Selected SIC Categories

<u>SIC Categories</u>	<u>Growth Centres</u>	<u>Elsewhere</u>
01	27	163
03, 04, 05, 06	1	15
08	3	87
09	4	22
10	5	10
11/12	7	12
13	20	18
14	8	12
15	6	22
16	4	4
17	18	12
18, 19, 20	11	19

Table 27

Classification fo Sampled Plants by Locational Orientation

	New Plant	Existing Plant	
	<u>Sample</u>	<u>Sample</u>	
Output Oriented	35	14	49 (48.0%)
Raw Material Oriented	25	12	37 (36.3%)
Footloose	$\frac{12}{72}$	$\frac{4}{30}$	$\frac{16}{102}$ (15.7%)

Table 28

Geographical Distribution of Sales By Locational Orientation
of Sampled Plants (1)

Location Orientation	<u>Percentage Sales Within Atlantic Canada</u>			<u>Exports</u>	
	0-25%	26-75%	76-100%	None	Some
Output Orientation	0 (0)	8 (8)	27 (36)	34 (43)	1
Input Orientation	10 (12)	6 (7)	7 (12)	12 (17)	11 (15)
Footloose	7 (10)	5 (5)	0 (0)	5 (7)	7 (8)

(1) The data provided is for the new site sample (and for the two samples combined).

Table 29

Geographical Distribution of Inputs by Locational Orientation
of Sampled Plants (1)

Locational Orientation	<u>Percentage Inputs Purchased With Atlantic Canada</u>			<u>Imports</u>	
	0-25%	26-75%	76-100%	None	Some
Output Orientation	17 (19)	4 (6)	6 (9)	19 (26)	8 (8)
Input Orientation	1 (1)	6 (7)	16 (24)	18 (26)	5 (5)
Footloose	5 (7)	2 (3)	1 (1)	1 (3)	7 (8)

(1) The data provided is for the new site sample (and for the two samples combined).

Table 30

The Distribution of Sampled Plants in Growth Centres
and Elsewhere by Locational Orientation (1)

	<u>Growth Centres</u>	<u>Elsewhere</u>
Market Oriented	16 (22)	19 (25)
Input Oriented	3 (4)	22 (35)
Footloose	4 (4)	8 (11)

(1) The data provided is for the new₂ site sample (and the samples combined). For the new site sample $X^2 = 7.637$ which is significant at the 5% level of significance. Cramer's V = .326.

Table 31

Geographical Distribution of Sales by Growth Centres
and Elsewhere of Sampled Plants⁽¹⁾

	Percentage Sales Within Atlantic Canada			Exports	
	0-25%	26-75%	76-100%	None	Some
Growth Centres	3(3)	6(6)	14(18)	20(25)	3(3)
Elsewhere	14(19)	13(13)	20(30)	31(42)	16(20)

(1) The data provided is for the new site sample (and for the two samples combined). For the new site sample $X^2 = 2.853$ (for sales within Atlantic Canada) and 3.361 (for exports) neither of which reach significance; in the latter case Cramer's V = .22

Table 32

Geographical Distribution of Inputs by Growth Centres
and Elsewhere of Sampled Plants⁽¹⁾

	Percentage Inputs Purchased Within Atlantic Canada			Imports	
	0-25%	26-75%	76-100%	None	Some
Growth Centres	12(12)	1(3)	7(9)	14(18)	6(6)
Elsewhere	11(15)	11(11)	16(26)	24(36)	14(15)

(1) The data provided is for the new site sample (and for the two samples combined). For the new site sample $X^2 = 6.954$ (for inputs within Atlantic Canada) which is significant (Cramer's V = .35) and $X^2 = .274$ (for exports) which is not significant.

Table 33

Employment Size Distribution of Sampled Plants
by Locational Orientation (1)

	<u>Employment Size Categories</u>		
	<u>0-14</u>	<u>15-99</u>	<u>100+</u>
Output Oriented	18 (24)	15 (15)	2 (3)
Input Oriented	8 (9)	14 (22)	3 (3)
Footloose	2 (3)	7 (7)	3 (4)

(1) The data provided is for the new site sample (and for the two samples combined). For the new site sample, and aggregating the two larger employment size categories to increase the size of cell frequencies, $X^2 = 5.363$ which is not significant ($\alpha = .05$).

Table 34

Sales Distribution of Sampled Plants by
Locational Orientation (1)

	<u>Sales (\$)</u>	
	<u>\$25-1m</u>	<u>1m+</u>
Output Oriented	19 (26)	14 (19)
Input Oriented	16 (23)	9 (16)
Footloose	6 (7)	6 (9)

(1) The data provided is for the new site sample (and for the two samples combined). For the new site sample, $X^2 = 0.672$ which is not significant at the 5% level of significance.

Table 35

Seasonal Fluctuations in Employment by Locational
Orientation (1)

	<u>Seasonal Fluctuations (2)</u>	
	<u>Yes</u>	<u>No</u>
Output Oriented	18 (24)	16 (21)
Input Oriented	14 (23)	9 (11)
Footloose	2 (3)	10 (12)

(1) The data provided is for the new site sample (and for the samples combined). For the new site sample $X^2 = 6.52481$ which is significant at the 5% level of significance. Cramer's $V = .3075$.

(2) In every case downturns occurred in winter.

