FORMULATING A REGIONAL ECONOMIC DEVELOPMENT STRATEGY:

THE KEY INDUSTRY APPROACH FOR MANITOBA

by

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ABSTRACT

This thesis focuses on the role of industrialization in the development process for a region within a nation state. Specifically, it uses the Province of Manitoba as an example. An attempt is made to formulate a logical and consistent approach to identify the industries which a regional authority might promote to achieve regional economic development.

The criteria for the selection of industries to be included in a development plan are: a) linkage effects; b) labour intensity; c) growth potential; and d) whether the industry is "footloose" or not.

The intention is to provide the regional authority with a basis upon which to make decisions. These decisions relate to the type of industry which will best assist in achieving regional development, thus contributing to the alleviation of regional economic disparity in Canada.

The discussion addresses itself to the nature and the reason for the existence of the problem of regional disparity; the relevant considerations of a development strategy at the regional level; the formulation of a procedure incorporating past efforts in the field; and an example using the Province of Manitoba.

The role of government and industrialization are examined in formulating the method for industry selection. The resultant procedure is policy oriented. The direct empirical results were developed using an input-output framework.

While noting the limitations of the approach, the decision maker is afforded the opportunity to study both the effects of industrialization and the role of value judgments on the attainment of the objective.

The demonstration of the model exhibited the glaring data constraint to effective regional analysis in Canada today. However, an application of priorities, designed to minimize the incentive paid to industry per unit of gain received, was demonstrated.

The thesis does accomplish its objective of identifying the nature of regional problems and forwards one possible solution.

PREFACE

Regional governments in Canada continually are proposing and introducing policies to promote regional economic development. These policies are based usually on efforts to encourage industrialization. Unfortunately, the success rate of such policies has not been terribly outstanding.

The following discussion forwards a methodology or a procedure for the conceptualization of a regional economic development strategy. Specifically, it focuses on the role of industrialization in the development process and attempts to formulate a logical and consistent approach to identify the industries which a regional authority would promote to achieve the objectives. It presupposes governmental involvement and addresses itself to proposing industries which regional governments might legitimately seek as they attempt to stimulate the development of a given region.

The methodology is unusual in that it is not unidimensional. There are four specific criteria for industry selection which are established, and, furthermore, the subjective role of the decision maker in the process is given full exposition. As such, the following cannot be considered a theory in the strict usage of the term.

The intention is to provide a regional authority with a basis upon which to make decisions. Specifically, these decisions relate to the type of industry which will best assist in achieving regional development, thus contributing to the alleviation of regional economic disparity in Canada. A methodology of the form postulated will prevent many of the errors in past policy from recurring, as industries often have been sought without rational reasoning as to their ability to generate the desired results.

The following broad subject areas are discussed. The nature and the reason for the existence of the problem is treated in Chapter One. Chapter Two addresses itself to the question of the relevant considerations of a development strategy at the regional level. A brief discussion of past approaches to the problem and their impact on the development of the specific procedure forwarded in Chapter Four is contained in Chapter Three. Chapter Four, then, is the formal presentation of the methodology. An illustrative example is outlined in Chapter Five, while Chapter Six treats the conclusions which follow from the discussions in the analysis.

Acknowledgements while numerous must not exclude specific mention of Professor Henry Rempel, who acted as the primary advisor, and Professor John Gray, whose comments were invaluable. Both provided much insight and considerable encouragement to the author in developing the topic. Professor James A. MacMillan gave generously of his time to be a member of the examining committee. Of course, none of this would have been possible without the efforts of the Faculty in the Department of Economics at the University of Manitoba.

No words can express my indebtedness to the patience of my wife Marsha.

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CHAPTER ONE

The Problem

The question of how to solve the problem of regional economic disparity in Canada has remained unanswered for a considerable length of time. The necessity of solving this problem is more pressing than ever for Canadians have expressed an unwillingness to accept this phenomenon as a permanent characteristic of their society. Indeed, they are alarmed at the persistent number of families, whole communities and regions that must contend with chronic poverty despite a continually increasing national prosperity. For many, the question remains. How can the regional differences in economic well-being be alleviated so as to provide a better quality of life for all Canadians? In seeking the solution, federal, provincial and even municipal governments have introduced a plethora of programs intended to utilize labour and other resources of economically depressed regions, for the purpose of expanding national output and enhancing the economic condition of individuals residing in all areas of Canada.

These programs have been varied both in format and effectiveness. They have included efforts in the areas of manpower; natural resource development; agriculture; infrastructure improvement; recreation; and industrialization. Historically, industrialization programs have received the major emphasis. Also, it has been in this area where the most sensitive political and economic decisions have had to be made.

The problem, in a broad sense, is to alleviate regional economic disparity; while the immediate goal of this study is to develop a consistent methodology for formulating more effective industrialization programs to assist in solving this problem. The overall objective remains, however, the promotion of regional economic development.

This is not to suggest that the other facets of public policy go unstudied, or that the complementarity of programs be ignored. It is worthwhile to remember that activities of government not related specifically to developmental programs also have developmental impacts. As such, there are many related areas for research in this field. Rather the subject of this research is recognition that, a) industrialization programs will remain within the domain of the decision maker in future efforts on the part of government to achieve regional development in Canada, and b) there is always a need to improve methods for obtaining the necessary information upon which to formulate such public policy.

Given the scope of the following discussion, two important concepts should be outlined. First, industrialization is to be interpreted in the broadest manner. It is intended to encompass the addition to any form of productive capacity in order to generate economic activity within a region. Second, there is merit in giving explicit recognition to the constraints to public policy solutions. These constraints are of the following nature.

The first constraint is especially relevant. It is a manifestation of the deep commitment in our governmental process to the tenet of grass-roots democracy. In practical terms, this often has tended to exclude solutions which might otherwise appear optimal because of the existence of a parochial approach to problem solving, and the relatively short time horizon for most programs necessitated by the due process of elections. The decision maker in this type of system is encouraged to seek immediate solutions, and hence places greater priority on short term objectives.

It is important, therefore, to maintain a broad perspective coupled with patience in solving the problem of regional economic disparity.

The second constraint has been self-imposed essentially. While we have been content, in the past, with benefit-cost analyses directed towards a single objective, a single industry or a single commodity, we have gradually come to realize that this approach can only yield limited answers and, therefore, limited tangible results. The nature of the problem is not uni-dimensional and so neither should be the analytical framework. Policy objectives of a more complex nature should be incorporated within any method of policy formulation.

Having recognized this though, it is conceded that the following analysis pays particular attention to industrialization. This constraint is not intended to imply a single, constrained policy approach. Rather for preciseness the focus has been limited, but the implication remains that a regional economic development policy is formulated only after having considered studies of the heretofore mentioned alternative aspects of a solution. It is assumed that industrialization capable of providing employment and additional income for the indigeneous population is an integral part of the whole. The redistributive impacts of a given policy within a region are left, by necessity, to the function of other policy instruments.

A third constraint concerns the economic powers of a particular region within a nation state. Instability resultant from a policy of national economic expansion can be controlled somewhat by a particular set of monetary and fiscal measures. This option is not open to an individual region attempting to do similarly within its own jurisdiction. It follows that a regional policy should take full account of the limited resources, both economic and legislative, required for the success of a given strategy.

Yet another constraint is the effect of scale economies associated with industrialization in close proximity to large urban centres. This phenomenon is operating in direct opposition to the attainment of the objective, for typically the concern for regional development concentrates on the hinterlands.

These constraints not only serve as a warning of the impediments to regional development, but also they indicate a need for a departure from past practices. Formerly the policies and programs for less affluent regions have been defined in terms of either encouraging out-migration or attracting heavy industry. This implies that a less developed region's economic problems arise out of local disequilibria in the factor market, and hence, all that is required is to shift either people or productive capacity so as to equate supply and demand for a particular factor in each region.

This particular approach fails to recognize the interregional differences inherent in the nature of the causes of the problem. For example, one region may be lagging because of a heavy reliance on old stagnating industries. The constraint to employment expansion in this case may be a lack of research and development activity, resulting in a failure to absorb a growing labour force. Another region may rely heavily on primary product production. The capital intensive technology customarily employed by these industries may be the obstacle to the required employment expansion. Possibly, the importation of capital and/or out-migration might be suggested as a policy solution in both cases. But, the former indicates a human-capital constraint, whereas in the latter case the lack of industrial diversification is indicated as the prohibitive factor to employment expansion. For these reasons, a properly conceived economic development policy should be cognizant of, on the one hand, the industrial structure of the region, and, on the other, the resource endowments required for economic expansion. If these two aspects are not incorporated into the development plan, then there may exist a divergence between the policy objectives and the feasibility of the policy.

In proceeding, full knowledge is taken of the role and the effect of central government policies on regional economic development. However, for the most part attention is focused on the possibilities for the regional authorities in the development process. The reasons for this position are obvious. Although central government policies are important in determining the final distribution of industry and employment between regions, it is the regional government which is faced with the practical implications and realities of these policies. Furthermore, the regional governments might well institute measures within their own jurisdictions which can contribute more effectively to the national objective as it applies to their own locale. For not only do the regional governments provide basic services for the areas affected by the national policy, but also provisions should be made for the social amenities for the population employed in the new activities. This more immediate and direct responsibility of the regional governments is a justification in itself for the point of view adhered to in this study. Consideration of the central government's activities will only be introduced when it is conceded that they will augment significantly the possible alternatives of the regional government.

Finally, regional governments do have a mandate to attempt to produce employment generating programs within their jurisdictions and to elevate the per-capita income of the residents in their regions. The less developed regions' successful achievements in these regards will reduce, in an indirect manner, the disparities existent in the distribution of such economic phenomena. In establishing the framework for the subsequent analysis, the naive notion of regional equality is not posited. Although such a position can be viewed as the ultimate, it is not a reasonable consideration within Canada within the foreseeable future. Rather the notion is that much can be done to improve the economic well-being of individuals currently residing in less affluent regions in Canada. One can attempt to achieve a more equitable balance between regions and, at the very least, endeavour to reduce the apparent trend to increases in inequality. This is a very important task both as it reflects upon a region's inhabitants and the future of the nation as a whole.

The foregoing provided much of the impetus for undertaking this research. While the following is neither revolutionary nor foolproof, it is a definite attempt to develop a rationale for overcoming what has been described above, and to provide an input to policy formulation designed expressly to alleviate regional economic disparity in Canada.

CHAPTER TWO

The Considerations in Formulating A Development Strategy

The need for a development strategy, not to mention a regional development strategy, is not often acknowledged in a relatively prosperous nation. But a nation state is not a homogeneous entity. Regional differences do exist with respect to employment opportunities and per-capita income. Although it may be based on an egalitarian position, there is an attempt being made to eliminate these regional differences in Canada, without great success.

Given that regional governments, in attempting to alleviate regional economic disparity in Canada, participate in programs to promote employment expansion in their respective regions, a methodology should be devised to assist in this decision making process. In developing the methodology, careful attention will be paid to the objective and the major facets of a regional development strategy.

THE OBJECTIVE

Regional economic development[1] is the process of establishing and/or

[1]The author apologizes to the multi-dimensional economic development theoreticians for the pragmatic definition. Economic development is the historical evolution of a society's economy, whereby all individuals retain a betterment of their socio-economic condition. Since, by definition, it is an abstract concept, the author wishes to "explain" its components at a somewhat lower level of abstraction; such as the process of industrialization. By the very nature of things our theories must be partial. They cannot encompass all of the dynamic human and social variables. But economic development is the consequence of the totality of interrelationships both social and economic. By necessity only the economic phenomena are stressed in this study but the expansion into other dimensions should not detract from the validity of the analysis.

promoting economic activities capable of expanding employment thereby providing the population in a given region with the means of support, as the size of the population dictates. The development strategy has as its major tenet, therefore, the expansion of productive capacity with the intention of increasing employment assuming per-capita income will increase as a result. This is not intended to suggest that this be achieved to the detriment of other considerations in the social or cultural spheres, rather it is postulated that this approach will assist the given region in obtaining the necessary capabilities for the provision of services, etc., customarily associated with more affluent regions.[2] Since industries have differing abilities to generate economic activity within a region, the 'key' to an economic development policy for a region is the degree of industrialization and the type of industrial structure.

The realization of regional economic development will eliminate the necessity for individuals and families to move in order to better their economic condition and will avoid the sacrifice of social and other amenities for the prerogative of living in a given region. Indirectly, regional economic development will reduce, also, national agglomeration into a few large, concentrated metropolitan areas complete with the external diseconomies this action creates.

THE CONCEPT OF A REGION

It is often suggested, although not always required, that a clear indication be given of the scope of a study. It is neither the intention nor the purpose here to provide an exhaustive, definitive discussion on the concept of a region. A region may be defined on economic, social,

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[2]This position is discussed at length and supported by Chenery [13].

political or geographical criteria.[3] It is sufficient to note that there is no universally accepted definition. The decision here is to use, initially, the political adaptation, and hence, a province is considered to be a region. The reason for the choice is to provide a starting point in order to initiate the analysis. By using a province, the capability of introducing policy alternatives through the political system is enhanced.[4]

THE ROLE OF GOVERNMENT AND A REGIONAL DEVELOPMENT STRATEGY

The fact of government involvement is taken as given. It is then necessary to briefly examine the role government might play. This necessity is enhanced further by choosing regions which coincide with political jurisdictions.

Less affluent regions are characterized by obsolete infrastructures, unfavourable age and income distributions, and little opportunity for advancement. Altering these conditions are a direct concern.

The central government traditionally has sought only to increase the income and/or population of depressed areas. In the past, this has been undertaken through sporadic public investment, incentive programs and more recently through attempts to decentralize its activities. No doubt decentralization is essential but at best it will only curtail the divergence between the affluent and depressed areas. It will not result in economic

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[3]For a complete discussion see Losch [47]; Meyer [51]; or Richardson [66].

[4]This definition also avoids the debate about jurisdiction which would serve only to complicate the issue unnecessarily at this point. Since public policy formulation is paramount to the purpose for the research, political adaptation becomes a concern. Hence the use of a political delineation of a region.

parity between the two. This can best be achieved by the redistributive powers of the central government from the more affluent to the less advantaged regions.

The regional government should implement the regional economic development plan; for it is the regional government which is charged with the responsibility for the provision of many programs necessary to support a successful, rational economic development strategy. But an economic plan, in order to be successful, should operate in conjunction with a social, physical and financial plan ensuring the following: a) the existence of technical and scientific facilities and faculties; b) government funded research;[5] c) training and retraining programs to provide an adequate pool of skilled and semi-skilled manpower; d) sufficient supporting industries and infrastructure; e) easily available capital; f) transportation links; and g) proper urban planning and environmental control.

It is also necessary to distinguish between government policies which seek to assist areas regardless of their potential, and ones that are intended to stimulate the actual and potential development of a region in the economy. The former focus on the redistributive aspects for they lend assistance to regions simply because they are less affluent. The latter will be termed economic redevelopment policies for they centre on the latent potential of a region to utilize its resource endowments. It is in

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[5]These funds should be forthcoming from both central and regional governments, thus initiating directed research into the economic problems of a given region. The research should include careful study of the required increases in income and employment associated with a forecasted change in the size of the population, including specific methods of achieving the targets established in this manner. Furthermore, the undertaking of this research is predicated on the willingness to make the necessary resources available for the successful implementation of the regional development policy derived.

the latter sense that this research is designed to make a contribution to government activity in regional economic development. For it is only when government activities assist in assimilating and co-ordinating these many considerations that the involvement of government not only becomes justifiable but also it facilitates greatly the formulation of a regional development strategy and enhances its chance for success.

CHARACTERISTIC INDUSTRIES

It has been assumed, within the context of this study, that industrialization of one form or another is the key aspect of a regional development strategy. This is based primarily on the following premise. If a regional government intends to expand employment and ensure a relative degree of employment stability simultaneously, the most promising sector is one in which the income elasticity of demand for the output is relatively high. It is, therefore, of paramount importance to be able to identify which industries are to be included in the development strategy. Specifically, a selected industry should conform to the following criteria: a) an ability to generate further economic activity within the region as a result of locating in a given region; b) a high labour content in production for employment expansion; c) a potential for future growth; and d) an ability to locate within a region without the requirement for costly, publicly subsidized incentives.

The criteria are self-explanatory but there is some reason to justify the inclusion of the second, namely the specification of labour-intensity. This criterion is in accordance with the desire to employ or re-employ as many people as possible.

Increasing employment requires that two facets of the process be recognized. First, without resorting to employment multipliers requiring sophisticated and often questionable estimation procedures,[6] "the more labour-intensive the selected industry, the greater the rise of total employment in the area."[7] Second, as a result of the first industry locating in an area, additional industrialization is stimulated thereby generating further employment.

It is the existence of the second facet which leads many to argue that an initial capital-intensive industry may have greater total employment effects once all indirect employment generation is taken into account. This does not discount, however, similar results being achieved by a growing, labour-intensive industry with strong linkages. Furthermore, while considerable debate can take place over the longer run ramifications, little doubt remains with respect to the immediate impact. For this reason, labour-intensity is preferred in the following approach to industrialization for regional development.

By assuming relative factor prices, factor proportions and technology are constant over the period of analysis, the labour intensity of an industry can be represented by the proportion of value added paid to employees in wages and salaries. Then the total payment to a factor as a proportion of valued added would remain fairly equal between industries over time.

Adhering to the assumption of fixed factor proportions, i.e., an elasticity of factor substitution equal to zero, the ratio of value added to the wage bill is an adequate measure of the labour intensity of an

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[6]See Westcott [82]; and Weiss and Gooding [81].

[7]Klaassen [36], p. 31.

industry. It will not promote unwittingly the creation of low wage employment. This can be demonstrated further by the process of bidding up wages as the demand for labour increases resultant from the operation of labour-intensive industry.

In addition it could be argued that since the value added is the payment to factors, why insist on discriminating in favour of labour. It is just as logical to try to increase the payments to capital. But, since there are no "a priori" reasons for assuming that the capital is owned by the indigenous population of a depressed area, but certainly it is more reasonable to assume the labour is, a decision of a policy nature is made to favour the labour input in the production process. This is, in part, strengthened by the objective of the development strategy; namely employment expansion. Such reasoning is consistent under the previous assumption of fixed factor proportions.

Of lesser importance in the short-run, but nonetheless crucial to the development process, is an industry's ability to generate future employment in the same industry, i.e., through expansion of the industry established. Therefore, a growth industry is defined as one in which there was a high percentage increase in employment in the half-decade, 1962-67. The change in employment is used as the measure of growth for essentially two reasons. First, since there is no substitution of factors, the output and value added per worker is effectively proportional to the number of people employed in the industry. Second, the demand for labour and not the value of total demand for the industry is the key aspect for the analysis. Therefore, describing a growing industry in terms of employment focuses on the major objective of selecting industries for the development of a region.

A CHARACTERISTIC INDUSTRY AND THE NOTION OF A FOOTLOOSE INDUSTRY

The theory of location[8], discussed briefly in the next chapter, is perhaps less important in the approach adopted in this paper, but it does assist in clarifying one final consideration which should not be overlooked in a regional development strategy. Previously, proximity to markets or raw materials represented in differing transportation costs was thought to be of major consequence in locating an industry in a given area. This theory has been extended to include the proximity of technically complementary industries.

As a result of the lesser role played by transportation costs and the advent of rapid communications systems, more and more industries have come to be known as "footloose" industries, or industries which can locate virtually anywhere. Such industries may be defined as ones whose long-run economics are not affected by geographical location, i.e., industries for which transportation and communications costs are insignificant in locational decisions. The ever increasing presence of such industries makes it mandatory for regional governments to evaluate more carefully the basis for seeking particular industries to locate in their locale.

There are no "a priori" reasons for a "footloose" industry to locate in a less affluent region. Quite the contrary. Such industries typically locate in developed areas to take advantage of scale and external economies. This often precipitates the need for regional governments to bid by way of a system of incentives for these industries to locate in less affluent areas. This is costly. It may facilitate, in addition, detrimental income transfers from the region. In terms of static microeconomic analysis, policy

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[8] See Hoover, [28].

decisions to attract such industry will introduce further distortions into the regional economy with the accompanying "dead-weight loss" of welfare.

Realizing these possibilities, regional governments should avoid seeking "footloose" industry for the purpose of promoting regional economic development. Therefore, it becomes necessary to be able to identify "footloose" industries. This is accomplished by using the concept of a "relevant region."[9] This concept closely parallels the ranking of commodities and regions by Leontief, and was utilized subsequently by Isard.[10] The relevant region for a particular industry determines the area within which it is "footloose"; or whether within a given area, an industry depends very heavily on the demand for its output and the supply of all its inputs falling within the same region. If the industry requires that this be the case for the area under consideration, this area is considered the relevant region for the industry and the industry is not "footloose" with respect to the region.

Regional governments should seek industries which have a potential for generating increasing employment and further industrialization, where these considerations are not nullified by introducing further distortions into the economy. Much can be done in the areas of non-economic, socio-cultural programs which contribute to the climatic considerations on the part of such industry. These programs, ancillary to an industrialization program, may benefit the indigenous population more directly, while ultimately improving the possibilities of such industries locating in the region at some future time.

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[9] Klaassen, Op. Cit., p. 78.

[10] See Isard [31].