

REGIONAL DEVELOPMENT PLANNING:
TOWARDS A CANADIAN INDUSTRIAL STRATEGY

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by

James Neil McKay

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To My Father

ABSTRACT

The objective of this thesis is to suggest new avenues for linking theory and policy in the field of regional economic development. Emphasis is placed on understanding the behaviour and organization of large corporations in relation to the Canadian industrial structure.

The first chapter outlines both industrial location and regional growth theories and discusses some of the linking elements between the two. The processes involved in regional industrial growth are then described in light of these theories. Chapter Two examines in greater detail regional planning instruments including the underlying economic assumptions which support them. This leads to a discussion of those forces which are presently shaping regional industrial growth and underscores the need for greater recognition and detailed information on the behaviour of large corporations or the meso-economic sector. Chapter Three attempts to isolate the importance of this sector both in terms of its regional economic implications and its influence within and over the Canadian industrial structure. This analysis leads to an enumeration of the costs and benefits associated with the inclusion of large corporations as a means to stimulating regional industrial growth. The fourth chapter disaggregates corporate functions, discusses their inherent spatial bias and describes in some depth the difference in performance levels of these functions between Canada and other countries and between regions within Canada. More specifically, the innovative performance of large corporations is analysed from the posture of the Canadian industrial structure and in terms of developing a national industrial strategy. Finally, the need for innovation-orientated regional planning is stressed, one which accounts for the retarding nature of the present industrial structure towards such planning. Chapter Five presents a number of

policy alternatives which emphasize the decentralized location of higher corporate functions, especially that of innovative and R & D facilities. The chapter concludes with an example of this innovation approach and how it might be implemented.

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INTRODUCTION

Within most Western industrialized nations today spatial income and employment differentials remain a major cause for concern. The methods presently being used to combat regional disparity however are based for the most part on economic theory and industrial analysis which have not provided an adequate understanding of regional growth processes. This set of underlying theories has presented an unrealistic economic framework on which to base decisions concerning industrial development and has served to limit both the type and number of methods used. The acceptance of regional disparity on a planning and policy level therefore has not brought with it corresponding changes in the perceived processes of regional growth. A basic understanding of economic theory and industrial location analysis then, is essential in determining those forces which are shaping regional industrial policy and planning.

The first two chapters in this thesis describe in some detail regional economic theory, industrial analysis and the instruments of regional planning now in place. Based on this discussion some effort is made towards describing those elements in the regional economy which today account for a disproportionate share of industrial activity, namely the large corporation. In this sense, the lack of understanding or recognition of changes in the industrial structure on the part of planners and policy-makers presents a major problem for regional industrial development. There are strong indicators that the dominant elements in the industrial economy are the large corporation not the single firm, simple production plants. Insight into corporate organization and behaviour therefore is important if functional industrial development planning is to take place on any level. The nature of the industrial

structure, corporate organization and behaviour therefore, are analysed in the third chapter.

A prerequisite for dealing with many of the problems caused because of the present approach to industrial growth is a renewed emphasis on developing a national industrial strategy. This is the subject of chapter four which leads to a discussion on possible new approaches to regional industrial development. The alternatives in this case are based on innovation-orientated regional planning, with the fifth and final chapter describing how they might be implemented.

CHAPTER I

REGIONAL GROWTH AND INDUSTRIAL LOCATION THEORY

A. Introduction

This chapter begins with a discussion of industrial location and regional economic theory, and considers their implications both in terms of regional growth and their usefulness as an aid in the formulation of regional industrial policy. Utilizing aspects of these theories, an argument is presented describing the inherent nature of unbalanced growth in all market ordered, open economies and this is followed by a discussion of those factors and trends which have tended to maintain such inequality. Finally, the 'meso economic' sector is described and an attempt is made to outline its importance in shaping the aggregate pattern of regional industrial growth.

B. Purpose and Objective of the Study

Regional growth theories and industrial location theories are often looked upon as two sides of the same coin. They both concern development processes, yet by convention must not be considered synonymous in terms of content or applicability. This has been a source of some confusion for policy-makers delegated the task of reducing regional disparity. Theories of regional growth are, for the most part, based on macro-scale assumptions derived from the behaviour of one or a number of economic activities within a given nation.* Industrial location theory, considered as a paradigm

* Theories of regional growth are attempts to explain the process involved in the evolution of regions or a region from a pre-industrial to industrial and in some cases post-industrial society.

encompassing least-cost and locational interdependence schools, has until recently been dominated by micro-economic analysis and the behaviour of individual firms.* Pred (1968) has stated that such approaches indicate "a labyrinth of intricacies underlying industrial distribution".¹ Certainly any attempt by regional growth theorists to explain the development process by emphasizing a limited number of industrial location factors would be misleading. Similarly, pointing to factor flows, endowment of natural resources or the existence of external demand would not provide a very clear picture of industrial growth and structure within any one particular region. This dichotomy has failed to provide an adequate understanding of the processes shaping regional growth over the past 20 to 30 years (the period of active planning intervention) and has in some cases actually hindered regional planning efforts. The intent of this work will be initially detail why such a situation has arisen and then to suggest a more practicable approach to dealing with the planning of regional industrial growth.

C. Growth Theories Categorized

If a trend can be detected in industrial location and regional analysis it is towards a meshing or a synthesis of the two in providing a deeper understanding of regional growth. This is of recent origin however and it would serve a better purpose here to first review much of the theory and many of the factors involved in the controversy over the process of regional development.**

* Leading contributors to these industrial location theories include Weber (1909), Hoover (1948), Isard (1959), Pred (1967) and Greenhut (1956).

** Regional development is a broad term encompassing social, economic and often political considerations.

In terms of separating the many and varied theories into categories which can be analyzed, a starting point, is the convergent/divergent concept of regional economics. This illustrates a basic difference in regional growth theories, one which lies in the acceptance of the pre-eminence of either equilibrium or disequilibrium forces at work within the spatial economy. It is a difference which will be shown later to be extremely important in any discussion on regional policy.

An equilibrium or convergent approach is one based on self-adjusting market mechanisms in the economy. This has a spatial manifestation in that given enough time, regions will converge in terms of the factor returns to income and employment.* Such self-balance theories are predicated upon either Keynesian or neo-classical economic assumptions which are required to validate their predicted outcome of regional growth (Holland, 1976). On the disequilibrium or divergent side, market forces are seen as promoting or prolonging inter-regional imbalance. Without government intervention the capitalist system results in economic benefits to certain regions at the expense of others.

Stilwell (1972) has further divided regional growth theories to include three categories. The first are those theories which account for growth through endogenous demand, resource extration or increased exports. These are evolutionary-type theories which deal with regional development in terms of changes or adaptation over time. Included in this category are sector, staple and export-base theories. The second grouping are those theories describing regional growth in terms of investment and factor flows. These are economic theories, and as mentioned

* There are other indices used in discussing regional disparity, including investment rates, industrial structure, employment structure etc., these however are the most commonly cited.

above, are based on neo-classical or Keynesian type assumptions. The third category deals with regional growth as a cumulative process and includes growth pole, core/periphery and cumulative causation models. These last two categories are roughly comparable with convergent and divergent classifications respectively. Not only will each of these be described briefly in the following sections of this chapter, but their implications in terms of inter-regional economies will also be discussed.*

1. Evolutionary Theories of Regional Growth

Stages or sector theory as first proposed by Fisher (1930) and later refined by Clark (1957) is based on structural changes of the labour force over time within a given area. Comparative cost and changes in income elasticity of demand are seen as the mechanisms through which increasing specialization occurs (Hewings, 1977). Initially, a region exists as a self-sufficient agriculturally based economy with little or no inter-regional trade. Comparative advantage in agriculture or some other endogenous resource would then stimulate inter-regional trade and increase incomes. Product demand would change with increased disposable income which would in turn spur the specialization of industry. In the final stages of development it is envisioned that the service sector would constitute the majority of employed workers in the labour force.

Opposed to the stages theory of regional development are the proponents of staples and export-base theories. These are defined as regional growth theories based on resource exploitation and export,

* The importance of understanding inter-regional growth stems from the need of developing regional industrial strategies within the national framework.

where the mechanism of growth stems from external demand.² Staples theory, originally developed by Harold Innis (1935) to account for changes in regional development within Canada, preceded Douglas North's (1955) work on export-base which was a refining or developing of the arguments first proposed by Innis.* Both approaches hold that a marketable resource is the key to economic prosperity in a given region, but North envisions the development of new export products and specialization as providing an increasingly diverse manufacturing base. External demand for such resources is directly related to changes in the economic well-being of the region. That non-basic activities, namely activity not for export, are stimulated by and cannot exist without export industries is characteristic of both.

There arises a number of problems however in applying export-base analysis. Determining which industries are exporters can be difficult, many of the commodities being produced for both a regional and export market. Under such conditions, export earnings can be seen as inversely related to the size of the region in question. Export-base theory is concerned only with demand factors and not with the supply of goods and services. Finally, as in staples theory, there is little allowance for autonomous investment within a region.

In looking at sector and export-base models it is readily apparent that they are opposite in their approaches and that each neglects certain characteristics of the other. Sector theory does not include external demand for products, relying totally on endogenous factors in accounting for regional growth, while export-base does not consider supply of resources nor internal demand for goods and services. Important to the

* North envisioned the development of a diversified regional economy while Innis's work remained resource based.

discussion here is that neither sector theory nor export-base theory can be interpreted as convergent or divergent in its approach to regional development. Gilmour (1975) in describing the export-base approach claims that "it applies specifically to the atypical and never to be repeated case of the 'new country'".³ The design of such evolutionary theories provide for an adequate description of regional growth for very few areas and can certainly not present the detailed insight required to determine the causes of decline in depressed regions.

It is concluded then that the usefulness of established evolutionary-type approaches in determining inter-regional growth patterns is extremely limited. These theories never manage to overcome the handicaps of oversimplifying the complex nature of development and the lack of analysis of the functional relationships between regions (Richardson, 1969).

2. Neo-classical Economic Theories

A second category in terms of regional growth theories are those stemming from neo-classical economics. This approach has proven popular with regional economists and has, in addition, influenced much of the founding work on industrial location.

On a regional level, the premise of factor mobility under a number of economic assumptions, maintains that labour and capital respond to changes in factor returns (Richardson, 1975).^{*} Capital accumulation, labour supply and technical progress, although this is usually overlooked in theory, determine the rate at which regions grow or decline. The prospective outcome of such growth is an established equilibrium between regions based on a balancing out of the 'flow' of those determinants, (see Figure 1.1).

* These assumptions include zero transport costs, full employment, identical production functions, one product economy, a fixed supply of labour and perfect competition.

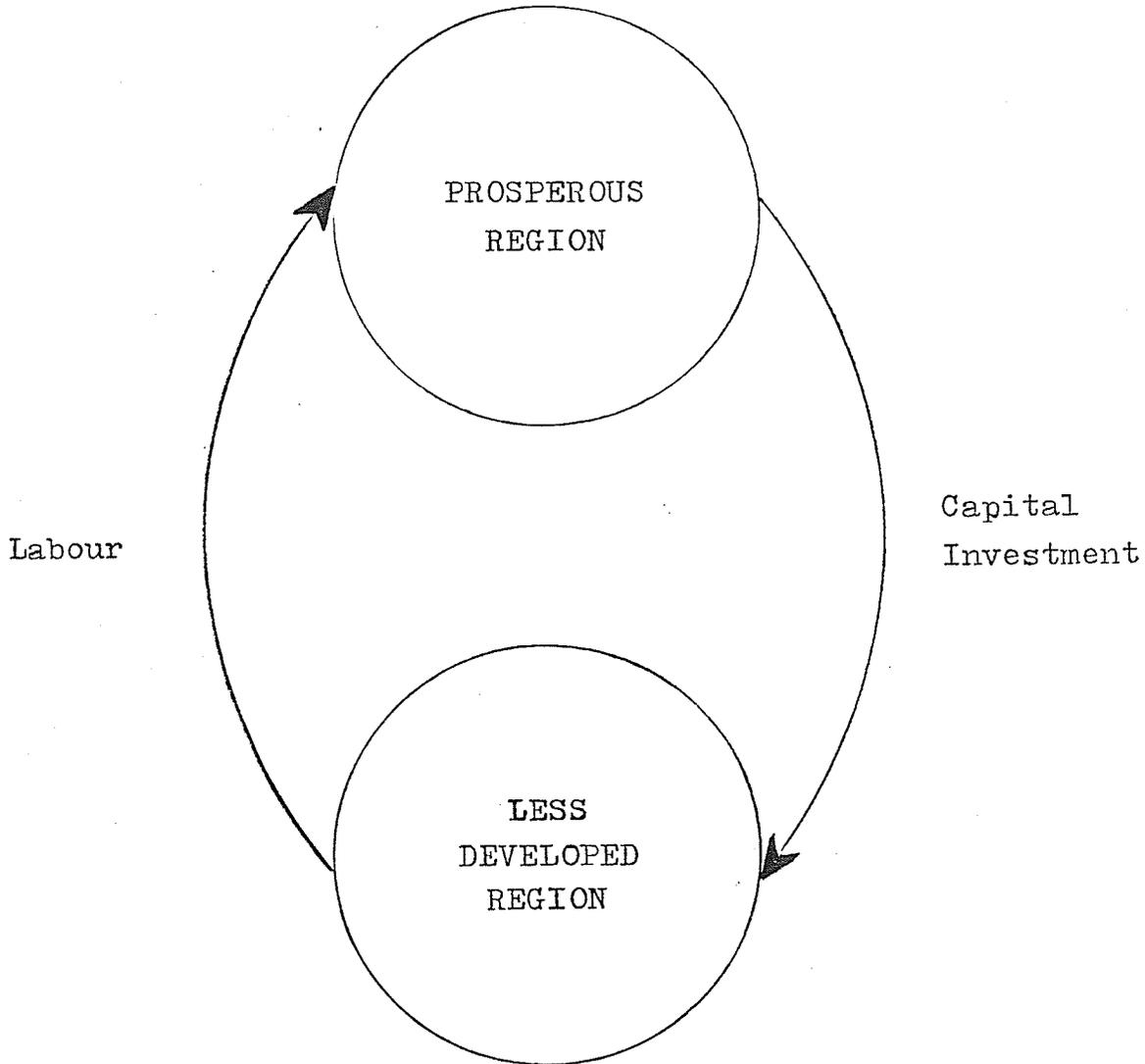


Figure 1.1 Neoclassical case of factor flows

Source: adapted from Stuart Holland's: Capital, labour and the regions: Aspects of economic, social and political inequality in regional theory and policy.

The need for establishing spatial models and theories of growth under such assumptions is greatly reduced or at best redundant, for the equilibrium growth rates are determined by market mechanisms alone. In this sense neo-classical economics has been attributed with actually hindering both regional growth theory and mainstream capitalist economics (Holland, 1976). This is predicated on the fact that theories based on neo-classical assumptions could not in reality account for growth patterns experienced within and between regions.

If indeed the evidence for convergence in terms of investment, income and employment was readily apparent, neo-classical based theory could act as an effective guide to both planners and policy makers advocating inter-regional equity. Such evidence however is difficult if not impossible to obtain. There is little indication that a convergence trend exists or even that equilibrating forces will lessen regional disparity.*

The major deficiencies of the neo-classical approach, according to Lee (1977), "derive from its idealized conceptualization of the economy as a series of mechanistic encounters between flows of money and goods and factors --- conflict is replaced by consensus and the markets ensure an automatic, though interruptible, tendency towards equilibrium."⁴ In effect, it directs attention away from the inherent capitalist nature of the continuous process of accumulation. As intimated, these precepts also helped formulate industrial location theory. One of the first theorists to utilize a neo-classical economic approach in developing a theory of industrial location was Alfred Weber (1929). This founding

* Work done by Townroe (1979) demonstrates that few conclusions can be drawn from time series data on regional per capita income or employment data to indicate convergence in the U.S. or U.K.

work was steeped in economic assumptions including economic rationality, complete information, constant demand and no competition. Unlike many of his fellow theorists, Weber recognized that increased reliance on economic assumptions, abstracted from reality, had decreased applicability in terms of policy. He was careful in his analysis to differentiate between regional and locational factors influencing industrial location. Those factors controlling labour and transport costs he claimed to be regional in nature while elements of agglomeration were conceived as locational and geographically independent from the first two factors. This was an integrated approach to industrial locational analysis, including both a micro and macro dimension (Holland, 1976).

Many of the theorists who followed Weber's initial analysis chose to recognize only his work based on neo-classical type assumptions, work that Weber himself admitted as being limited in application. August Losch's hexagonal market principle, his approach to the hierarchical arrangement of centres, was a case in point in terms of developing a general equilibrium model of location. Although he criticized much of Weber's work for failing to account for several aspects in industrial location, mainly demand changes, his own *ceteris paribus* approach proved far more devoid of reality (Holland, 1976). Losch (1954) himself stated that "the real duty of the economist is not to explain our sorry reality, but to improve it. The question of the best location is far more dignified than the determination of the actual one."⁵ In his attempts to actualize this Losch had to include in his theory several crude assumptions, including: a uniform region plain, uniform distribution of raw materials, uniform transportation surface, uniform distribution of population, tastes, preferences, technical knowledge and production opportunities.

Holland (1976) has been most critical of such approaches and stated that Losch has produced little more than "a cul-de-sac in which theory becomes largely an end in itself."⁶ The limits of such theory were recognized earlier in Meyer's 1963 survey of regional economic analysis. In it he describes Losch's work as being "highly idealised and stylized but has few immediate or obvious empirical possibilities and has thus far been devoid of any important empirical implementation."⁷ This has been the failing of much of the work derived from such an approach, where the techniques developed support the theory but do not test it against reality.

Much of the work done in regional science, especially that done by one of its major contributors, Walter Isard, falls within the framework of neo-classical type assumptions. The object of Isard's analysis according to Meyer (1963) was to correct "what he considered an intrinsic failing in traditional international trade theory, its failure to pay attention to costs of overcoming spatial separation."⁸ In doing this, Isard introduced into spatial analysis the substitution principle (a technique used in establishing minimum cost points for industrial location), input-output analysis and linear programming. The rationale for such techniques are again so grounded in economic assumptions that their application in terms of regional problems is limited. Holland's (1976) criticism of Isard reflects this in his statement "faced with the choice of modifying his theory to account for reality, Isard modifies reality, introducing extensive uniformity and regularity assumptions of a kind which are not characteristic of actual regions."⁹

The attraction to and the real danger of utilizing neo-classical economic based techniques and models to assist in policy formulation lies in the common assumption of economic rationality. That firms, investment

decision-makers and labour act and react in an economically rational fashion is a generally accepted mode of behaviour in such theories and models. In treating such organizations, individuals and households as socially and politically inert entities however, the danger of accepting the homeostatic nature of regional growth is enhanced and possibly directs policy in the 'wrong' direction. On the micro level of industrial locational analysis this possibility seems to have been realized. Smith (1971) recognizes that "many of the economists who have been drawn into locational analysis have been preoccupied with the problem of integrating space into general economic theory, with its emphasis on profit maximization and on the conditions which constitute a state of equilibrium."¹⁰

3. Imbalance Theories

If one accepts the criticisms of the evolutionary theories that of being grossly over-simplified and of neo-classical economic based theories as being too far removed from reality to act as an effective guide in aiding policy makers and planners, one is left with Stilwell's third grouping of theories, those dealing with unequal or divergent regional growth. The premise of these theories being that market forces tend to increase rather than diminish inequalities between regions.

Gunnar Myrdal (1957) has been one of the main proponents and pioneers of such an approach. His theoretical work has led him to a circular and cumulative causation model of regional development; one which claims that economic activities cluster in certain regions at a cost to other areas. He argues that growth is initially unbalanced, favouring certain regions due to a competitive advantage or access to natural resources and that growth will be self-sustaining due to increasing internal and external economies (Richardson, 1969). Once established, these agglomerative regions exert such a pull on economic activity that any economic advan-

tage in underdeveloped regions, for example cheap labour, will not be realized. The greatest influence on a lagging region's economy will be the effect that more prosperous areas have over it. These mechanisms of growth and retardation Myrdal has termed spread and backwash effects. Spread effects are of a positive nature with increased agricultural output and increased demand for materials being examples.* Such 'pluses' or regional benefits however will be more than countered by backwash effects which drain the disadvantaged regions of both labour and capital (see Figure 1.2).

This is diametrically opposed to self-adjusting equilibrium models proposed under neo-classical theory. Spread and backwash effects imply disequilibrium and Myrdal himself has stated that the use of equilibrium approaches are based on "very abstract, almost crude and usually unrealistic theoretical assumptions."¹¹

Francois Perroux (1955) was another advocate of regional imbalance theory. Like Myrdal, he saw the concentration of growth, in certain areas, as being more characteristic of actual regional development within the market economy, but the important difference lay in his definition of the "growth pole". The fact that growth occurred in different times led him to the concept of the *pole de croissance*. His argument revolved around the industrial sector and he visualized 'key' industries as primary elements around which other economic activity would flourish. These key industries had a number of characteristics including a high degree of concentration, high income elasticity of demand, advanced technology and strong local multiplier effects (Richardson, 1975). The geographic

* It should be noted that spread effects in this case do not mean a 'moving out' of the benefits accrued in prosperous areas.

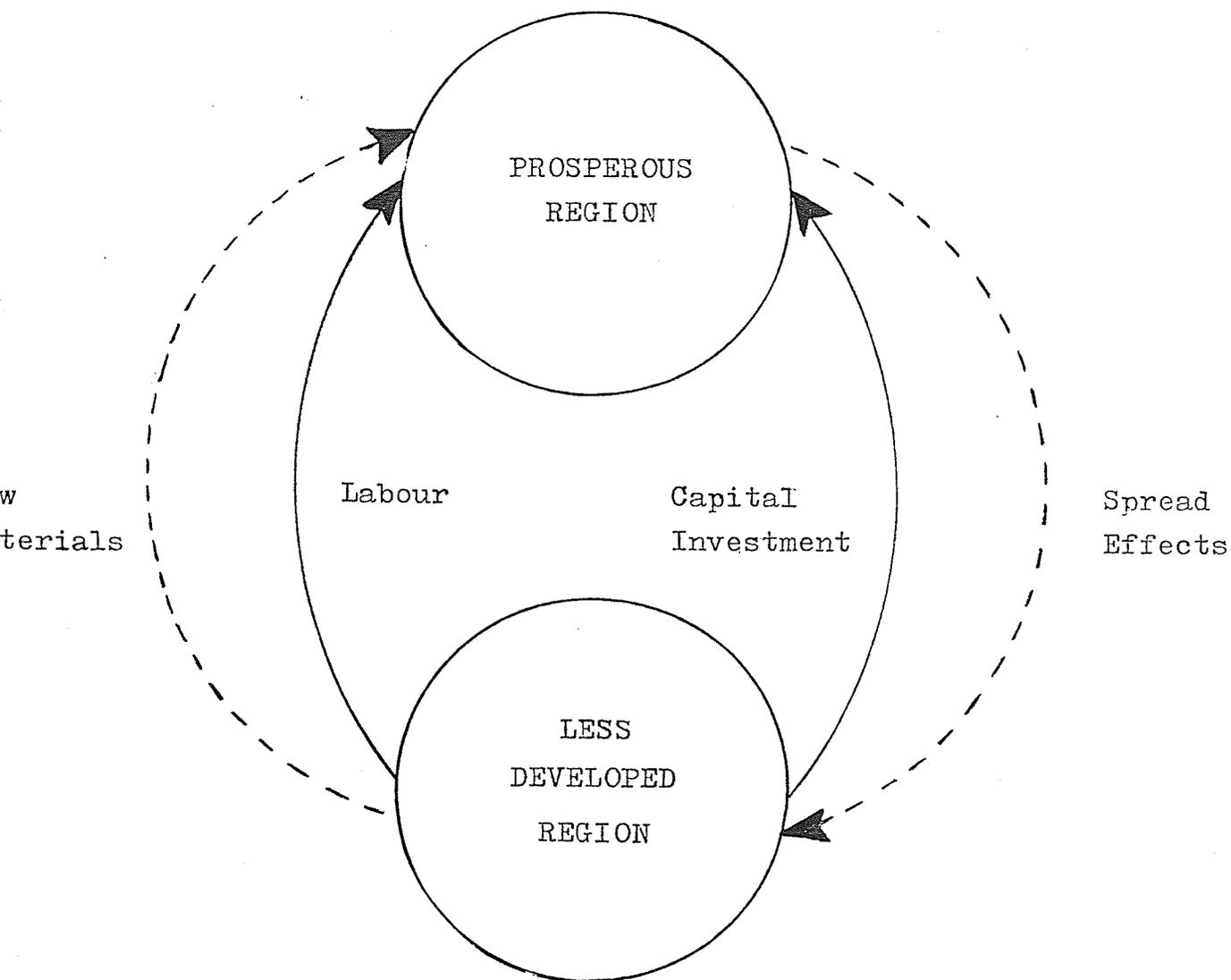


Figure 1.2 The Myrdal case of factor flows

Source: Adapted from Stuart Holland's Capital, labour and the regions: Aspects of economic, social and political inequality in regional theory and policy.

anology to the growth pole is the dynamic city, where internal and external economies are realized. Diseconomies incurred, from locating in a small number of large centres, such as land and labour costs would be more than offset by the benefits of locating in such areas.

The widespread use of growth pole concepts in policy formulation testifies to its popularity or applicability in tackling regional problems. This rather unchallenged acceptance of growth pole philosophy however has led some to criticize the use of such policy devices as panaceas. Paelinck (1965) points out that such an approach must be viewed as "a conditional theory of regional growth, valuable chiefly to the extent that it clearly indicates conditions under which accelerated regional development can occur."^{12*}

Many of the concepts developed by Myrdal and Perroux have been extended in the works of a number of authors to further the understanding of regional growth. Notable among these is Alfred Hirschman's (1958) 'Strategy of Economic Development', where he develops the regional dichotomy discussed above in terms of polarization and trickling down effects. These are roughly analogous to Myrdal's backwash and spread effects respectively. Hirschman's theory emphasizes more of the positive aspects, or the trickling down effects, than Myrdal's analysis recognizes. He points to a number of possible outcomes for regional development based on polarized growth.

John Friedmann (1966) is another theorist whose extensive writings on 'core/periphery' models of regional development, present, likely the most comprehensive approach to regional growth and development yet published. As many of the other authors describing unbalanced growth,

* There are numerous other criticisms of growth pole based regional policy. These will be examined in greater detail in following chapters.

his work emphasizes the cumulative and self-reinforcing advantages of a given location (Richardson, 1973). The process of industrialization and urbanization according to Friedmann (1966) is initially geographically unbalanced, resulting in dualistic economies and leaving some areas locationally obsolete.

The core/periphery model is not restricted to describing regional development; it could be applied to a city and its surrounding hinterland or on a global scale of developed and underdeveloped nations. Friedmann has been successful in pointing out the social and political make-up of nations and regions, their consequences for regional development and their importance in policy making. His theory then, involves more than economic and geographic variables and was derived through an inductive process. His approach thus is even more applicable to real world problems than the Myrdal-Hirschman tradition.

There is one school of thought which, in light of the above discussion, should be mentioned here. It is one which deals with regional growth within the framework of industrial location theory. It is an approach which, according to its contributors, provides "a relatively comprehensive and consistent context for understanding and evaluating sub-national economic and physical development"¹³ (Perloff, Dunn, Lampard and Muth, 1960). The most important implication of this work is that the changes in the patterns of regional growth are seen as dependent on the locational and output decisions of private business (Richardson, 1969). It is not a formal theory, for in the opinion of its proponents, the factors involved in industrial location are too many and too varied to be reduced to generalized concepts. It is techniques oriented, that is, utilizing shift-share, input-output and other analysis in determining regional growth patterns based on empirical observations.

Richardson (1969) aptly points out that "macroeconomic theories and the industry approach to regional growth are not contradictory"¹⁴ they merely represent different perspectives of the processes involved in that growth. In order to develop programs and policies aimed at reducing regional disparities, an understanding of the diverse nature of the problems is required, and this can only be attained through the study of the different levels of economic activity.

The criticisms levelled above involving theories which indicate convergence, were in effect, a plea by a number of authors for a more 'real' and more inductive approach to regional development theory. These have, to some extent been met by macro theories of imbalance and the micro-economic approach of industrial location. What remains to be determined is the importance of the economic activity intermediate between these two, for this has been neglected in developing theories of regional growth.* This is an argument put forward by Holland (1976) in stating that "a better understanding of regional imbalance can only be gained by identifying key trends to imbalance at the macro, micro and intermediate meso-economic level."¹⁵**

D. The Meso-economic Sector

The meso-economic*** sector represents the 'key' industries in the

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- * Such neglect must not be interpreted as ineptitude on the part of scholars and researchers of the past for it is a recent phenomenon and problems created by it even more current.
 - ** To date micro and macro economic levels have dominated growth theory. This theory along with the empirically based industrial location analysis have failed to produce a generalized operational theory on regional growth. The volume of work describing industrial location factors and influences and the macro scale theories which concentrate on aggregate flows of investment and population have been limited to description of the past direction and location of regional growth.
 - *** Meso-derived from the Greek mesos meaning intermediate or between.

economy -- the multi-plant, multi-national, multi-functional and in some cases multi-sectoral firms. The term 'meso-economic' according to Holland (1978), refers to the increase and growth of such monopolistic companies "whose behaviour is totally different from that of small-scale national firms in the micro-economic competitive model, and which constitutes a new economic sector between the conventional macro- and micro-economic orthodoxies."¹⁶ The meso-economic 'take-over' and subsequent control over the economy is felt in all western regions. The problems created by it are by no means unique to any one country, for their growth in capitalist states has stemmed from increasing demand for economies of scale and the requirement of specialization. These firms will continue to create regional industrial problems immune from the micro and macro based regional policy instruments now in place. It is the limitations of these instruments in light of the above discussion that is the concern of the second chapter.

E. Conclusions

Regional growth theories may be grouped into three major categories including evolutionary, balanced and unbalanced approaches. The first, evolutionary, has been largely discounted due to its limited application to specific types of regions. The balanced or neo-classical economic approach has allowed highly sophisticated econometric analysis to be conducted, which in itself may provide useful information on regional economies. The basic problems however lie in the application of neo-classical models. Both the regional economy and the flows between regions are viewed in equilibrium or at least tending towards one. The underlying assumptions which allow this approach to work are often overlooked by its users in light of the conclusions reached. It is the assumptions

however which support the equilibrium conclusions often reached and for this reason cannot provide a valid or real picture of regional economies for use in planning and policy making.

The unbalanced approach to regional development is seen here to hold greater utility in terms of its use in regional industrial planning. Factor flows between regions have not resulted in equilibrium, indeed, it has been argued that the acceptance of unbalanced theories is a precursor to lessening disparity. It is precisely because factor flows are opposite to that proposed under neo-classical models which has resulted in the rather unimpressive performance of regional economic planning and policy in western nations. Efforts towards understanding those elements in the economy which may cause such unbalance therefore could prove rewarding.

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CHAPTER II

REGIONAL PLANNING INSTRUMENTS

The goal of most regional industrial policies in western countries has been the mitigation of disparities between different areas within their own boundaries. This goal has not been realized. Indeed, in many cases there is difficulty in identifying positive trends towards regional balance notwithstanding varied policy measures. This chapter begins with a discussion on the continued need for regional industrial planning. The methods most commonly used to combat regional disparity are then outlined followed by a critique of present policy instruments. This leads to a general discussion on the relationship between theory and policies and the need to recognize particular factors which, while shaping regional industrial growth patterns, have as yet failed to be influenced by the more traditional policy instruments.

A. Introduction

The first chapter of this work indicated that there is an implicit dilemma for planners and policy makers faced with the task of reducing regional disparity. Advocates of the free enterprise system argue that equity between regions depends on the rights of individuals to allocate resources; in effect to depend on market mechanisms alone. Others insist that there is little indication that such processes are at work in our market-ordered, open economies and that efforts must be made towards increasing and institutionalizing government intervention (Todd, 1980).

That a laissez faire approach to market forces leads to, and often exaggerates, the gap between the economically prosperous and disadvantaged regions is an argument developed earlier in this thesis. It will suffice to reiterate here that under such a system there are difficulties in attaining equitable conditions of social welfare (Smith, 1971). Clearly, if one accepts the generalized growth theories which indicate divergence between regional economies and much of the empirically based industrial

theory, the questions to ask are: do existing regional disparities represent 'negative' trends in the economic, social and political makeup of any particular country; secondly, if they are deemed so, should they be the subject of government policy and thirdly, what form should this policy take?

Where economic planning is a function of government, the answers to the first two questions must be in the affirmative and the mitigation of regional imbalance by influencing economic activity must be central to that concept. If national governments fail to recognize regional disparities as a major problem then regions will tend towards economic and political self-determination (Friedmann, 1966). There must be intervention by national governments on the regional level to ensure that disequilibrium forces are abated. It is the third question, namely the form that regional policy measures have taken, which will be the focus for much of this chapter.

B. Instruments of Regional Planning Categorized

As in regional growth and industrial location theory, regional policy measures may be broadly divided into macro and micro approaches (Armstrong and Taylor, 1978). Macro-policy instruments are those aimed at changing aggregate income and expenditure patterns, while micro-policy instruments concentrate or influence the actions of industry and households. Both of these approaches will be described in some detail below, yet greater emphasis will be placed on the latter for it is the influence over industrial location which forms a more regionally-explicit set of policy instruments.

1. Macro-policy Instruments

Most Western nations today engage in some form of macro-policy,

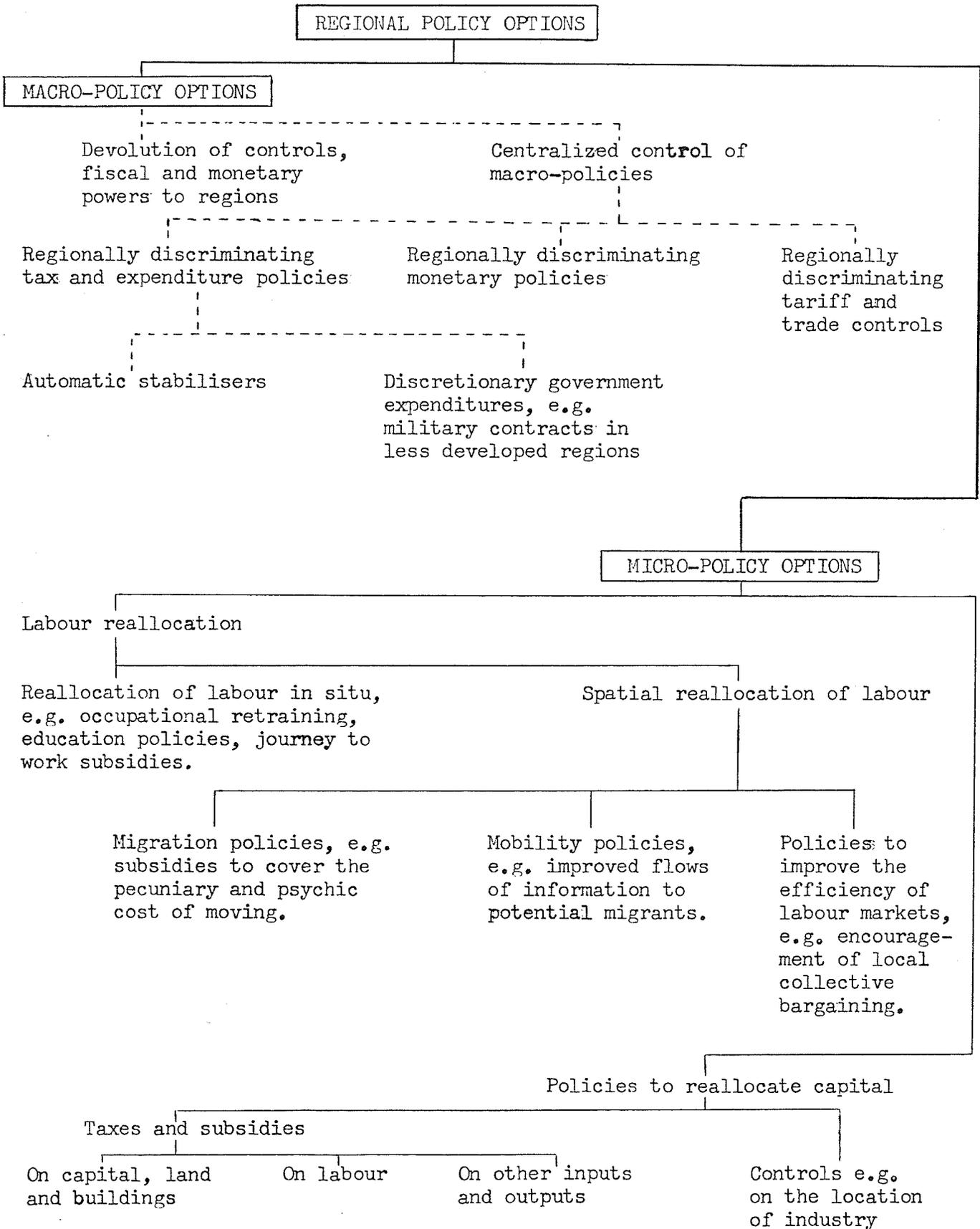


Figure 2.1 Regional policy options: a simple typology with examples
Source: Adapted from Armstrong, H. and J. Taylor, 1978.

whether implicit or unintentionally derived, which has varying effects on regional growth. Firstly, national governments are relatively large producers and consumers. As such, they exercise geographic control over expenditures and purchases and do attempt in most cases to 'regionalize' them in hopes of stimulating demand.* Governments, through their control of taxes and tariffs can increase or decrease demand for both consumer and industrial goods.** Tariffs and input controls contain obvious advantages for regions with favoured industrial structures. Armstrong and Taylor (1978) cite the Canadian case as a good example of such protection policy, where the manufacturing region, namely Ontario, is allowed to produce goods at slightly higher costs than are found on the world or even the North American market.

Direct transfer payments in the form of unemployment and welfare benefits automatically favour areas with high numbers of unemployed and are looked upon as stabilizers in the economy. Armstrong and Taylor (1978) point out however that the use of such "macro-policy instruments to solve regional problems is severely constrained by the existence of other policy goals."¹ These measures are also subject to spillover and leakages ultimately resulting in diluted regional effects.

Macro-policy instruments address the problems caused by the failure of market mechanisms. In themselves they cannot hope to adjust or correct such mechanisms to the degree of establishing regional equity in terms of employment and income. Much of the emphasis therefore has been placed on policy instruments which attempt to influence the location pattern of industry.

* Military spending and the location of state-owned industries are two often-quoted examples of such regionalization.

** The regionalization of taxes does not hold with the well-entrenched principle of 'horizontal equity', therefore its usefulness is seen to be limited.

2. Micro-policy Instruments

Industry is often looked upon as the medium through which regional planning and policy takes place. The measures taken to influence it form the essence of micro-policy options. Richardson (1975) offers several reasons for this well established link between regional policy and industry. The first involves the mobility of industry compared with other factors of production. Manufacturing is viewed to be more 'fluid' in the sense that industry has been termed increasingly 'footloose', or in a position where the differences in cost vary little over space. Secondly there is always the underlying rationale, according to Richardson (1978), that industrial policy instruments will influence 'dynamo' firms or "propulsive industries in the Perrouxian sense" to locate in economically sensitive areas and in turn act as a catalyst for further development.² Finally, there is the argument of national efficiency, where a more even distribution of industry actually improves national growth rates than might be expected in situations when one or two regions dominate the rest.

In developed countries regional planning measures have concentrated on these specific problem areas; underdeveloped, depressed and congested regions.* Stilwell (1972) points out that underdeveloped regions do not necessarily constitute a problem region. Their existence is evident in all countries and the directing of industry in their favour will not automatically result in economic gain. Depressed regions are areas which have experienced industrialization but for reasons of declining demand now demonstrate slow or possibly negative growth. Congested regions are generally recognized as areas experiencing increased diseconomies with increased economic activity.

* This is not to imply that these problem areas are separate entities to be studied in isolation for they are often highly dependent.

To further classify micro-policy measures Cannon (1975) identifies three phases of development which influence the direction of policy. The first is the 'nation-building' phase where the goal is to encourage the establishment of a manufacturing sector and to increase aggregate growth. Instruments in this case are geared to core or single region growth. The second phase involves industrialization and the formation of dualistic economies. The goal in this case is to attract industry specifically to designated underdeveloped areas. The third and final phase is one of post-industrialization where there are areas of structural 'backwardness' associated with changes in technology and required inputs on the part of firms. This is a phase which experiences an increasing assortment of policies designed to deal with the problems created by such structural obsolescence. The discussion which follows will be limited in scope to dealing with depressed and congested regions in the post-industrial phase of development. This, in effect, allows for a more detailed analysis of regional industrial planning as experienced in western nations today.

Micro-policy instruments can be divided into three groups: methods of attracting industry, regional rehabilitation, and an administered system of industrial controls.* Of these three, the first, industrial attraction through a system of subsidies, loans, special tax rates, favourable depreciation and the development of industrial estates has proven most popular (Richardson, 1978; George, 1971). The second, regional rehabilitation may be viewed as an indirect method of attracting industry and involves increasing and improving infrastructure in an area through both economic overhead capital (EOC) and social overhead capital (SOC). The third category which will be discussed, that of controls, has come to be known as

* Armstrong and Taylor (1978) recognize that this is a rather arbitrary distinction and that a number of specific instruments may fall into more than one category.

the proverbial 'stick' of regional development tools. Its application has been by no means universal and its results sometimes controversial (Turner, 1974). It involves the limiting or restricting of industrial growth in certain congested regions in hopes that industry will be prompted to expand or locate in certain areas deemed desirable for growth.

George (1971) has established a set of five criteria which are helpful in determining the viability of any particular policy instrument.*

- (i) must be capable of meeting regional objectives
- (ii) must be effective at minimum cost
- (iii) multiplier effects must be maximized
- (iv) must be administratively and politically feasible
- (v) distortion of the established distribution of industry should be minimized.

With these criteria in mind, those instruments used to directly attract industry will be discussed, beginning with those measures to subsidize labour inputs.

Despite many authors indicating the positive nature of payroll or labour input subsidies, (George, 1971; Stilwell, 1972; Moore and Rhodes, 1974; Cannon, 1975), the implementation of this instrument has been extremely limited, Britain and West Germany being the only countries to undertake such a program. The Regional Employment Premium legislation was passed in Britain in 1967 and was the first direct subsidy on the employment of labour.** The objective of labour subsidies is to make labour input costs competitive if not cheaper than that in other areas,

* George (1971) has determined these criteria as 'ideal' in terms of policy measures and recognizes that they have not been met.

** Moore and Rhodes (1974) have done an extensive evaluation of the effects that this instrument has had on industrial location in Britain.

this in turn should spur regional exports which theoretically increase regional income and employment. George (1971) has indicated that payroll subsidies are highly attractive instruments relatively easy to administer, politically feasible incurring both high regional multiplier and low cost effects. Armstrong and Taylor (1978) point out two problems which may be encountered in the use of such an instrument. Firstly the subsidy must be of significant magnitude to reduce export prices. They quote a 6% reduction in labour costs resulting in only a 2% reduction in a region's export price. This would hardly be enough to make the region's output cost-competitive. A second problem may arise where the products produced in depressed regions have a relatively small value-added component. In order to make this subsidy attractive to industry, labour must be of major cost to production.

Another variable cost subsidy is that on materials and fuel. These constitute a high percentage of overall input costs and in the case of fuel the percentage cost is evidently on the increase. There are two methods of subsidizing materials and fuels. These include a direct method where a percentage of total variable cost is recouped from the government and an indirect method where the transport rates for these inputs may be subsidized. Transportation subsidies of this type are well established in Canada. The Crow's Nest Pass Agreement, a railway subsidy for western provincial producers and the Maritime Freight Rates Act subsidizing railway and road transportation, have been in existence for well over 50 years. George (1971) argues that variable cost subsidies of this type may in fact distort the established industrial structure. Because certain types of industries are favoured over others there is a danger of disrupting processes which are tending toward regional growth.*

* Where for example transport subsidies exist, those firms dependent on high weight to value inputs may be highly favoured. Such structural changes may not be desirable in so far as they perpetuate the need for subsidies.

Capital subsidies refer to direct grants and guaranteed low interest loans on fixed costs of the firm, that is, on land, buildings and machinery. These are widely used instruments of regional industrial planning with similar programs in Britain, Canada, France, Italy and the Netherlands. Most often they take the form a 'lump sum' or single payment to an industry during its initial phase of expansion or location in a designated depressed area. Although such grants and loans may appear generous in relation to total fixed costs, the fact that most firms planning horizons extends from 20 to 50 years dwarfs such subsidies in relation to total operating costs over this time. Along the same line, work done by Hamilton (1974) demonstrated that it is operational rather than locational functions which are of more concern. Capital grants and loans also point to problems of discretion. Obviously, offering lavish grants and loans to all firms wishing to locate in designated regions, besides leading to possible over spending, would in many cases result in subsidizing firms which may have located in the area without aid (Brewis, 1969).

Finally, in terms of the problems associated with the use of capital subsidies, Alonso (1975) points out that there is "a certain irony in the use of such inducements, for they will operate most strongly for industries that are capital-intensive, and, if technical substitution is possible, it will encourage them to substitute capital for labour since they make capital cheaper."³

The use of industrial estates to attract industry to the more depressed regions is of relatively recent origin. Boley (1958) defines an industrial estate as a "special or exclusive type of planned industrial district, designed and equipped to accomodate a community of industries, providing them with all necessary facilities and services."⁴ Bale (1977) points out that their use as a tool for industrial regional development came only after

their proven success by private enterprise. Industrial estates can be said to provide a number of factors important to industrial location: infrastructure availability, external economies of scale and the existence of linkage and contact patterns. Collectively these serve to decrease the risk of establishing a new plant in a depressed region (George, 1971). Governments may establish industrial estates and provide land and premises at better terms than might generally be expected from private development. The British have made by far the most extensive use of industrial estates as a measure to stimulate regional industrial growth (Morgan and Alden, 1974).* Its use has proven positive and its cost relatively low when compared to other instruments (George, 1971).

The second category of micro-policy instruments involves rehabilitation and may be said to operate indirectly to attract both labour and industry through its concentration on positive externalities. This refers to the provision of SOC and EOC. SOC according to Holland (1976), relates specifically to infrastructure essential to domestic use (housing, health and education facilities) while EOC is that infrastructure used directly by producers (roads, communication facilities, power and sanitation services). Improvements in education and training facilities are an intrinsic part of regional development in almost all countries where regional policy has been accepted (Smith, 1971). Infrastructure expenditure on housing, transportation, communications and health facilities are an important element of regional growth prospects and this is especially true where the size of the public sector is large relative to total gross fixed capital formation (Alden and Morgan, 1974). George (1971) points out that such expenditures "though not a remedy for the retardation of industry...should be an adjunct of any other measures taken."⁵

* Their use in Britain is certainly not solely linked to national policy. Local authorities also utilize this technique to wide extent.

Industrial location controls, the third category of micro-policy instruments, have been utilized where there exists highly congested primate city regions in conjunction with underdeveloped and/or depressed regions.* Notably this would include both Britain and France although these are not the only two countries to suffer similar problems. The controls used in Britain have been described by Turner (1974) as an "economic planning instrument designed to raise the nation's industrial efficiency and to achieve a high rate of employment in the Assisted Areas."⁶ The problems in France are seen as somewhat more acute. Jean-Francois Gravier (1964) in his book 'Paris and the French Desert' documented the fact that historically, Paris had been the centre of art, education, science and government, leaving peripheral areas socially, economically and politically disadvantaged. The restrictive measures used in both countries take the form of a license or certificate issued by a government body giving the authority to disallow the expansion or location of new firms over a specific size in hopes that they will locate in a designated depressed region. Holland (1976) points out however, that such instruments may actually harm national efficiency at the expense of poor regions, that is, more employment will be lost to congested regions than gained in depressed regions.** The effectiveness of such measures is also seen as being highly dependent on aggregate growth rates, for in times of recession few firms wish to expand or relocate. The existence of controls according to Stilwell (1972) is directly related to the inadequacy of other instruments aimed at attracting industry away from congested areas. This argument seems rather fallacious

* Richardson (1970) has indicated that congested urban areas are not a problem unique to developed areas alone and that equal levels of external diseconomies may exist in depressed areas.

** Faced with the choice of expanding or locating in what is considered an economically marginal area the industrialist may not expand at all.

however in light of the fact that in both Britain and France, controls were established in conjunction with measures to attract industry.

3. Growth Centre Strategy

The practical application of growth pole theory is often termed an instrument of regional planning (Smith, 1971). In fact it is the concentrating of several of the measures as described above in specific 'centres' or 'points' which either demonstrate or hold promise of strong agglomeration economies. The goals, as with most regional policy are to establish cumulative growth and spread effects in areas of general decline. There are numerous problems however with its application. Firstly, Todd (1980) points out that as a strategy of economic growth it was "devised as a tool of economic efficiency '...but that it has been' contrived to alleviate regional problems." He goes on to state that there is a "mismatch between the stated goals of regional development and the structural plans which define what is actually permissible in growth center operations."⁷

In the final analysis it may not be that growth centre strategy is unable to stimulate the economy of a region. The problems may stem from the micro-policy instruments used to establish it in the first place. Improved infrastructure in conjunction with direct industrial attraction instruments possibly over simplify the pre-requisites for growth centre establishment or they may be ineffective in achieving their stated objectives. Stohr and Todtling (1977) have been most critical of growth centre strategy and have likened it to a minimization of neo-classical macro-economics. They state that "since overall mobility of factors and commodities had turned out to be unfeasible, the implicit attempt was to collapse reality back into a set of disaggregate point economies, and to thereby make regional equity and national growth compatible."⁸ It must be borne in mind that with the exception of location controls, all the

micro-policy instruments thus far have their basis in equilibrium orientated micro-economic industrial location analysis. The premise that slight adjustments to or 'corrections' to the workings of the market system will lead to or tend toward regional balance is basic to such an approach. Equilibrium models then, are extensively used as the basis for justifying the existence of these instruments. Smith (1971) hinted that such is the case in pointing out that "planners...are generally guilty of attempting to deal with industry from an inadequate theoretical base, which means that the outcome of their proposals are often highly unpredictable."⁹ Stohr and Todtling (1977) have argued that regional policy instruments relying on the manipulation of factor prices and the rehabilitation measures based on infrastructure development, are in effect used as "crutches to try to make the neo-classical model work."¹⁰ Conclusions such as this have led them to believe that regional development theory, industrial location analysis and their practical application have become mutually dependent or in essence, a closed loop.

The overall policy implication, to quote Stilwell (1972) is "to develop a system of taxes and incentives which makes the individual firm's profit-maximizing location synonymous with the social optimum."¹¹ There is little to indicate however the firms in general have developed systematic methods of locational decisions-making. It is more likely there is an attempt to achieve a set of minimum criteria rather than optimum (Hamilton, 1974).

It has become extremely difficult to develop policies then, aimed specifically at alleviating regional disparity. Firstly, the control over those forces which are having the most adverse effects on the nationally balanced economy are difficult to subject to micro-policy measures. These forces stem from a variety of sources and shape the aggregate indus-

trial location pattern (Hamilton, 1978). They would include the adoption of mass production techniques, increased capitalization of industry, increased size of firms, the evolution of the multi-plant, multi-functional and multi-national corporations and the increased growth of existing city systems. Such forces tend to perpetuate regional specialization and indicate the increasing importance in the structure of organizations.

Stafford (1972) has argued that "regional development planning is not concerned with the economically optimum location for the plant but is very concerned with the location decision-making process so that decisions might be influenced."¹² Yet these decisions are rarely made within the context of a formal location policy internal to an industry. Even if such policies were common in industry it seems highly unlikely that they would be similar in structure or content. For many industries the chosen location is an unconscious decision or a by-product of a decision to achieve some non-spatial goal (Hamilton, 1974). It would be extremely difficult then for regional policy to affect such decision-making given the diversity of factors influencing those decisions.

What might be said is that the locational behaviour of certain types of firms are more readily interpreted than others, that in general, increasing size and organization is consonant with a more systematic approach to location (Walker, 1975). McNee (1974) has gone further in stating that the study of organizations may "provide a means of moving toward that elusive goal of locational analysis, the provision of more direct links between the analysis of spatial process and the analysis of spatial pattern."¹³

The indication is that the industrial location process does not conform to classical cost minimization-revenue maximization principles which serve as the basis of present regional policy. As Stafford (1972)

has stated in reference to regional policy measures "we expect, even demand, rather narrowly defined economic constructs to account for economic variables."¹⁴ The greatest departure from the 'traditional' constraints lies in the emergence of the multi-plant firm (Wood, 1978). The traditional approach being an attempt to describe the locational behaviour of unifunctional firms operating within a single nation state. The assumption of the equilibrium models become further removed from reality as a smaller number of corporations dominate larger portions of the economy.

Planners and policy makers have for the most part, ignored changing organizational aspects within and between firms. They have depended on traditional descriptions of industrial behaviour, on rather narrowly defined profit-maximization assumptions and the equilibrium models which have stemmed from them in developing regional policies. There exists, related to the above arguments, a rather ironic situation in regional development policy. Although implicitly any regional policy must come to terms with the unbalanced nature of the workings of the market economy, policy makers have relied on equilibrium theory and models to fashion the instruments and the overall strategy of regional industrial development. Attention must be turned away from such dependence if regional disparity is to be reduced. In this light, greater emphasis and study should be directed towards understanding and influencing the meso-economic sector.

This sector represents the most mobile firms in industrialized economies (Holland, 1976). They are the least influenced by location economies, that is, they are in a position to disperse their production activity.* This stems from their ability to secure economies of scale through widely dispersed production rather than agglomerative activity. The market for

* This refers to their ability to disengage from external economies of scale and/or urbanization economies.

their products is not confined to local areas and their production inputs very often do not derive from within a single country, providing them with a higher degree of flexibility in terms of location. Within the corporate system the greater a firm's status the greater will be the influence over the economic structure of the region (Krumme and Hayter, 1975). In the case of the meso-economic firm, their control over land, labour and capital make them difficult to subject to public planning. In this context, for some organizations the existence of regional boundaries may not mean much and regional planners may be seen more "as provincial trouble-makers" than economic aids (Krumme and Hayter, 1975).¹⁵ The regional and corporate planners in this case, face different spatial constraints stemming from their selection of different planning strategies and in most western countries, corporations are neither obligated nor pressured to account for the social costs or benefits occurring from their location decisions.

Attempts to attract or force meso-economic firms out of heartland locations into less developed regions may prove extremely difficult. These firms are no longer working within the confines of the isolated state and faced with a compulsory move to less developed areas, may chose to locate in another country where returns to capital may be higher* (Holland, 1976). The threat to locate totally outside of a country has a proven leverage effect over government policy measures whether they be of a direct or indirect nature.

With industry being the main medium through which a balanced regional economy is sought, that is, the agent for economic, technical and administrative change in an area, the meso-economic firm must take on prime importance. These are leader firms in a so called competitive economy, where

* Such a situation is specific to those countries which utilize more direct policy instruments.

the behaviour of industry has been described as acting "with the discipline of a chorus line" (Holland, 1976).¹⁶ The smaller firms will mimic the location patterns of key industries. Forcing one to survive without the other spells certain economic hardships for the smaller industries while proving a mere annoyance for the larger.

The location of the meso-economic firms is usually centred in and around the major metropolitan-international cities. Another fallacy stemming from this in terms of the locational behaviour of these firms is that they are reacting to basic social and economic overhead capital and that the provision of these in less developed areas will stimulate regional growth.* Improvements in housing, schools, health, recreation facilities, etc., or in power production, communications and transportation in most depressed areas are a "necessary not a sufficient condition for regional development" (Holland, 1976).¹⁷ Depressed regions, despite efforts to improve such conditions, cannot compete with the more developed areas on this level.

Wood (1978) has stated that the spatial impact of organization structure is "a problem of scale, abstracting significant local consequences from strategies and decisions that operate nationally or even internationally."¹⁸ The problem is obvious enough, yet distinguishing which factors have local, regional and national significance to the extent of generalization would prove exceedingly difficult. It is the effects that the industrial structure and decision-making processes have on regional economic growth which will be the focus of the following chapter.

* This is not to deny that the multi-national firms are not attracted to places providing very high order goods and services.

C. Conclusions

The instruments of regional planning can be divided roughly into two broad categories; macro and micro. Macro instruments for the most part concern the allocation or reallocation of capital from relatively prosperous to less developed regions with the national government acting as a type of 'filter'. In this sense it has been argued that they address only the symptoms not the causes of regional disparity and are therefore of little consequence in terms of alleviating the problems of depressed regions.

The micro instruments of regional planning are closely linked to industrial development and as such are more likely to come to terms with the causes of disparity. There are three groups of micro instruments including directly attracting industry, rehabilitation and a system of administered controls. Today, with the possible exception of France, efforts in most countries have concentrated on the first two only. The underlying premise on which these are based is that slight corrections to the market mechanism will result in stimulated regional industrial development, and by implication, equilibrium trends established between regions. There is little empirical evidence to support this premise however, given the evaluation studies of micro instruments. The growth centre approach seen here as a culmination of macro and micro instruments may not produce positive results for precisely the same reasons.

Finally, the adherence to cost-minimization revenue-maximization approaches to industrial location has left regional industrial development planning with a narrow view of organizational aspects within and between firms. In order to come to terms with a changing industrial structure and corporate organization, greater emphasis on the meso-economic sector will have to be stressed.



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CHAPTER III

THE MESO-ECONOMIC SECTOR AND REGIONAL INDUSTRIAL GROWTH

The first and second chapters of this thesis briefly reviewed both regional growth theory and industrial location theory, discussed and attempted to demonstrate the linking elements between the two. From this discussion it was determined that an important and increasingly large sector of the economy has been left unaccounted for. The purpose of this chapter will be to detail the nature and magnitude of this sector, and to weigh the costs and benefits which would accrue to regional development planning if some attempt were made to include it specifically in policy.

A. Introduction

That an open market economy does not of itself result in a lessening of regional disparities is regrettably apparent. The immobility of natural resources and of population contribute to this lack of inter-regional equity. There is much to indicate however that both capital and skilled labour flow from depressed to more prosperous regions and that it is the greater loss of capital from the former or the absence of a more 'positive' flow which results in such problem areas (Holland, 1976). It would serve some purpose therefore to detail the importance of the meso-economic firm in establishing these relationships.

To deny that the structure and organization of industry has changed radically over the past 35 years would be paramount to the denial of production changes for that same period. It seems unlikely that a strong case could be made for the latter. Industrial growth has become characterized by increasing size of individual production units and the organizations that control them, namely the corporations. Regional industrial policy however, has remained steadfast in its attempts to influence such industry, relying on methods which in today's corporate environment must

be viewed with a degree of scepticism. The 'economic man' and 'profit maximizing' myth persists despite all the evidence to the contrary. Lee (1977) in discussing a review of industrial and regional policy for Europe has stated that regional inequality continues to be viewed as a problem of "laggardly market mechanisms rather than as the spatial manifestation of processes of structural centralization and the resultant locational concentration of capital."¹

The responsibility for such 'backward' policy however, can only partially be attributed to planners and policy makers. Only recently have the theoretical, conceptual and empirical works on regional growth and industrial location attempted to account for the observed departure from the neo-classical mode. Hamilton (1976) has argued that for 50 years following Weber's founding works on locational analysis, researchers have "assumed an organizational structure in industry more appropriate to the period of embryonic industrialization of early nineteenth-century Western Europe or America."²

Indeed there seems to be no lack of criticism on what Gertler (1972) has termed the 'conspicuous missing link' of regional development theory and practice.³ As Holland (1977) points out, there has been, on the part of scholars, a "failure to grasp the changed structure of the dominant enterprise within the system, and the extent to which they have undermined the textbook assumptions of regional theory and policy".^{4*}

The gist of the above criticism is that the impact of corporate structure on regional growth may be at odds with present industrial location

* McNee (1974) has offered some insight into the reasons of this apparent neglect. He distinguishes between small and large firms and states that the spatial behavior of the former is readily understood by examining the external environment of the firm, while the latter requires a more detailed knowledge of the inner working and organization of corporations. Information in relation to the first is more readily available.

policy and that the instruments now in place rely too much on influencing the micro-economic factors ascribed as 'universal' location determinants.

B. Structural Change in Industry

A starting point for discussing industrial changes is Westaway's (1974) analysis of organizational structure pertaining to business firms.* He outlines four stages of corporate growth:

- 1) original single-functional firm, controlled by a single entrepreneur or family group.
- 11) consolidation to form national corporations, brought about through increased demand and sophisticated technology. This is a stage with a new administrative structure. There exists a horizontal division of management into specialist departments of finance, personnel, purchasing, sales, etc. along with a vertical system of control to connect and co-ordinate departments.
- 111) multidivisional corporation, decentralized into several divisions based on product line. This represents a diversification for the corporation or in a broad sense, a form of protection where a decline in one division will not greatly affect aggregate performance.
- IV) multi-national corporation, basically a corporation in stage 111, which demonstrates the ability to expand part of its operation (ie., other than exporting) beyond the borders where it was first established. The motive for such development is to secure vital inputs, increase market area and increase diversification.

As will be discussed in some detail later in this chapter, aggregate economic activity has become heavily weighted in favour of the latter two

* This is consonant with McNee's (1974) work on the development of corporate structures.

stages of corporate development. It is felt that sufficient argument has already been made pointing to the concentration of regional industrial policy on the first stage of this development.

Recently there has been more emphasis placed on the meso-economic sector as a cause of regional disparity and as a force which has tended to negate regional policy objectives. Stohr and Todtling (1977) have pointed out that the present policies to combat regional disparity may actually operate to favour the established structure of large-scale organizations rather than the interests of the regions for which they were designed.

C. Corporate Structure and Regional Problems

There are a number of problems, besides those outlined in Chapter Two that have arisen with changing industrial structure, which directly affect regional economic growth. Briefly, these would include: the competitive nature of the market, the 'control' that the meso-economic sector exerts on the market, the effects of a vertically integrated decision-making hierarchy on regional growth, the relative immunity of this sector from indirect government location influences and, finally, the magnitude of this sector which relates to all the above problems. Each of these will be described in greater detail below.

Firstly, the corporations which compose this meso-economic sector are not 'price-takers' but 'price-makers', that is, they control consumer choice and effectively set price levels. This leads to a high degree of unequal competition between firms, where the market tactics of the meso-economic organization dictate performance levels of the smaller firms.* This stems from its size in relation to other firms in the industry and to the market

* Such price setting can undermine the effect of incentives which assume normal profit margins between firms.

area in which it operates (Report of the task force on the structure of Canadian industry, 1968).* Holland (1976) goes much further in discussing the uncompetitive nature of the meso-economic sector. His argument involves the entry-barrier which may be established by large corporations to prevent small-firm competition. The nature of the barrier is based on the price of products. Given that the meso-economic sector has much more latitude for setting price levels, its ability to lower prices to a point where smaller competitors could not recoup fixed and variable costs, establishes an effective entry barrier. This, combined with what Wood (1978) has attributed as being the major motivating force behind industrial decision-making, that is, to make other firms dependent on them, indicates an increased importance of this sector.**

The meso-economic corporations also have the ability to 'float' funds or product demand from areas of high profitability within the organization to production points that may be encountering difficulty. Internalized financing and the establishment of regional production facilities are two examples where capital or production demand may be channelled within the organization. Effectively, it ensures a much lower level of risk compared to other firms which cannot internalize such operations.

If, as suggested, this sector has considerable market power in certain industries, an understanding of organizational location behaviour is essential in order to link its operations with regional development. Lee (1977) discusses three levels in the meso-economic organization associated with different spatial tendencies. These include: a 'production level' where activities are dispersed in response to basic factors of location, a 'co-

* This report is informally referred to as the Watkins Report.

** Dependent in this sense refers to required inputs or backward linkages to other firms.

ordination level' which is concentrated in larger urban centres and a 'planning level' which tends to be highly concentrated, located in primate or capital cities only. An examination of these three levels reveals two long-term, contrary, spatial tendencies. There exists increasing concentration of capital decision-making and administrative control functions and a decentralizing of production, service and marketing functions. Given the nature of this structure, increased control and decision-making external to a relatively depressed region has implications for its development potential. Holland (1976) has described the process as 'inter-regional dualism' where capital flows from the production or regionalized levels to planning and co-ordinating levels, resulting in a net loss of investment to the poorer region. Parsons (1972) also points out that "the removal of investment and spending decisions to the head office or specialist division effectively alters the geographic range over which any decisions will be made".⁵ The noticeable absence of R & D facilities in lagging regions throughout all Western industrialized nations, attests to the concentrated framework under which this sector operates.

Finally, in terms of the negative regional effects that may be attributed to the meso-economic sector, the removal of decision-making levels from depressed areas can only be seen to dampen indigenous entrepreneurial drive and innovation (Firn, 1975). It seems unlikely that an environment devoid of opportunities in the higher administrative and management fields can hope to foster the type of cumulative growth patterns which form the objectives of much regional development policy today. Where major decisions on production, investment, purchasing and sales originate external to an area, there can be little stimulus for those people with skills in these fields to remain in a depressed region. As corporate size increases along with economic control there is a form of decision-making lost, that would

not have resulted had the firms remained small and subject to market discipline (Watkins, 1968). In this sense, the type of decisions and the framework from which they are made are affected by the level of corporate concentration. The conclusion therefore is that present corporate organizational structure and its associated location behaviour have been a formidable obstacle to efforts made to establish regional equity.

D. Concentration of Industry and Meso-economic Power

The discussion to this point has addressed a number of regional problems stemming from the development of meso-economic organizational structure. In order to determine the economic strength of this sector and, in turn, the magnitude of the problems, some space will be devoted to describing and quantifying it in relation to the economy and industry in which it operates. While emphasis will be on the Canadian situation, existing trends towards corporate concentration in other countries will be also highlighted. Domestic and foreign based industry are dealt with separately, although discussion of their effect on industrial concentration levels will not be disaggregated.

The corporate structure of any economy can be described in two ways, on an aggregate level, where the largest corporations are measured in relation to their particular fraction of an industry. There are several indices used to describe corporate concentration.* The one adopted here is that used by the Royal Commission on Corporate Concentration (1978) termed the concentration ratio.** It is the percentage of economic activity (sales, output, value added, etc.) accounted for by the largest (25, 50, 100, etc.) corporations in relation to total activity.

* These would include rate of growth, rate of technological innovation and degree of import competition.

** The Roayl Commission on Corporate Concentration is abbreviated to R.C.C.C.

Historical data on corporate concentration in Canada based on total assets indicates that there was a decline in aggregate concentration among domestic non-financial corporations from mid 1920 to 1966 and that since that period levels have remained relatively stable.*

In looking at Figure 3.1 we find that close to 50% of total assets of non-financial corporations can be accounted for by 200 corporations, 40% by the top 100, 30% by 50 corporations and 25% by the top 25 enterprises. Of interest here is that as the number of firms decreases their control of total assets increase (ie., does not decline proportionately). Figure 3.2 shows concentration of assets in financial corporations to be even higher with the top 50 accounting for greater than 60% and the top 100 for 68%.

By comparing concentration levels in Canada with those in other countries an understanding of the role that large corporations play in the total economy may be gained. The R.C.C.C. (1978) in comparing total assets of the top 100 corporations in Canada to that of the U.S., in relation to their respective economies, concluded that Canadian corporations were an average twice as large (see Figure 3.3).

More important than aggregate data on the largest corporations in an economy is the proportion of assets, sales, etc. that the top firms in any one industry control. This is seen to be of greater regional significance in terms of the power and control wielded by a minority of corporations within an industry. It is the relationship between industrial corporate concentration and geographic concentration which is important to regional development especially in view of the finite and particular distribution of sources and markets.

It is suggested that with increasing corporate concentration there is

* These trends do not account for foreign-owned corporations nor subsidiary foreign operations.

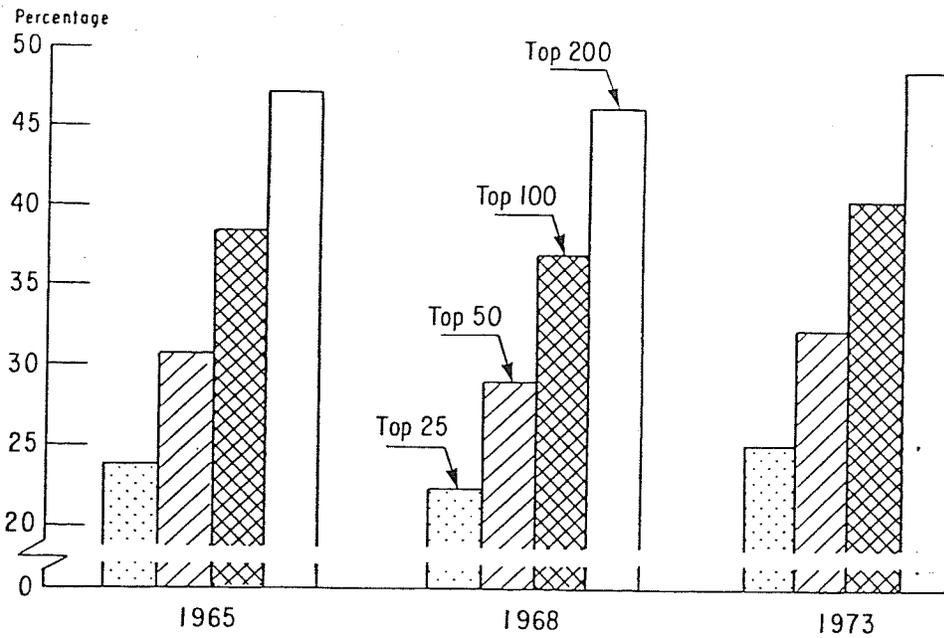


FIGURE 3.1 Percentage of Total Assets Accounted for by the 25-200 Largest* Non-Financial Corporations, Canada, 1965, 1968 and 1973.
 Source: RCCC research.
 Note: *Ranked by assets.

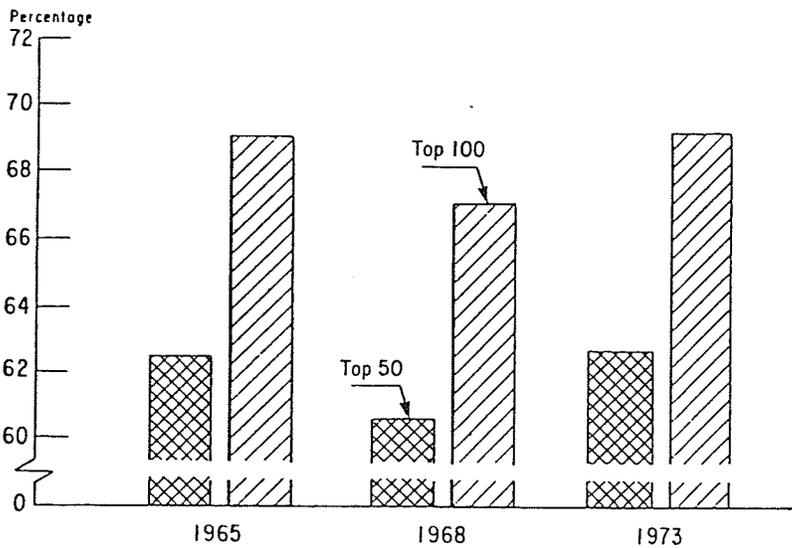


FIGURE 3.2 Percentage of Total Assets Accounted for by the 50 and 100 Largest* Financial Corporations, Canada, 1965, 1968 and 1973.
 Source: RCCC research.
 Note: *Ranked by assets.

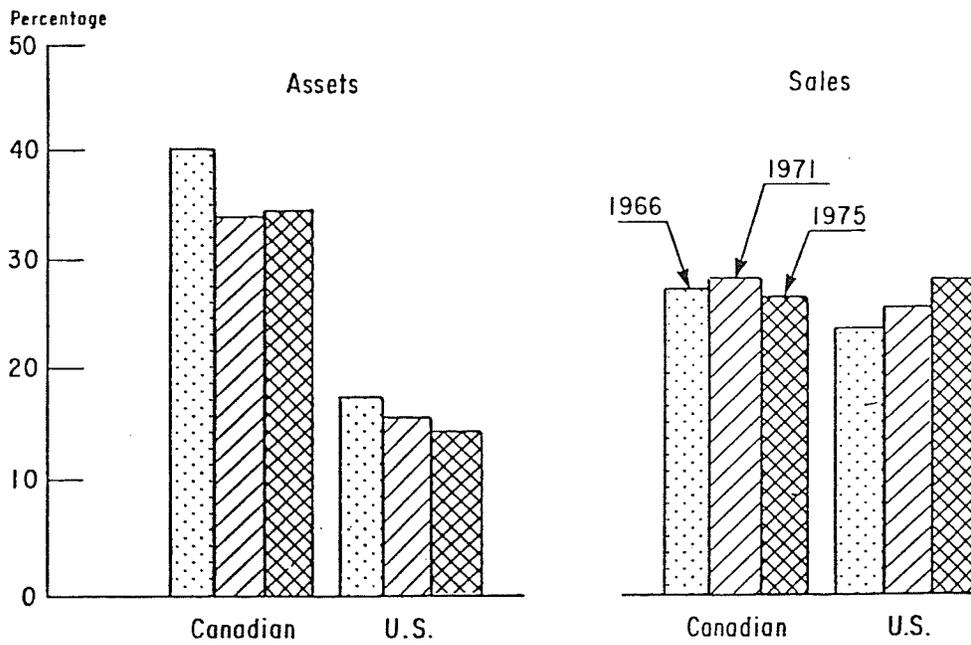


FIGURE 3.3 Percentage of Total Domestic Assets and Sales Accounted for by the 100 Largest* Non-Financial Corporations, Canada and the United States, 1966, 1971 and 1975.
Source: RCCC research.
Note: *Ranked by sales.

a corresponding decrease in the effectiveness of conventional, indirect regional planning instruments and in the ability of depressed regions to improve their positions relative to the economy as a whole. The underlying premise is that the industrial structure is a determinant of industrial behaviour and performance and as outlined earlier in this work, such structure has strong regional growth implications.

There are a number of measures of industrial corporate concentration, only one, the industrial concentration ratio is used here.* It indicates the percentage of output, sales, value-added, profit, etc. for which a group of the largest corporations (top 4, 8, 20 and 50) can account. Although they are not regionally-weighted concentration ratios, the R.C.C.C. (1978) concluded that magnitudes would be higher for regional data than those for national aggregates. This is particularly true of products whose value to shipment cost ratios are low. Beverages, glass bottles, cement, poultry products, etc. typically involve regional as opposed to national markets. Indexes based on national aggregate therefore tend to distort the regional effects.

An historical perspective on Canadian corporate merger reveals two major periods. The first, from 1909-1912 was characterized by amalgamation in heavy industry and textiles while the second, of 1925-1930, saw mergers in pulp and paper, chemicals and dairy industries. As will be discussed later, these are still among the highest concentrated industries in Canada. These mergers were widespread, so that by the end of the 1930's leading Canadian industries had fewer than ten producers, and many only three or four (R.C.C.C., 1978).

* Other indices include: the inverse ratio, which is the number of firms required to account for a fixed percentage of an industry's total activity, and the Herfindahl index, which utilized the sum of squares method to determine market share for each corporation.

Time series data on manufacturing industry, based on four-firm employment concentration in Canada demonstrated trends for five concentration ratio classes.* Figure 3.4 divides industry into the five classes with trend lines from 1948 to 1972. For class 1 and 2, those manufacturing industries with high concentration ratios, there has been a slight decline over time while class 3, 4, and 5 show general increases. The implication is that for industries which have typically not been dominated by a small number of firms, there has been an increasing trend toward higher levels of concentration.

A breakdown of Canadian manufacturing industry, Table 3.1, is based on four-firm (value-of-shipment) concentration ratios. It reveals that for a majority of industries the four top firms account for more than 40% of the value of shipments and that 41% of total manufacturing has four-firm concentration levels of greater than 50%. Appendix 2 lists the twenty Canadian manufacturing industries with the highest four-firm, value-of-shipment concentration ratios.

Table 3.2 provides four, eight and twenty-firm concentration ratios for the largest nine manufacturing industries in Canada. Only two industries listed, miscellaneous machinery and equipment manufactures and sawmills and planing mills have twenty-firm concentration ratios less than 50% and only three industries have eight-firm ratios less than 50%. Industrial concentration levels, based on R.C.C.C. (1978) data, demonstrated that these nine largest manufacturing industries in Canada, has four-firm ratios higher than corresponding industries in the U.S., West Germany, France, Japan, and Sweden.

Besides having one of the highest levels of domestic industrial concentrations, Canada also has a high degree of foreign ownership. There has

* Four firm concentration ratios have been chosen because of their continuous availability.

Four-Firm (Employment) Concentration in
Canadian Manufacturing Industries, 1948-72
(Weighted Averages in Percentages)

CR ₄ (Employment) Level	Percentage of Industries						
	1948	1954	1958	1965	1968	1970	1972
Class 1 80-100	89.3	83.3	81.7	86.9	83.6	86.5	82.5
Class 2 60-79	65.2	68.4	61.1	62.6	57.1	56.2	54.4
Class 3 40-59	51.8	63.8	67.9	67.2	65.8	66.0	67.5
Class 4 20-39	31.5	31.7	33.2	35.6	34.3	36.2	34.9
Class 5 0-19	10.0	12.3	11.9	13.4	14.4	16.1	17.1
	Average All Industries						
	44.3	48.7	50.2	53.9	51.1	52.9	51.0

Source: R.S. Khemani, *Concentration in the Manufacturing Industries of Canada: Analyses of Post-War Changes* (Ottawa, 1977).

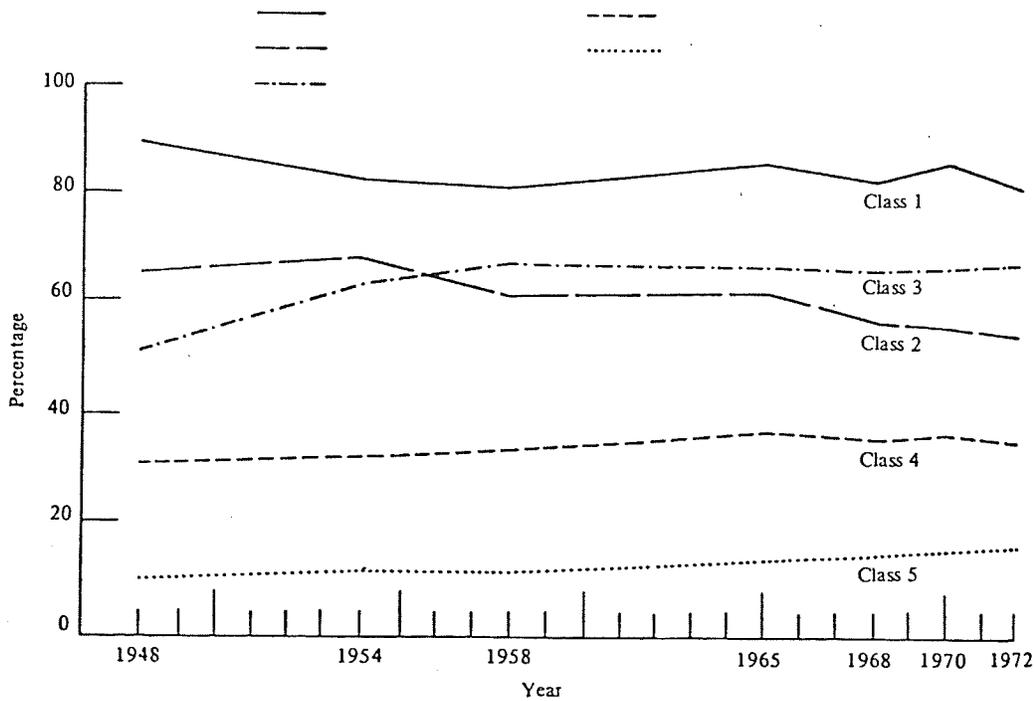


Figure 3.4 Four-Firm (Employment) Concentration in Canadian Manufacturing Industries, 1948-72.

Source: R.S. Khemani, *Concentration in the Manufacturing Industries of Canada: Analyses of Post-War Changes* (Ottawa, 1977).

Table 3.1
Four-Firm (Value-of-Shipment) Concentration Ratios in Canadian Manufacturing Industries, 1972

Industry Group	Number of Industries	Percentage of Total Manufacturing Value Added	Percentage of Industries with Ratios of										Not Available*
			90 to 100	80 to 89	70 to 79	60 to 69	50 to 59	40 to 49	30 to 39	20 to 29	10 to 19	0 to 9	
Food and beverage	18	14.3	11.1	-	16.7	16.7	5.5	16.7	27.8	5.5	-	-	-
Tobacco products	2	1.0	50.0	-	-	-	-	-	-	-	-	-	50.0
Rubber	2	3.0	-	-	-	50.0	-	-	-	-	50.0	-	-
Leather	5	0.9	-	-	20.0	20.0	-	20.0	-	40.0	-	-	-
Textiles	16	3.5	12.5	-	12.5	6.2	12.5	6.2	25.0	-	-	-	25.0
Knitting mills	3	0.9	-	-	-	-	-	-	33.3	33.3	33.3	-	-
Clothing	10	3.2	-	-	-	10.0	10.0	-	20.0	10.0	40.0	10.0	-
Wood	13	5.8	-	7.7	7.7	7.7	-	30.8	15.4	15.4	15.4	-	-
Furniture and fixtures	5	2.0	-	-	-	-	-	-	40.0	-	40.0	20.0	-
Paper and allied products	6	7.9	-	-	-	-	16.7	33.3	33.3	-	-	-	16.7
Printing and publishing	4	5.1	-	-	-	-	-	25.0	-	25.0	50.0	-	-
Primary metals	7	7.9	-	28.6	42.9	-	-	28.6	-	-	-	-	-
Metal fabricating	11	8.1	-	-	-	9.1	-	9.1	18.2	36.4	18.2	9.1	-
Machinery	4	4.1	-	25.0	-	25.0	25.0	-	-	-	25.0	-	-
Transportation equipment	10	10.8	-	10.0	-	10.0	-	20.0	10.0	10.0	-	-	40.0
Electrical products	9	6.4	-	-	22.2	11.1	33.3	11.1	-	-	-	-	22.2
Non-metallic mineral products	14	4.0	7.1	14.3	21.4	7.1	14.3	21.4	7.1	7.1	-	-	-
Petroleum and coal	3	1.9	-	33.3	33.3	-	33.3	-	-	-	-	-	-
Chemicals	11	6.3	-	-	18.2	9.1	27.3	9.1	18.2	9.1	-	-	9.1
Miscellaneous manufacturing	18	2.6	-	-	16.7	16.7	16.7	11.1	11.1	5.5	5.5	-	16.7
Total manufacturing													
Percentage	(100)	100.0	3.5	4.7	12.3	9.9	10.5	14.0	15.2	9.4	9.4	1.7	9.4
Number	171	(\$24 billion)	6	8	21	17	18	24	26	16	16	3	16

Source: Christian Marfels, *Concentration Levels and Trends in the Canadian Economy, 1965-73* (RCCC Study no. 31).

Example: Read as "11.1% of the 18 industries in the food and beverage groups have four-firm concentration ratios between 90 and 100%."

Note: *Not available because of Statistics Canada regulations with regard to confidentiality for industries with fewer than four firms.

Table 3.2
 Concentration Levels and Trends for the Nine Largest Canadian Manufacturing Industries, 1965 and 1972
 (Ranked by Manufacturing Value Added in 1972)

Industry	Year	Number of Enterprises	Number of Establishments	Manufacturing Value Added		Value of Manufacturing Shipments		Total Employment			1965-72 Trend in Four-Firm Concentration Ratios		
				\$ Millions	Percentage of Total Manufacturing	\$ Millions	Percentage of Total Manufacturing	Thousands	Percentage of Total Manufacturing	Value-of-shipment Concentration Ratios			
									CR ₄	CR ₈	CR ₂₀		
Pulp and paper mills	1965	56	132	1,033.5	6.9	2,104.4	6.2	69.9	4.4	36.9	57.1	86.3	Decline
	1972	65	141	1,374.1	5.6	3,127.8	5.6	79.0	4.7	34.4	52.5	80.1	
Iron and steel mills	1965	32	41	646.1	4.3	1,231.8	3.6	44.3	2.8	78.8	90.3	98.6	Decline
	1972	35	48	909.4	3.7	1,900.8	3.4	49.8	3.0	77.7	90.7	98.5	
Motor vehicle manufacturers	1965	20	20	631.4	4.2	2,120.3	6.2	42.4	2.7	93.3	98.2	100.0	Decline
	1972	17	22	906.8	3.7	4,033.6	7.2	44.0	2.6	n.a.	98.1	-	
Motor vehicle parts and accessories manufacturers	1965	149	160	326.6	2.2	755.6	2.2	32.0	2.0	54.2	64.4	80.7	Decline
	1972	171	211	866.6	3.6	1,903.1	3.4	46.2	2.7	48.8	64.8	79.6	
Sawmills and planing mills	1965	2,464	2,559	384.5	2.6	896.2	2.6	50.8	3.2	16.8	26.7	36.9	Increase
	1972	1,463	1,567	864.9	3.5	1,893.6	3.4	57.1	3.4	18.2	27.7	43.0	
Miscellaneous machinery and equipment manufacturers	1965	501	528	419.7	2.0	797.1	2.3	44.0	2.8	15.0	24.3	41.5	Decline
	1972	710	759	717.1	2.9	1,454.5	2.6	53.3	3.2	12.5	21.7	36.5	
Petroleum refining	1965	12	40	244.1	1.6	1,383.6	4.1	9.0	0.6	84.4	98.1	-	Decline
	1972	14	41	431.3	1.8	2,361.7	4.2	14.4	0.9	73.7	94.6	-	
Slaughtering and meat processors	1965	365	399	267.3	1.8	1,438.7	4.2	30.0	1.9	48.0	67.5	77.3	Decline
	1972	415	468	428.6	1.7	2,551.4	4.5	31.3	1.9	53.9	62.0	72.9	
Dairy products	1965	1,165	1,421	277.4	1.8	1,061.7	3.1	33.5	2.1	25.1	34.8	48.8	Increase
	1972	498	731	392.1	1.6	1,573.7	2.8	28.9	1.7	33.0	45.8	62.2	

Source: RCCC research.

Note: n.a. = not available.

an increasing trend of ownership and control in the form of corporations with parent operations in other countries. Direct foreign investment in Canada has risen from \$8.7 billion in 1950 to \$68.6 billion in 1975. An important element in this increase stems from a change of portfolio capital investment to direct capital investment.* In 1946 direct capital investment from foreign sources was 39% of the total foreign capital; in 1975 it had risen to 58% (R.C.C.C., 1978). Over half of this direct capital has been traced to U.S. corporations and the conclusion drawn by the R.C.C.C. (1978) is that there exists a "strong direct correlation between the degree of foreign ownership and the degree of concentration".⁶ Direct foreign capital flows into industries dominated by a small number of corporations and avoids those industries which typically are composed of large numbers of highly competitive firms. No other country tolerates the level of foreign ownership and control which exists in Canada (Watkins, 1968). The wedding of foreign capital and industrial concentration in Canada and its impact on the capital flow within the country makes this investment an important determinant of future industrial structure. Whereas in Canada we have less than 2% of the corporations controlling more than half the economic activity, efforts towards influencing this minority has great potential in terms of the distribution of investment, jobs and income between regions. It remains doubtful, according to Gertler (1972), "that regional development policy has ever seriously faced up to the highly centralized structure of Canadian industry".⁷ Until there is some acceptance that these ultimate 'movers' in the private economy are the real economic planners and that this sector consists of a relatively small number of corporations, there will be few victories in regional industrial planning

* Portfolio capital investment represents foreign investment in Canadian government bonds and securities while direct investment represents equity, retained earnings and long-term debt.

or policy. It is the persistent adherence to regional policies which fail to recognize these facts, which explains in large measure the desultory results of regional level planning over the past twenty years.

E. Location Decision Making and the Meso-economic Sector

That the decisions and actions of industry with respect to location is a function of structure and organization, is central to this thesis. Expanded analysis, therefore, depends on an understanding of the decision-making and spatial patterns of location so resulting in the meso-economic sector. This can only be achieved through a study of the firm's decision-making processes in general and motivations which underlie the formation of corporate location strategies in particular.

Townroe (1971) has done some pioneering work in the field of industrial location and accordingly sees the location decision "as part of a dynamic process within the context of an industrial organization and its environment and as a decision which necessarily has to be taken in the face of uncertainty".⁸ He has outlined four stages of the idealized organizational decision-making process from the view-point of the enterprise:

- 1) policy and process initiation (perceived new situation)
- 11) search for alternative solutions
- 111) evaluation of alternatives
- 1V) choice and commitment to action.

Studies by North (1974) and Townroe (1971) demonstrate that the larger corporations have a greater degree of familiarity with this process and therefore are more likely to institute it or recognize it as part of the overall policy. The organizational method (ie., whether this structure is built into the organization) under which the corporation operates in dealing with new locations affects both the quantity and quality of information received and the use made of it.

Both internal and external pressures are seen to initiate the location process. North (1974) has provided an extensive list of what he has termed 'stress factors' leading to location decisions. Generally, internal stress factors include: change in space requirements due to increased growth and expansion, new management, new products or a need for financial change. External pressures arise from a change in the supply of inputs, of labour or, in some cases, public policy or controls. The overriding condition for expansion or relocation in Townroe's (1971) study was shown to be growth not profit, and this growth motive was demonstrably stronger in the fast-growing, larger corporations.

An obvious and necessary prerequisite for this process is the availability of capital required for a new location. Sources of capital are seen to be of primary importance therefore, and these differ widely. Smaller firms typically depend on external capital from banks or the issuance of shares while larger corporations readily obtain capital internally or in many cases from parent groups (R.C.C.C., 1978). This availability of capital has a direct bearing on the type of location decision to be made. In the larger corporations, capital is more easily attained, increasing the likelihood of establishing a branch plant or office as opposed to a transfer move.* This is consonant with North's (1974) work which determined that relocating firms were both younger and smaller than those making other location decisions.

The actual search for a new site is dependent on the information available on alternative locations. The sources of information are too varied to provide a comprehensive list here, suffice to say that there is a wide range of sources.** What has been determined is that fast-growing, larger

* Townroe (1971) estimates that two-thirds of all location decisions involve branch plants.

** Pred (1974) provides one of the better listing of information sources and how they are used.

firms consider a greater number of possibilities and form a set of alternatives in less time (Townroe, 1971). This was seen to be a function of the 'organizational slack' or the ability of larger firms to delegate more resources to finding potential locations.

In evaluating these alternatives, only 50% of the enterprises in Townroe's (1971) study established formal criteria.* Again it was the larger companies which outlined specific objectives prior to evaluating the alternative sites. The financial evaluation, typically considered to be an integral part of the decision making process, involves two stages. The first is to determine if the investment is required and the second, a detailed cost analysis of alternatives. The results in Townroe's (1971) work indicated something very different. He stated that "for a majority of companies, alternative locations are not evaluated on explicit cost grounds and the financial assessment comes after the locational choice".⁹ The suggestion is clearly that the classical frame of reference does not allow for the dynamic aspects inherent in industrial decision-making.**

It must be borne in mind that the decision-making model presented here, that of, information gathering, processing and manipulation is a generalization of the process involved.*** Important to the discussion however is that the larger corporations seem to have established decision rules which often stem from internal policy on strategy towards developing a new location. Where the aim of regional industrial policy is to influence location decision-making, it seems logical to attempt to influence those corporations which have established criteria and are more likely to follow

* Formal criteria in this case was merely writing down a list of desired characteristics.

** North (1974) offers a more detailed account for decision-making processes.

*** There seems little to indicate that variable or fixed costs were important factors in location nor the availability of loans or grants especially attractive features (Townroe, 1971).

the process as described above. There exists some controversy however, as to how this might be done. Before examining the possible methods and instruments that can be put in place to achieve such a task, it would serve some purpose here to outline the benefits and costs associated with having meso-economic corporations located in depressed regions.

F. The Benefits and Costs Associated With Influencing Meso-economic Activity

Western economies are dominated by the meso-economic sector, yet attempts to influence it to attain national and regional goals remain an open question. There exists two basic policy alternatives which set the pattern in dealing with this sector (Westaway, 1974). The first is to allow unconstrained hierarchical development in order to achieve maximum national efficiency. This is based on three underlying premises:

- 1) that spatial concentration of control units is the most efficient way to organize large corporations
- 11) that what is 'good' for business is 'good' for the nation,
- 111) that any economic benefit outweighs any social costs implicit in such policy.

To date, all three premises remain unsubstantiated, although in one form or another they provide the basis for much related policy pertaining to industry. The second alternative is a policy to reduce regional disparity by decentralizing control functions within industry. This second approach, with the possible exception of France, remains wholly untried in the context of the meso-economic sector.* To determine the feasibility or

* France in its attempt to curb growth in the Paris Region and stimulate that of the provinces has instituted an industrial licencing procedure where by those corporations granted permission to establish production facilities in and around Paris must agree to locate headquarter functions in the periphery.

indeed the 'appeal' of these different methods, the benefits and costs to locating these functions in depressed areas must be spelled out.

1. Benefits

Firstly, any policy or program dealing with resource diversion must come to terms with the opportunity costs involved with any particular course of action. In way of benefits, Richardson (1971) points out that Western nations have the advantage of being more able to afford such costs. Corporations today are also 'footloose' in the sense that there exists ubiquitous infrastructure and an adaptable labour force. This allows efforts towards inter-regional equity without serious loss to national efficiency.

One of the major hurdles in developing a regional policy specific to meso-economic power has been the difficulty in influencing or controlling the sector's corporate spatial behaviour. Gertler (1972) has aptly stated however that "the large firm, and its relative freedom from the rigours of the market, leads to the paradoxical consequences, that such firms are both highly autonomous in decision-making and more susceptible to government policies".¹⁰ The meso-economic corporation may also be more receptive to the idea of moving to designated development areas than smaller micro-firms. Hamilton (1976) points out that the larger firms have less parochial attitudes, little regional attachment and greater commitment to national policy.

The argument that firms locating in depressed regions capture and retain surplus value is often put forward to justify present policy. Lee (1977) disagrees however, pointing out that rarely will you find these areas accumulating the surplus. Without the higher financial, administrative and control functions located internal to the region surplus value will tend to be siphoned to areas which dominate in these activities.* Under such

* This basically is a restatement of Myrdal's cumulative causation argument.

reasoning there are obvious benefits which accrue to a region if control and planning functions could be located or expanded in the area. The surplus value would remain in the region and possibly be reinvested.

Further benefits to decentralized control functions would be increased capital and employment of a type which depressed regions desperately require in order to establish cumulative growth. The technology would be more diverse than the production-orientated type of the past, and the labour required by the 'higher' functions are more in line with entrepreneurial and research skills found to be lacking in depressed areas.

A case was made earlier for the growth risk-taking abilities of the meso-economic sector. This must be viewed as a positive element here because these corporations would be more likely to take advantage of any investment opportunities in the area than would the 'defensive' investment firms as outlined by Holland (1976).*

There would also be a series of indirect benefits by way of income and employment multiplier effects, increased tax base and a diversified economy. At the core of the benefits however lie the arguments presented in the previous sections of this thesis:

- 1) that the location behaviour of meso-economic corporations are a direct cause of regional disparity and efforts to reverse this trend are clearly beneficial to more poorer regions.
- 11) that this sector has been neglected at the theoretical and planning levels.
- 111) that this sector accounts for and controls most of the economic activity in the country.
- 1V) that regional development policy must come to terms with the

* These would represent regional firms which undertake only minimum risk in order to maintain their existing share of the market.

economic sector which most influences aggregate and cumulative growth on a regional base.

2. Costs

One of the first aspects to be considered under costs is whether government resources would be of more benefit directed towards putting control and planning functions in peripheral areas or maintaining present policies. Where such policies have demonstrated positive tendencies or obtained their objectives there would be little gained by implementing new policies to ensure trends towards regional equity.*

One of the major costs of directing so called high-corporate functions to depressed areas is attributed to the loss of efficiency in a broader economic context. George (1971) indicates that operating costs are generally higher for operations in depressed regions, as compared to more prosperous areas. This would include transport, raw material and information costs.

Where there exists meso-economic organizations in depressed regions Marshall (1977) points out that multiplier effects will differ little from that created from indigenous industry and that overall, because of their internalizing tendencies will utilize less local services.

Finally, McDonald (1977) stresses that the potential gains from directing meso-economic corporations to depressed areas are great, but cautions against their use of highly-trained, highly-skilled external labour as opposed to obtaining employees from the regional population.

In general, given that corporate structure has been neglected in regional industrial planning and the possible benefits generated by the meso-economic sector towards establishing a greater degree of regional equity, some effort should be directed towards influencing specifically those cor-

* Most studies to date on the effects of region policy have indicated little noticeable change (Economic Council of Canada, 1977, Moore & Rhodes, 1973, Francis & Pillai, 1976).

porations whose share of market power constitutes a large percentage of the total. How this can be accomplished and the possible instruments to be used is the subject of the following chapter.

G. Conclusions

The organizational structure of industry today presents new problems for those responsible for regional industrial development. This is not to say its existence has come about only recently, only that the implications of this structure are receiving new-found recognition. Previously there has been little consideration given to locational aspects of the meso-economic sector. Part of the reason lies in the relative immunity from micro planning instruments as described earlier and its ability to 'over-ride' regional policy. Its aggregate behaviour therefore has been presented as one which negatively impacts the economies of LDR's.

The absolute size of the meso-economic sector as determined in this chapter indicates its importance to industrial economic activity and suggests potential benefits from its inclusion in regional industrial planning. This is especially the case where corporate behaviour is seen to follow or work within a set of established and often fixed economic criteria.

H. Footnotes

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CHAPTER IV

TECHNOLOGICAL DEPENDENCE: THE NEED FOR A NATIONAL INDUSTRIAL STRATEGY

The first two chapters of this thesis have dealt with the theoretical concepts of industrial location and regional growth as they are related to present regional industrial planning. The third chapter outlined the structure and concentration of industry within Canada, especially the meso-economic sector. This chapter examines in greater depth regional industrial development as it relates to both the corporate concentration levels and the structure of industry within Canada and the concept of "innovation orientated" regional planning is introduced.

A. Introduction

Presently, Canadian regional policy emphasizes the stimulation of new economic activity in areas which have consistently demonstrated lower than average rates of such activity as defined by employment and income statistics. Infrastructure development, financial incentives to firms and programs to update labour skills have formed the bases of these policies. In its simplest form, it is a set of policies designed to attract industry and spur indigenous growth in specifically designated areas with some degree of discretion exercised as to the type of industry desired. It is not the purpose of this chapter, however, to detail the actual policies nor to discuss at any length the terms under which they are, or were, administered. Instead, regional policy and planning as it relates to corporate concentration and to the structure of industry in Canada will be highlighted.

Two important concepts form the underpinnings for this discussion. The first involves the growth and survival of meso-economic power, particularly, its industrial functions and characteristics as related to regional development. The second relates to efforts in Canada to forge a workable industrial strategy or strategies in aggregate which may in fact provide a

framework from which regional strategies are developed. These two have considerable overlap yet they are discussed separately in order that the underlying issue, that of regional industrial planning may be dealt with on a broad scale. Some of the spatial aspects of corporate concentration will be discussed first, followed by a brief analysis of industrial strategies for Canada. These are then related to the existing structure of industry and a new role or emphasis for regional industrial planning is stressed; one based on innovation and technology rather than the employment and income criteria presently being used.

B. Spatial Concentration and Corporate Power

A study done by Pred (1974) on corporate headquarters locations for the largest 500 corporations in the U.S. provides strong support for the argument that both leading manufacturers and non-manufacturing organizations are highly concentrated spatially (see Appendix III). Although the geographic units are based on cities of greater than 500,000 population, the regional concentration is obvious, that is, heavy representation in the North-East and sparse representation elsewhere. These large corporations are seen to stimulate a cumulative growth process whereby support functions and infrastructure are put in place to service this 'higher level' economic activity which, in turn, contributes to increased concentration.*

The analysis of the top 100 corporations, ranked by sales volume, in Canada, reveals a spatial bias for headquarters locations more acute than that found in the American study just alluded to. Figure 4.1 shows that 53 headquarters of the top 100 corporations are located in Ontario and 27

* Higher level in this context refers to managerial, administrative and strategic planning functions on the corporate level.

FIGURE 4.1

Toronto	45	Core region location
Windsor	1	
Oshawa	1	
Ottawa	1	
Hamilton	4	
London	1	
Montreal	27	
<hr/>		
Calgary	3	Peripheral region location
Vancouver	10	
St. John's	1	
<hr/>		

Number of headquarter functions located in Canadian cities

Based on the top 100 corporations in Canada.

in Quebec giving central Canada 80 of the largest corporations head-office locations while peripheral regions such as the Atlantic provinces account for only one. This is consonant with Blackburn's (1978) study on the location of multi-national operations in economic core regions of seven Western nations (Figure 4.2). He found that 60% of U.S. - owned subsidiaries and 45% of the U.K. - owned operations in Canada located in Ontario. Although he does not attempt to weight any of the figures, that is to say, provide some indication as to the economic importance of multi-national activity in each country, the results clearly demonstrate the high degree of spatial concentration in core regions of foreign investment, and this applies particularly to Canada.

Collectively, the top 100 corporations in Canada and the foreign controlled subsidiaries represent economic units which are associated with a strategic corporate-planning process as discussed in Chapter III.* It is a system where the development of objectives, the selection of means to meet those objectives and the commitment of resources is routine. The decisions for core region locations may be similar for these corporate groups yet, as will be discussed in some detail below, there are important and different regional implications between headquarter and subsidiary operations.

C. Developing a National Industrial Strategy

Central to any discussion on corporate concentration and its effect on regional industrial development must be the efforts made by governments in attempting to formulate a national industrial strategy. The calls for a national industrial strategy in Canada could probably be traced back to the

* This is decidedly different from 'business planning' or incremental management as described by Malecki (1980).

Nation	Data year	Core region	Investing nation	No. Plants	% of Total
Canada	1961	Ontario	U.S.A.	664	60
			U.K.	129	45
			Other European	23	32
U.S.A.	1975	Middle Atlantic	U.K.	173	45
			W. Germany	82	44
			Canada	61	37
			Netherlands	36	40
			France	34	38
			Switzerland	24	42
			Sweden	20	38
			Japan	9	22
United Kingdom	1968	South East	U.S.A.	454	51
France	1971	Paris Region	U.S.A.	128	50
			U.K.	24	42
			W. Germany	11	19
			Netherlands	33	72
			Belgium	15	31
			Sweden	15	39

Figure 4.2 Foreign owned manufacturing plants located in economic core regions.

Source: Blackburn, 1978.

time of Confederation yet serious efforts in this area have occurred over the last twenty years.

The Area Development Agency (ADA) in 1963, as part of the newly established Department of Industry, was first given the mandate to assist manufacturing industry in areas of economic decline in order to increase employment and income levels. Although the scope of its original jurisdiction included the potential to develop a comprehensive industrial strategy, little was done to secure such a role. Its preoccupation with unemployment as opposed to area development led some to believe that the agency served little more than a welfare function (Brewis, 1969).

In 1969 many of the programs dealing with industry and regional development were brought under the auspices of the Department of Regional Economic Expansion (DREE). There was also at this time, some shift in emphasis away from assisting areas which demonstrated marginal potential to building up areas that showed some degree of economic strength. Greater discretion was exercised as to the type of industry assisted in as much as the effects it was presumed to have on the area in which it was located were now considered. Expenditures were increased but no industrial strategy was forthcoming from either the department of industry or regional economic development.

Today, over eighteen years after the first legislation was enacted towards establishing a national industrial strategy, the perceived need for an industrial framework remains acute.

In June of 1980, Herbert Grey, the Minister of Industry, Trade and Commerce highlighted what he saw as "elements of a vigorous industrial sector".¹ The list included the following requirements:

1. To capitalize on Canada's energy base in order to build a world competitive industrial sector.

2. To ensure that the federal government is an active player in industrial development rather than a passive referee.
3. To strengthen Canada's research and technology capabilities.
4. To encourage independent, Canadian-owned enterprises.
5. To expand Canadian control of the economy while increasing the benefits from foreign investment already here.

A corollary to this approach was offered by 'Bud' Olson, Minister of State for Economic Development in October of 1980. Although the list differs from that of Grey's the emphasis remains the same:

1. Top priority to upgrading workers' skills whether done by government or industry or both.
2. Capital investment to be attracted by reducing the inflation rate and by making sure investment is used as productively as possible.
3. Security of energy, supplies, conservation and substitution for oil, and use of energy resources to maximize employment, technology and prosperity for all regions of Canada.
4. Natural resources to be better managed than in the past.
5. Technology to be encouraged throughout Canada, with both the federal government and the private sector increasing their research and development.
6. The development of transportation and communications infrastructure.
7. Foreign and domestic market development through assisted exports and freer trade between provinces in Canada.

Basic to both Grey's and Olson's approach are concentration on capital investment, the upgrading of skills, energy security and technological development. Positive efforts are being made towards bringing all of these objectives to fruition, but according to Thomson (1980), "it is the details that are killing Canadian industrial development".² The nature of these

details, especially in regard to the federal government's recent objective to have 2% of G.N.P. devoted to R & D by 1985 (with some 70% of this coming from private industry) will be discussed below.

One might well ask the relevance of relating national industrial strategies to regional development policy and planning. The common ground lies in trying to influence private decision-makers towards development goals. In this sense there must not only be a co-ordination and co-operation in aligning industrial strategies with regional development goals, but a deep understanding of both the structure of industry in Canada, and the medium through which such programs are to work. This is the argument presented earlier, that to date there has been little recognition of the highly concentrated nature of industry on a corporate and spatial level in developing regional policy, or establishing an industrial strategy. The question to be asked is how effective the efforts towards influencing industry on a national and regional level will be from the posture of Canadian industrial structure.

Self-sustained growth, a major goal on both a regional and national level can only be attained according to Oakey et al (1980) "if firms establishing there (ie., designated place) are able and prepared to adjust continually to satisfy current market demand and technological change".³ In this sense the strategic planning functions and the growth of any corporation depends on the ability to conduct R & D and to innovate. This translates simply into the improvement of existing products and processes along with the development of new ones, and the impact of such changes on firm profitability, expansion and the locational consequences thereof.

The R.C.C.C. (1978) concluded that "there is some evidence that Canadian firms have been characterized by inadequate R & D innovation, export performance and perhaps risk-taking compared with firms in the

same industry in other countries".⁴ Work done by Britton (1980) indicates that Canada lags behind other advanced economies in the production of professional goods, plastics, chemicals, electrical and other machinery. As an alternative to technologically-advanced sectors such as these, Canada has traditionally relied on primary and resource industries. The rationale for a strong resource-based economy are threefold. Firstly, there exists growing world markets and increasing internal demand for Canadian resources. Secondly, Canada enjoys a comparative advantage in that many of these resources exist in vast quantities. Thirdly, there has developed an efficient technology around primary industry and there exists the attitude that Canada should rely more heavily on such sectors.

Britton (1980) however, points out a number of problems which arise in adhering to such a resource based approach:

1. Canada over the period of 10 years has shifted from an exploitive - resource position to one of protection or a defensive stance.
2. Resources cannot offset deficits in manufacturing.
3. These primary sectors cannot provide employment for an increasingly highly-educated work force.
4. The opportunity cost of capital in resource extraction represents a loss of capital to manufacturing.

Indeed, the industrial structure which characterizes the Canadian economy seems more true of developing nations than one with a supposed advanced technological base.

To a large extent the underdevelopment of Canadian secondary and tertiary sectors can be attributed to meso-economic operations, especially those stemming from the actions of multi-national firms.* Fifty-two percent

* Underdevelopment in the sense that Canadian industry is not characterized by a high degree of technological innovation.

of production facilities in manufacturing are foreign controlled plants, yet this figure accounts for only twelve percent of manufacturing establishments. The effects that this has on the structure of Canadian industry must be taken into account in developing any industrial strategy. According to Britton (1980) this point seems to have been missed by most pundits in the field. He stated that "the orthodox, essentially neoclassical view of most economists stresses that unless Canada enters free-trade arrangements with the U.S., or on a multilateral basis, the development of secondary manufacturing will be very costly, especially to the consumer".⁵

According to Britton, however, there are four basic flaws in this logic. The first, as mentioned previously is that Canada is unparalleled in its degree of foreign control; secondly it does not account for the technology-based nationalistic policies in other countries; thirdly, there is little consideration given to the difference of behaviour of foreign and domestic firms in Canada and lastly, few corporations are interested in competing internationally from a Canadian based.* These four elements, to be highlighted in the following sections of this chapter are important determinants of the present industrial structure and will continue to have strong implications in the development of a Canadian industry strategy.

* The extent of foreign ownership and control has been highlighted throughout this work but the following three premises need some elaboration. In terms of the technology-based nationalistic policies, it must be recognized that the 'home' countries of these multi-nationalists have put in place policies to retain present technological functions within their own borders, and because of the efficiency with which technology can be transferred, this possesses little threat to the viability of the corporation. This in many ways accounts for the behavioural differences between domestic and foreign firms in Canada and the separation of corporate functions which has occurred on the meso-economic level.

D. Canadian Technological Dependence

Canadian policy dealing with industry on both a national and a regional level has for the most part been production-orientated. The emphasis has been on job creation with little regard for the type of employment and its effect on the national or regional industrial structure. The decisive factors in industrial development are not related solely to the production of goods but to other activities such as the collection and processing of information, the planning and decision-making on technological development, on market research and product design, in marketing and in finance. Britton (1980) in discussing the importance of these activities has stated that "in a long-term view, comparative advantage is a relative evaluation only of present strength, and as the advanced economies further develop their human resources, Canada cannot both maintain its standard of living and ignore those economic activities in manufacturing that, through technological advances and innovation, enhances the expansion of human capital".⁶

Much of the discussion below involves the different stages of production activity and the different corporate functions brought to bear in each. It may be instructive at this point to briefly outline the production cycle.

It is generally accepted that a production life cycle consists of four phases; introduction, growth, maturity and decline (Bourgault, 1972). Given a new product or a new process, the introduction phase will be characterized by low sales volume, high unit costs and high selling price. Market research is intensive in order to determine potential demand and assess production capability. This is a phase where production may be modified making the engineering and design components extremely important. During the growth phase sales volume increases, profit increases and unit costs stabilize. The performance of a product in this stage is seen to be more important than

its price and for this reason tariff barriers pose few problems in selling (Bourgault, 1972). The maturity phase is one which encounters increasing competition, therefore production costs take on new importance. Efforts are made towards mechanization and automation in order to reduce costs and increase reliability and consistency. Moreover, the labour component is reduced along with engineering and marketing functions. The declining phase is characterized by decreasing profits and a low demand for the product. Production lines are usually dropped at this point unless an innovative product or process can replace it.

The underlying premise is that industrial development does not entail increasing the production facilities of primary or secondary industry at the mature phase of production, but the ability of the region or nation to control and/or attract higher industrial functions.

There are some clear indicators that differences in the performance of these higher functions do exist between Canada and other countries and between regions within Canada. In comparing the number of significant innovations among ten industrially advanced countries Bourgault (1972) found that Canada lagged behind all the others and had a performance level below seven other countries in monetary receipts for patents and licenses (see Figure 4.3).^{*} Within Canada, Martin et al (1979) have demonstrated a measurable difference in the amount of time taken for innovation adoption in different regions. In Ontario, the time involved between the introduction and adoption of an innovation is 1.4 years, for the Atlantic Region 6.9 years and other regions varying between 2.5 and 4 years. Such disparity is clearly related to the industrial structure both nationally and regionally and will negatively impact on efforts made to accomplish regional industrial develop-

* Significant innovation in this case was based on an OECD classification for the location of 110 innovations since WWII.

Country	Indicators No. Emp. in Manuf. Ind. ('000)	I. Location of 110 Significant Innovations Since World War II			II. Monetary Receipts for Patents, Licences and Know-How (1963-64)				% Share of 10 Countries' Manuf. Exports	III. Number of Patents Taken Out in Foreign Countries (1963)			IV. Export Performance in Research-Intensive Industries (1963-65)			V. Export Performance in Research-Intensive Product Groups (1963-65)		
		Abso- lute No.	With U.S.A. Base Index 100	Index Ranked	Abso- lute No. in \$m	With U.S.A. Base Index 100	Index Ranked	Abso- lute No. in '000		With U.S.A. Base Index 100	Index Ranked	% Share of 10 Countries' Exports in R.I. Ind.	With U.S.A. Base Index 100	Index Ranked	% Share of 10 Countries' Exports in R.I. Ind.	With U.S.A. Base Index 100	Index Ranked	
	X	A	$\frac{A}{X}$	B	A	$\frac{A}{X}$	B	Y	A	$\frac{A}{Y}$	B	A	$\frac{A}{Y}$	B	A	$\frac{A}{Y}$	B	
Belgium	1 645	1	20.6	5	7.9	34.2	5	5.8	1.8	12.4	10	3.5	45.4	10	3.0	37.6	10	
Canada	2 428	0	0.0	10	6.2	18.3	8	5.5	1.9	13.9	9	3.4	46.3	9	2.9	38.3	9	
France	7 940	2	8.5	8	46.3	41.9	4	9.8	9.3	38.1	6	7.7	59.0	7	6.5	48.2	8	
Germany	12 385	14	38.3	4	49.4	28.7	7	18.1	29.9	64.7	2	22.1	92.0	2	21.1	84.7	2	
Italy	7 776	3	13.2	7	9.9	9.1	9	7.5	4.6	24.6	7	5.9	59.1	6	5.7	55.2	6	
Japan	17 129	4	7.9	9	5.9	2.4	10	8.1	3.5	17.4	8	5.3	19.3	4	5.9	52.9	7	
Netherlands	1 847	1	18.3	6	26.0	101.2	1	5.9	6.4	43.6	5	5.3	67.3	4	5.9	72.7	5	
Sweden	1 535	4	88.4	2	7.1	33.3	6	3.5	3.8	43.7	4	2.8	60.0	5	4.0	83.2	3	
U.K.	11 798	18	51.8	3	76.1	46.4	3	13.2	15.2	45.2	3	14.2	80.7	3	13.9	76.5	4	
U.S.A.	25 063	74	100.0	1	386.7	100.0	2	22.6	56.3	100.0	1	30.1	100.0	1	31.1	100.0	1	

Notes: For indicators I, II and III, Column B was derived after dividing Column A by working population in manufacturing, (Column X) to correct for country size. The figures were then transformed into an index, with U.S.A. as the base 100 in each case, and ranked (Columns B).

For indicators IV and V, Columns B were derived after dividing Column A by percentage share of the countries' manufacturing exports (Column Y). The figures were again put in the form of an index with U.S.A. = 100, and ranked (Column B).

Sources:

Column A from Vol. III of OECD Gaps in Technology Between Member Countries: Analytical Report, Paris.

Column X from OECD Observer Supplement for 1967 Statistics.

Column Y from Vol. II of OECD Gaps in Technology Between Member Countries: Analytical Report, Paris.

Reproduced from OECD The Conditions for Success in Technological Innovation, Paris, 1971.

Figure 4.3

ment. Less developed regions in Canada in this case are in the periphery of a peripheral country and some mechanism must be put in place to change this. For if Canada's innovative performance is poor compared to other countries, the less developed regions are surely at a greater disadvantage.

Two relationships should be considered in looking at the spatial patterns and impact of the industrial structure on industrial development (Le Heron, 1980).

1. The links between development policy and corporate growth strategy, especially the responsiveness and direction of corporate efforts arising from government policy.
2. The way corporate growth strategy is worked out in company units, particularly through technological change.

The first involves the innovative ability of industry within Canada and the stimulation it receives from government policies. If it is the higher corporate function, that is, the human capital functions, which provide for long term, self-sustained industrial development within and between regions then innovative ability is a key element in it.

The second involves the internal corporate strategy and the functional relationships between different facilities based mostly on the production cycle. We will deal with these issues in turn.

E. Industry, Government and Innovation

Industry remains the medium through which applied science and technology achieve economic development, yet innovation which brings this about implies considerable expenditure, compounded by risk. It is undertaken only when a return can be demonstrated in terms of corporate security, growth or profit. The development of Canadian industrial innovative technology suffers from lack of a sophisticated market (that is a large, high-income market) from

which to work and technological depth, or strong forward and backward linkages to Canadian companies (Britton, 1980). In this sense, innovative behaviour is restricted in Canada either because the perceived risks are too great and/or the industrial structure is not conducive to indigenous innovation. This is not to imply that innovative ability, or the human capital prerequisite to trigger innovation, does not exist in Canada, only that the Canadian environment is deemed less than ideal for the development of innovation products and processes.

Total expenditure on R & D in Canada is less than one percent of G.N.P. and of this amount, greater than fifty percent is accounted for by government expenditure. Canada remains one of the few countries where industries share of R & D expenditures is less than the governments (R.C.C.C., 1978). This 'failure' on the part of industry cannot be attributed to industry alone however. Government must share some of the responsibility for allowing an industrial structure to develop which in some respects is incapable of strong innovative output. This has occurred despite the efforts to design programs to stimulate R & D and provide incentives to industry for the development of innovative technology (see Appendix IV) and despite higher levels of government expenditure on R & D than Norway, Germany, Sweden or Japan. The indication is that Canadian industry has neither the need nor the incentive to put in place the innovative framework occurring in other industrial nations.

Essentially this represents research without development of a situation where the gap between innovation and production has received little attention. Bourgault (1972) points out that there are too few people in Canada, whether in government or in industry who are "concerned with translating widely available or newly discovered science and technology into products and processes that could benefit Canadian industry, relative to

the number who were concerned with generating 'new' science and 'new' technology".⁷ In Canada two-thirds of all expenditure on R & D is in the form of research with only one-third going to development. This is opposite to that found in most other industrialized nations. Indeed there seems to be no clear conception of just what entities in government or private industry are responsible for the link between new technology and production.

F. Innovation and Multi-national Operation

Certain industries in Canada, and especially secondary manufacturing, are dominated by subsidiary operations of multi-national corporations. The details of the internal structure and organizational aspects of these corporations have been highlighted earlier in this work. Important to this discussion are the innovative and development aspects of such operations in Canada.

In a conglomerate structure according to Malecki (1980), "capital allocation is the primary corporate function, and strategy determination may be shared between the subsidiaries and the headquarters".⁸ Such organizational liaison does not seem typical of multi-national subsidiaries in Canada however. Foreign firms generally establish mini-production facilities in Canada in the mature and late growth stages of the production cycle (Britton, 1980). The requirements for skilled and professional labour in the form of designers, engineers, market experts and R & D personnel are minimized at this stage of production. In the Canadian case this has adverse effects in the development of quaternary jobs and minimizes the need for the recruitment and training of this labour class. Bourgault (1972) has been most critical of this long-standing trend of the multi-nationals limiting their subsidiary functions to mature production facilities. He has stated that Canada "has given large grants to multi-national corporations so that

they may build factories which are little more than four walls and a roof, in which to house easily transportable production machines, run by unskilled or semi-skilled production workers".⁹ This type of development has given Canada a poor record for establishing industrial operations in the introduction and growth phases of the product cycle. Furthermore, this imbalance has also meant a poor innovation performance for Canadian industry in general, where the subsidiary plants are dominated by foreign parent operations who supply the technology, the engineering and the R & D from a home base. Britton (1980) has quoted a net import of two billion dollars for managerial and professional services accessed through parent operations. This decreases technical and business functions in Canada, and limits the quality of Canadian infrastructure. It also represents a failure to capitalize on managerial and administrative positions required as a result of foreign investment.

Although the Canadian innovative performance is markedly below that of most other industrialized countries, this has not resulted in a lack of technologically-advanced products from being manufactured here. This seeming paradox has been achieved through technological transfer, where information flows and innovation diffusion occur along corporate 'pipelines' between production facilities, R & D and headquarters.

In the case of the foreign subsidiary, transfer technology is highly specific, occurring through a series of instructions, engineering and architectural drawings from parent operations to production locations. In most cases the innovation must be proven in the home market before export of any technology occurs. Canada, because of its high degree of foreign-owned plants, produces technically sophisticated goods through the process of technology transfer. Britton (1980) has pointed out that because of this subsidiary-headquarter transfer, smaller Canadian firms may effectively be 'short circuited' in terms of acquiring new technology. The controversy

here lies in generating indigenous technology versus importing it. If Canadian industry must 'tap into' foreign technology either through direct technical transfer or through copying, the consequences for regional and national industrial development must be considered. Stated differently, how can effective industrial development planning take place if Canadian industrial technological capacity is dependent on what it can import from foreign sources?

Transfer technology by its very nature will be dependent on foreign suppliers of materials and parts. If, for example, a new inertial navigational system is developed for American-designed fighter aircraft being produced in Canada, there exists little chance that the components would be based on parts presently manufactured in Canada. Even where the innovation originates in Canada, headquarters approval may not be forthcoming due to an unfamiliarity with Canadian suppliers. This type of importation of partially finished goods takes place on a scale or with such volume from within foreign corporations, that it must be considered in developing any industrial strategy.

There are examples, however, where imported technology can have a positive influence on industrial development on a national and regional level. Japan, which also acquires much of its technology from foreign sources, does so through licensing or in effect, buying its technology. Accessing technology in this way requires that industry in the host country know much of processes and production techniques involved and that many of the linkages be within the country. In this way, many of the leading export products from Japan are innovations on products that were originally 'imported' into the country through technology transfer. Most of Canada's technological transfer however, has been through foreign subsidiaries who are directly dependent on parent operations in their home countries. In this context,

Britton (1980) has stated that "growth has occurred in Canada, but development and development potential has largely been concentrated in the regions of the U.S. containing the headquarter and parent plants of the subsidiaries operating in Canada".¹⁰

Because of the structure of industry in Canada, the impetus to develop new technology is severely limited and the gap between research and development remains wide. Unless there is development to complement innovative research, the scope for expanding existing employment at functionally higher levels will remain limited or at best dictated by meso-economic corporations. Malecki (1980) points out that this problem has been recognized in the U.S. in that "corporate strategies among U.S. firms recently have shifted R & D resources away from basic research to applied research and product development".¹¹ This represents a decreased risk attitude toward R & D and is opposite to the innovative framework found in Canada.

The discussion to this point has involved mostly national rather than regional considerations of industrial development. It does reflect however the limited policy alternatives open to provincial and local levels of government, which according to Oats (1972) "preclude their providing significant input into a national stabilization programme".¹² The need for federal action then stems from the lack of jurisdiction that the provincial and local levels have over corporate behaviour.* Integrating national and regional goals and the a priori requirement of determining the regional effects of all national policies has received new attention (DREE, 1980). For this reason, a basic understanding of the existing industrial structure in Canada is fundamental to any planning undertaken in the future.

* The federal government has the responsibility over corporate tax strategies, trade and tariff policy and establishing conditions of entry and operation of foreign firms.

G. Conclusions

In developing an understanding of corporate behaviour the organizational structure must be broken down into its component functions. It is here that we see the differing spatial behaviour characteristic of large corporations. Higher functions within the organization, namely strategic planning, R & D, and administration remain highly centralized while production and assembly functions are allowed decentralized positions. There are intrinsic regional problems caused by this type of structure and these become even more acute as corporate concentration increases and foreign ownership forms a major component of the industrial structure, as is the case in Canada. The medium through which such problems must be addressed is a national industrial strategy. Emphasis could then shift from locating single plants and mature production facilities in LDR's to decentralizing higher corporate functions. One of these functions, R - D, holds much promise as a potential industrial stimulant in LDR's especially if regional industrial planning is to move away from its more traditional conception of the industrial structure.

H. Footnotes

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CHAPTER V

NEW POLICY DIRECTIONS

Chapter Four outlined a preferred form of regional industrial planning, one which accounts for the present industrial structure and its related technological dependence. This chapter presents a set of recommendations based on 'innovation orientated' regional planning and suggests how these might be instituted.

A. Introduction

In time of recession there are fewer mobile industries on which the indirect regional and employment policies will have much effect. This has to some extent discredited the more traditional approaches to these problems (Ewers and Wettmann, 1980). There is, therefore, more emphasis on establishing industry whose growth will be determined by technological change. Innovations and technology strategies are thus increasingly seen as positive replacements for stimulating industrial growth.

In less developed regions (LDR) industry is more likely to be tied to 'standardized' technology, have lower quality workers and low levels of innovative activity. Existing regional policies have contributed to this structure by ignoring higher-function industrial activity in favour of production and employment. Because the concentration of higher-order functions bears a strong relationship to levels of innovative output, depressed regions in general are at a disadvantage. The regions, according to Ewers and Wettmann (1980) "which will win the fight for survival in a time of structural change will be those which are able to compensate for the loss of old markets either by developing new markets or through technological change in their production".¹ Regional innovation potential thus becomes a decisive bottleneck factor in the development of problem regions. There are a number of regional implications to

having technically advanced or higher function activities locate in specific areas:

- increases regional income and output
- improves the competitive position of the industry
- can displace structurally backward industry
- establishes production at an early growth stage as opposed to the mature end of the product cycle.

Innovation in this sense creates opportunities and propels regional industrial growth. The significance according to Bourgault (1972) is that the "demand-pull for innovation... exceeds the percentage of production it represents".² The next section will detail alternative actions which can be taken towards an innovative industrial strategy.

B. Alternatives

It has been argued here that the existing industrial structure acts as a barrier to development or the translation of innovation to production, and that present industrial policies give more importance to capital, the plant and equipment than the technological or 'knowledge' components. There are obviously a number of policy options open to address these problems, but in considering each, both the technological benefits and the regional development character should be made explicit.

The alternatives could be listed as follows:

1. to work within the existing regional and technological policy frame
2. to regionalize R & D functions and present policies involving technology
3. to institute controls over the location of higher functions of meso-economic activity.

1. Existing Framework

In considering the first alternative there are obvious benefits to be won including acquisition of foreign technology and capital, access to large markets, increased production, employment and possible reinvestment by large corporations. The costs of such an approach involve a truncation of indigenous R & D and export capability, an industrial structure highly dependent on production facilities as opposed to higher technical, managerial and administrative requirements and a geographic concentration of higher functions either in core regions within the country or in parent operations in other countries. Such impediments to a more equal distribution of industrial development are seen to outweigh the short-term benefits ascribed to such a structure.

Another major problem with this first alternative is that regional policy and R & D policy in Canada are at odds in their long term goal. Regional policy is primarily concerned with increasing employment and income levels by establishing production facilities in LDR's while R & D policy has for the most part concentrated on establishing research facilities as opposed to ensuring the development side of R & D. Providing the capital to establish research facilities in a production-orientated industrial structure will not ensure innovation nor will it provide the real incentive to innovate. If this framework is to provide long-term industrial development, then emphasis must be turned away from its production and research orientation in order to address the problems caused by the present industrial structure. Within the spatial context, greater discretion should be exercised by those government bodies responsible for stimulating industrial growth and regional development. Discretion not only as to the type of industry but also the functions which will be assisted in locating in specific regions.

2. Regionalized Research and Development

The second alternative, that of regionalization of policies on technolo-

gical industrial development would involve an analyse of the comparative advantage that certain regions enjoy in terms of R & D activity and its associated provision of highly skilled labour. There exists a cumulative process here, where mutually reinforcing elements such as education facilities for a higher trained and professional workforce and other economic overhead capital serve to attract R & D facilities. Malecki (1980) has stated that "the attraction of R & D to the location of a skilled labour force and the corporate headquarters has the predominant locational implication of considerable regional consequences".³ The controversy in terms of regional industrial planning lies in the ability of such facilities to locate in regions other than core areas.

A centralized location may hold benefits for R & D facilities in that close proximity to other such functions may serve to increase general 'awareness' or indeed the linkages between them and this in turn effects the quality of innovative output. Malecki (1980) also points out the advantages of capitalizing on scale economies in centralized locations. The ability to have larger facilities and concentrate more personnel towards R & D may increase the efficiency and production.

The major disadvantage of central locations include the difficulty of implementing new technology with dispersed production facilities. In such cases R & D facilities may not be sensitive to production needs and carry what Malecki (1980) has termed 'a momentum of its own'. Finally, central location may mean higher unit costs for specialized labour and equipment.

Decentralized R & D has the advantage of being able to integrate more closely innovation and production, a problem which seems acute in Canada given its present industrial structure.* Lower costs in terms of labour and

* Production facilities 'isolated' from higher corporate functions typifies peripheral regions in Canada.

equipment would also accrue to facilities in non-central locations.

If efforts are to be made towards locating technical facilities in areas other than the core there must be some recognition of the relationship between technology and any particular industry. Bourgault (1972) points out that "most, if not all, sectors of manufacturing have a certain number of products or processes that have a strong dependence on advanced technology".⁴ Similarly, industry typically considered to involve a high degree of technology have operations which are far removed from their technical components.

In certain industries such as food production and primary metals where there is little R & D done, a strong argument could be made for centralized facilities in order to benefit from economies of scale (Malecki, 1980). The chemical and electrical products industries, however, allocate considerably greater expenditure towards technology and depend on close ties between R & D facilities and production facilities. A decentralized location for these functions would prove more viable than for food production or primary metals.

In this sense a decentralized framework must take into account the type of industry, the processes involved and the relationship between its innovative and production facilities. Greater discretion could then be utilized to achieve a more balanced distribution of these higher functions in industry.

3. Control Measures

The third alternative involves instituting measures of greater control over the locational activity of certain functions within large corporations. The efficiency of such an approach can be seen in Stilwells (1972) comments. He stated that "the instrument of regional policy need not necessarily be designed precisely in terms of locational choice. Crude instruments, such as administrative controls, may be more effective in dealing with firms who do not respond to monetary incentives like traditional profit-maximisers".⁵

Industry is presently regulated or controlled for three basic reasons:

1. because of the size of the project or risk associated with it
(eg., energy development)
2. because of price fluctuations in some sectors (eg., agriculture)
3. because they are essential industries (eg., transport).

There are obvious degrees of control that any government may extend to industry. These would range from nationalization, that is, the controlling interest in the firm or corporation lies with the government, to increasing the number of key sectors for which federal legislation has regulatory powers, to expanding the scope of established programs dealing with industry, for example, to include greater regional considerations.*

Controls over the location behaviour of industry, however, have in the past proven unpopular in the private sector and often difficult for government agencies to administer (Turner, 1974). In view of this, Holland (1976) has advocated a slightly different approach to controls, one which could work well with the functional regionalization of industry stressed above. He has recommended a system of negotiation between a corporation and government agency called 'Planning Agreements or Programme Contracts'. Under such an approach, prospective investment programmes of the corporation are submitted to government and assessed on their regional industrial merits. An important component of these merits could be the innovative capacity of the industrial functions locating in specific areas. Any assistance that might be granted to an enterprise in this case would depend on the implementation of an agreement. Holland (1976) recognizes the meso-economic corporations would not be influenced unless some form of 'sanction or penalty' was impending. He suggests that this might take the form of nationalization of

* In Canada key sectors include communication, transport and finance.

physical assets or the threat of doing so and also the establishment of new public enterprise. This he has stated would ensure a "direct instrument for regional policy and an indirect lever on the co-operation of leading private enterprises".⁶

With Canadian industry dominated by multi-national enterprise and the effects that this has had on the industrial structure, a strong case could be made for this type of negotiated control and for making assistance conditional on the adherence to regional objects of a government industrial strategy.

Leigh and North (1978) reported in 1978 that the French government's system of granting development permits to multi-plant firms for investment in the Paris region only if they locate headquarter functions in the provinces had met with some success. A similar program could be established in Canada based on headquarter and innovative corporate functions. It would be highly discretionary, and provide assistance for those corporate functions in specific industries deemed able to locate in peripheral areas.

A major impediment to this approach however is what Wilkinson (1979) has termed 'provincial protectionism', which is "manifested in the requirement that companies set up small-scale plants in individual provinces in order to be eligible to bid on provincial contracts".⁷ This has led to establishment of mini-production facilities in each province with little regard for other functions. Like the foreign subsidiary-parent relationship, there is some cause to believe that the structural backwardness experienced in LDR has resulted, to some extent, from such practices.

C. Conclusions

The alternatives proposed in this chapter address the problem of technological dependence neither from a broad macro-based approach with its intent

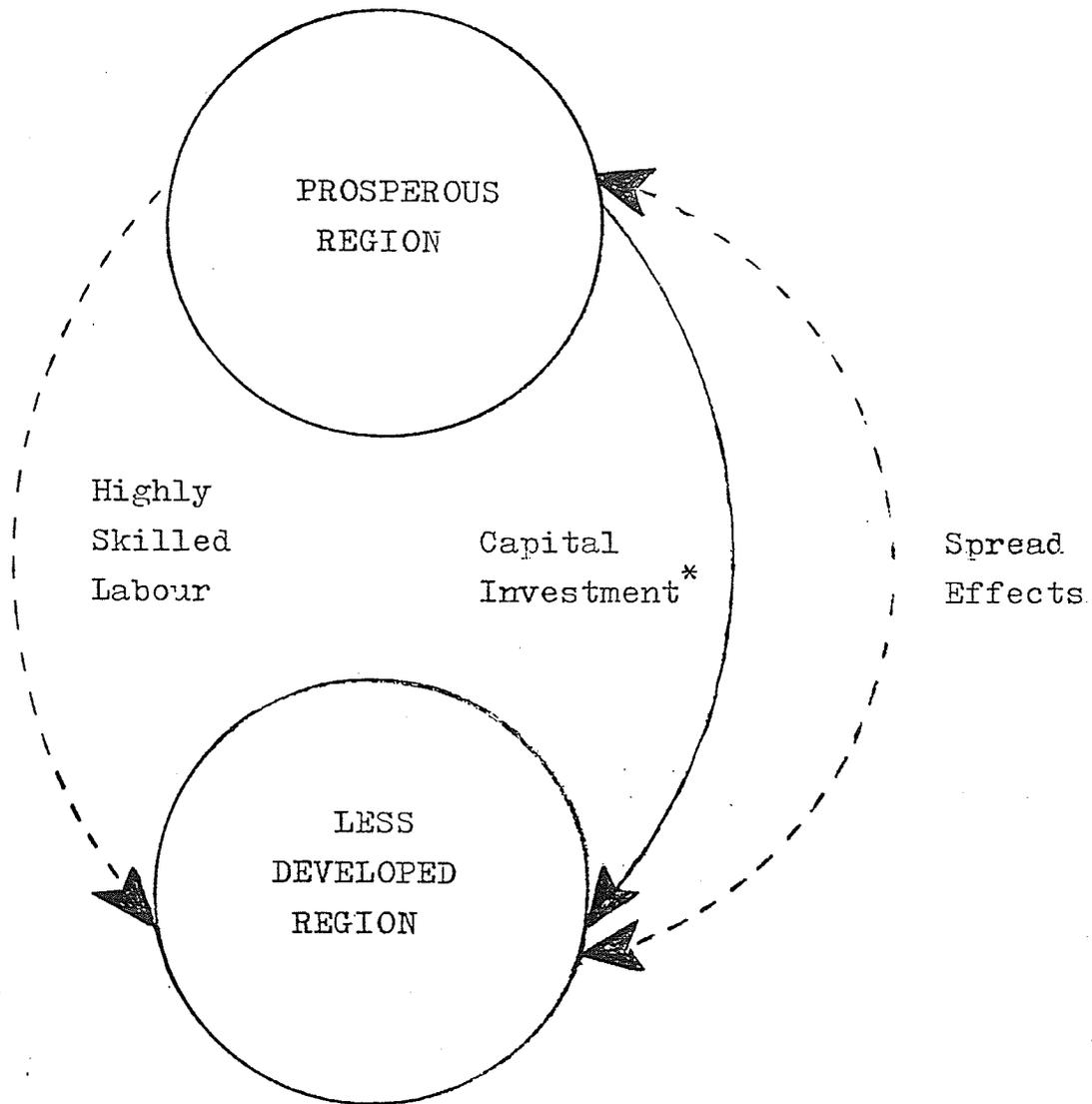


Figure 5.1 The case for decentralized higher corporate functions

* Capital investment in this case refers to the establishment of planning, R & D, administrative and management facilities.

of establishing a generalized framework on which private and public decisions concerning industry may be made, nor from a strictly micro approach where absolute methods of dealing with the industrial structure would be presented. Instead, a highly discretionary approach has been stressed, with an emphasis on both the regional implications of decentralized higher corporate functions and the ability of an industry itself to locate in LDR's. In this sense it represents a more practical approach or one more closely tied to the causes of disparity, and offers a means of improving regional economic performance.

Figure 5.1 demonstrates graphically the possible factors flows under such an approach. Capital from more prosperous regions would flow to LDR's in the form of high function corporate facilities. This would serve to retain skilled labour in the LDR and act as a source of much needed venture capital. Entrepreneurs located in relatively prosperous regions could then be stimulated to invest in LDR's and would be included in the flow of skilled labour. Spread effects, normally seen to flow in one direction from prosperous areas could now actually feedback from LDR's to the mutual benefit of all regions.

Throughout this work, the focus has been on the meso-economic sector or the large corporation as a means through which such changes could be brought about. It may be instructive therefore to discuss one particular industry from the posture of the structural problems as outlined earlier.

One often quoted method of stimulating industrial development or more recently, stimulating employment in specific industries would be to pressure foreign suppliers of high value-added goods, for example, Japanese auto-makers, to locate production facilities within the country. In a situation such as the U.S. where there exists an established network of suppliers for auto manufacturing in conjunction with a sophisticated market, this represents a viable alternative. In Canada, however, innovative auto manufacturer

suppliers do not exist because Canadian car manufacturing involves mainly the assembly of parts supplied from the U.S. network of suppliers. With fewer development and engineering functions in Canada, fewer suppliers will exist because it is the higher functions which define the technological requirements of suppliers.

Under the Canada-U.S. Automotive Trade Agreement of 1965, free trade in automobiles and auto parts was established. Overall, this has had a negative impact on the balance of payments in Canada, but more importantly it serves to illustrate the high degree of dependence on foreign-based technology. More positive effects will be realized only where higher function facilities, namely R & D and engineering are allowed to decentralize from the proximity of parent operations. In effect it would mean some loosening of the stronghold that the U.S. industry now has in these areas. Agreements such as Auto Pact then must be conditional on the establishment of such facilities in Canada before the realization of any economic benefit other than the retention of assembly line jobs will be gained.

Most recently an agreement containing such a conditional approach was discussed between the Canadian Federal Government and Chrysler Corporation. It serves as a good example of the type of negotiated control advocated in this chapter, both in terms of its economic goals and problems of implementation.

Under this proposed agreement, functionally higher facilities such as R & D were to be located in Canada. This would have allowed early growth stages in the production cycle such as product design and engineering to be undertaken in Canada rather than its limited assembly function which now dominates Canadian auto manufacturing. In turn, supply networks stimulated by innovative output could be established during the introduction and growth phases of production. This would have provided the necessary structure re-

quired to stimulate cumulative growth in this industry. This scenario however is heavily dependent on the agreement between the federal government and Chrysler, an agreement which eventually stressed the protection of production labour rather than ensuring functionally higher facilities to be relocated. Efforts by the parent corporation which initially indicated interest in locating such facilities in Canada have also been downgraded to mere Canadian involvement in such activities.* This illustrates the need for ensuring firm commitments between a corporation and the government if efforts to decentralize higher functions are to be successful.

Where regions have lost capital either to other regions or countries, the alternative has been to actively seek 'replacement' external investment. Until recently little attention was paid to the form that this investment was taking and even less to its effect on the industrial structure of the nation and the regions within it. The multi-divisional corporation is in a better position to shift resources, employment and other corporate activities between regions and therefore must receive greater attention as a medium through which national and regional industrial development strategies can be attained.

D. Summary

The recommendations put forward in this chapter and, indeed, the whole theme of the arguments presented in the thesis can be succinctly paraphrased.

The theoretical base on which regional industrial planning takes place, is heavily weighted in neo-classical economic theory and in more traditional approaches to industrial location behaviour. This has led to the development of a number of indirect planning instruments aimed at stimulating regional

* This was the position of Chrysler's parent operations according to a Winnipeg Free Press article of March 10, 1980.

growth through persuasion, infrastructure development and financial inducement to assist the individual firm. The underlying premise is that such action will serve somehow to correct for the regional disparities existing in market ordered economies. Little attention however, especially on the planning level, is given to the inherent unbalanced nature of regional growth under such a system. The causes of such unbalanced growth have formed a focal point for much of this work, especially from the posture of regional industrial development in Canada.

The dominance of the meso-economic sector over economic activity in general and its effect on the structure of Canadian industry have been neglected in regional policy and industrial development planning. Canada has in fact adopted methods of dealing with regional industrial development which are common to many western industrialized countries. Yet Canada cannot model its planning instruments or policies after those of other countries mainly because it does not share a like industrial structure and must be considered unique if truly effective policies are to be generated.

Part of the uniqueness stems from the high degree of foreign ownership present in industry in Canada. This has led to an industrial structure which is production orientated (eg., the number of production facilities are proportionately higher compared with other corporate functions) and technologically dependent. If regional industrial planning is to be effective, recognition of this 'different' industrial structure is imperative, and changes must be instituted in order to ensure that future industrial planning addresses the problem created by it.

A new direction for regional industrial planning, one which accounts for the present industrial structure in Canada, could be based on innovative and technology strategies. This could be accomplished in three different ways. Firstly, working within the existing regional and technological frame

provides an alternative for dealing with industrial structural problems. The emphasis would have to be changed from the present research dominated R & D to more development aspects and greater discretion would have to be exercised in terms of the type of industries involved in the programs. A second method would be to regionalize policies involving technological development. Different industries and different regions would be eligible for varying degrees of support depending on certain characteristics of each. This implies a highly discretionary approach to regional industrial development where the ability to distinguish between an industry's technological requirements and between different functions within any particular industry would be critical to the success of such regionalization. A final means for ensuring a basic recognition of the problems caused by the industrial structure would be the control over locational activity of meso-economic corporations. This would not take the form of strict locational constraints of specific industrial activities but would involve negotiation between the corporation and government on the possible benefits and costs to locating certain activities (higher functions) in designated regions.

E. Footnotes

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APPENDIX I

100 Largest Non-Financial Canadian Companies
(Including Foreign Operations¹),
1975/76, Ranked by Sales or Revenues
(Thousands of Dollars)

Rank	Company	Sales or Revenues	Assets	Net Income (Loss) after Taxes
1.	George Weston Limited	5,046,693	1,247,681	18,723
2.	Ford Motor Company of Canada, Limited	4,437,900	1,591,100	119,800
3.	General Motors of Canada Limited**	4,335,209	1,107,212	111,230
4.	Imperial Oil Limited**	4,047,000	2,950,000	250,000
5.	Canadian Pacific Limited**	3,651,273	6,235,832	174,863
6.	Bell Canada	2,988,116	6,588,298	266,784
7.	Massey-Ferguson Limited	2,513,302	1,982,206	94,677
8.	Chrysler Canada Ltd.	2,473,547	605,470	19,471
9.	Alcan Aluminium Limited**	2,301,453	3,011,781	22,570
10.	Dominion Stores Limited	1,913,986	262,946	20,437
11.	Canada Safeway Limited	1,877,021	436,312	34,110
12.	Shell Canada Limited	1,868,375	1,549,072	144,771
13.	Canadian National Railway Company	1,846,729	4,952,538	(57,175)
14.	Gulf Oil Canada Limited	1,701,200	1,726,500	176,600
15.	Inco Limited	1,694,768	3,025,675	186,889
16.	Simpsons-Sears Limited	1,548,600	1,050,597	32,118
17.	Canada Packers Limited**	1,453,749	310,045	21,531
18.	Steinberg's Limited	1,430,195	417,674	11,460
19.	The T. Eaton Company Limited*	1,300,000	1,150,000	39,000
20.	MacMillan Bloedel Limited	1,296,689	1,197,903	(18,943)
21.	The Steel Company of Canada, Limited	1,201,756	1,678,261	88,774
22.	Hudson's Bay Company	1,178,831	821,895	22,004
23.	Brascan Limited	1,157,451	2,247,333	95,113
24.	Noranda Mines Limited**	1,156,423	1,980,117	50,525
25.	Ontario Hydro	1,070,595	8,593,301	(60,866)
26.	M. Loeb Limited	1,048,338	150,568	3,419
27.	The Oshawa Group Limited	1,023,857	254,682	7,196
28.	Moore Corporation Limited	1,005,610	737,153	69,512
29.	The Scagram Company Ltd.	977,430	1,991,314	74,120
30.	Air Canada	957,180	1,297,628	(12,473)
31.	Hydro-Québec	922,089	7,068,285	229,750
32.	TransCanada Pipelines Limited	920,389	1,572,218	66,297
33.	Texaco Canada Limited	846,543	771,722	51,135
34.	F.W. Woolworth Co. Limited	841,834	329,622	15,332
35.	Canadian General Electric Company Limited	822,134	602,435	36,232
36.	Domtar Limited	815,221	721,368	35,288
37.	Abitibi Paper Company Ltd.	764,384	870,924	13,329
38.	Dominion Foundries and Steel, Limited	738,083	944,405	55,473
39.	Canadian International Paper Co.	725,000	550,000	50,000
40.	Genstar Limited	720,100	704,608	47,156
41.	IBM Canada Ltd.	719,327	460,422	69,817
42.	International Harvester Company of Canada, Limited	713,994	488,922	22,109

Rank	Company	Sales or Revenues	Assets	Net Income (Loss) after Taxes
43.	Mitsubishi Canada Limited**	667,349	82,899	1,391
44.	Consolidated-Bathurst Limited	643,719	662,369	32,599
45.	Burns Foods Limited	622,083	135,427	4,772
46.	The Molson Companies Limited	613,632	407,052	19,620
47.	Mitsui & Co. (Canada), Ltd.**	604,532	90,849	1,529
48.	Woodward Stores Limited	596,058	251,508	11,781
49.	Canadian Industries Limited	594,908	390,226	42,638
50.	John Labatt Limited	594,191	426,150	22,176
51.	Canadian Tire Corporation Limited	561,032	358,516	25,276
52.	Imasco Limited	559,618	364,696	29,422
53.	Simpsons, Limited	547,940	562,285	22,190
54.	The Agro Company of Canada Ltd.**	522,249	14,832	1,254
55.	Hiram Walker-Gooderham & Worts Limited	509,105	913,166	50,647
56.	S.S. Kresge Company Limited	491,290	190,179	15,704
57.	BP Canada Limited	488,351	552,500	30,480
58.	Norcen Energy Resources Limited	479,102	915,754	33,408
59.	Provigo Inc.	478,139	76,644	5,585
60.	Iron Ore Company of Canada**	472,844	845,558	(696)
61.	Canada Development Corporation	469,605	1,277,537	26,050
62.	Mobil Oil Canada Ltd.**	467,160	497,716	78,832
63.	Rothmans of Pall Mall Canada Limited	464,345	403,065	15,436
64.	Dominion Bridge Company, Limited	459,316	326,994	24,442
65.	Husky Oil Ltd.	454,391	431,548	36,018
66.	Swift Canadian Co., Limited	452,467	115,467	3,456
67.	Westinghouse Canada Limited	451,642	222,572	15,703
68.	Anglo-Canadian Telephone Company	445,007	1,578,795	23,654
69.	Falconbridge Nickel Mines Limited	429,481	763,099	3,221
70.	British Columbia Hydro and Power Authority	425,270	3,556,085	3,349
71.	Westcoast Transmission Company Limited	416,677	675,189	33,019
72.	Du Pont of Canada Limited	410,219	411,048	3,714
73.	Canada Cement Lafarge Ltd.	398,919	515,669	24,337
74.	Petrofina Canada Ltd.	396,467	520,427	32,766
75.	The Consumers' Gas Company	380,077	740,679	32,634
76.	Amoco Canada Petroleum Company Ltd.**	379,831	704,175	81,622
77.	Union Carbide Canada Limited	378,172	431,852	43,136
78.	Irving Oil Limited ²	376,905	277,716	13,815
79.	Zeller's Limited	369,891	165,260	7,078
80.	Reed Paper Ltd.	369,067	413,400	12,309
81.	Rio Algom Limited	367,382	541,115	30,032
82.	Canron Limited	365,950	182,716	13,565
83.	Hawker Siddeley Canada Ltd.	365,234	282,207	10,348
84.	Ensite Limited	363,241	204,378	14,046
85.	The Great Atlantic and Pacific Tea Company, Limited	358,536	88,032	3,146
86.	Westburne International Industries Ltd.	357,513	263,858	7,693
87.	Maple Leaf Mills Limited	354,790	148,736	10,365
88.	Ultramar Canada Limited	338,709	353,644	2,325
89.	Dow Chemical of Canada, Limited	337,000	414,000	36,000
90.	Goodyear Canada Inc.	329,229	244,938	5,187
91.	Kraft Foods Limited	320,746	111,279	11,713

Rank	Company	Sales or Revenues	Assets	Net Income (Loss) after Taxes
92.	General Foods, Limited	316,880	147,177	11,441
93.	Sun Oil Company Limited	315,018	491,118	12,396
94.	The Proctor & Gamble Company of Canada, Limited**	313,686	237,160	16,359
95.	Canadian Hydrocarbons Limited	301,200	214,101	6,860
96.	Crown Zellerbach Canada Limited	296,362	290,149	13,270
97.	Canadian Fuel Marketers Ltd.†	295,107	133,592	2,612
98.	Power Corporation of Canada, Limited ³	293,104	579,341	32,164
99.	Pacific Petroleum, Ltd.	288,040	639,940	57,267
100.	Standard Brands Limited**	279,994	167,671	9,806

Sources: - Unless otherwise indicated (see sources listed below), the figures come from *Financial Post*, "The Financial Post 300" (Summer 1976).

* - Estimates, based on Royal Commission on Corporate Concentration (RCCC) research.

** - *Canadian Business*, "The Top 200 Plus the Next 200 of Canada's Largest Companies" (July 1976).

† - Figures come from the information given by the company to the RCCC.

- Sales and assets of Crown corporations come from the *Public Accounts of Canada*, vol. III (1976); *Public Accounts of British Columbia* (fiscal year ended March 1975); *Ontario Public Accounts, 1975-76*, vol. II; *Financial Statements of Quebec Government Enterprises, 1975-76*.

Notes: ¹Includes foreign operations of Canadian-owned companies but not non-Canadian operations of the parent companies of foreign-owned subsidiaries operating in Canada.

²Irving Oil Limited is controlled by the Irving family, which also controls a number of Canadian firms through holding companies. If the assets of all these firms were included, we estimate the combined Irving companies would rank among the top 30 on our list.

³Figures for Power Corporation of Canada, Limited, do not include financial subsidiaries.

APPENDIX II

25 Largest Canadian Financial Institutions,
1975/76 Ranked by Assets
(Thousands of Dollars)

Rank	Company	Total Assets	Net Income after Taxes
1.	The Royal Bank of Canada	25,211,131	86,742
2.	Canadian Imperial Bank of Commerce	22,259,053	93,943
3.	Bank of Montreal	18,242,634	81,135
4.	Bank of Nova Scotia	16,005,998	64,702
5.	The Toronto-Dominion Bank	13,576,569	59,610
6.	Banque Canadienne Nationale	4,871,971	16,157
7.	Sun Life Assurance Company of Canada	4,699,301	N/A
8.	The Royal Trust Company	3,435,709	18,945
9.	The Manufacturers Life Insurance Co.	3,083,250	N/A
10.	La Banque Provinciale du Canada	3,059,145	8,192
11.	Canada Permanent Mortgage Corporation	2,726,390	14,358
12.	The Huron & Erie Mortgage Corporation and The Canada Trust Company (Canada Trustco Mortgage Company)	2,626,301	14,079
13.	London Life Insurance Company	2,392,256	7,422
14.	IAC Limited	2,390,847	30,450
15.	The Great-West Life Assurance Company	2,348,819	22,785
16.	The Canada Life Assurance Company	1,887,429	N/A
17.	The Mutual Life Assurance Company of Canada	1,781,723	N/A
18.	Confederation Life Insurance Company	1,485,332	6,423
19.	General Motors Acceptance Corporation of Canada Ltd.	1,308,299	9,483
20.	Victoria and Grey Trust Company	1,295,556	8,335
21.	The Mercantile Bank of Canada	1,288,163	8,902
22.	Crown Life Insurance Company	1,204,809	5,453
23.	National Trust Company, Limited	1,162,975	7,427
24.	Guaranty Trust Company of Canada	1,086,179	1,863
25.	North American Life Assurance Company	1,023,800	15,597

Source: "The Top 200 Plus the Next 200 of Canada's Largest Companies," *Canadian Business* (July 1976).

Note: N/A = Not applicable to mutual life insurance companies.

APPENDIX III

Twenty Canadian Manufacturing Industries with the Highest Four-Firm
(Value-of-Shipments) Concentration Ratios, 1972

<u>Rank 1972*</u>	<u>Industry</u>	<u>Number of Enterprises</u>	<u>CR₄</u>
1.	Cotton yarn and cloth mills	9	97.5
2.	Tobacco products manufacturing (6)	11	97.1
3.	Glass manufacturing	9	97.0
4.	Breweries (1)	7	96.5
5.	Fibre and filament yarn manufacturing	7	93.8
6.	Cane and beet sugar processing	7	93.7
7.	Aluminum rolling, casting and extruding (8)	55	89.0
8.	Wood preservation industries (7)	19	87.1
9.	Miscellaneous vehicle manufacturing (11)	35	86.6
10.	Abrasives manufacturing (15)	17	86.2
11.	Manufacturing of lubricating oil and greases (5)	14	85.9
12.	Cement manufacturing	8	83.7
13.	Office and store machinery manufacturing	30	82.7
14.	Copper and copper alloy rolling, casting and extruding	45	81.9
15.	Distilleries (12)	14	79.7
16.	Battery manufacturing (14)	16	79.3
17.	Manufacturing of electrical wire and cable	17	79.2
18.	Clock and watch manufacturing	18	79.0
19.	Smelting and refining	14	78.6
20.	Typewriter supplies manufacturing	11	78.3

Source: RCCC research.

APPENDIX IV

FEDERAL GOVERNMENT R & D ASSISTANCE PROGRAMS

- 1) Industrial Research and Development Incentives Act. (IRDIA). This allows tax concessions on R & D related activity, cash grants for R & D and credits against Federal Income Tax.
- 2) Industrial Research Assistance Program. (IRAP). Under this program up to fifty percent of the costs for a research staff employed in projects of scientific and technological innovation is paid for by the Federal Government.
- 3) Program for the Advancement of Industrial Technology. (PAIT). This program assists industry in upgrading production techniques and in the engineering costs involved through a series of grants and loans.
- 4) Program to Enhance Productivity. (PEP). This allows grants of up to fifty percent of the cost for studies undertaken to increase productivity.

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