

THE ROLE OF THE TOURIST INDUSTRY IN REGIONAL
DEVELOPMENT PLANNING: THE CASE OF HECLA
PROVINCIAL PARK IN THE INTERLAKE AREA OF
MANITOBA

by

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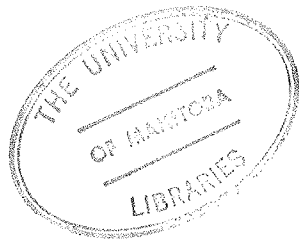
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ABSTRACT

Depressed regions, characteristically displaying higher than average rates of unemployment, lower than average per capita incomes and substantial net emigration, are often the recipients of considerable amounts of government assistance aimed at improving their socio-economic situation. In attempting to influence the economic development of these regions, planners must explore all available policy alternatives. One particular policy area which has been largely ignored in regional development planning is the potential economic benefits to be gained from active promotion of the tourist industry. Deciding on the relative merits of such a policy requires that planners be able to give adequate measure of the actual or potential effects arising from tourism and other policy alternatives.

In light of the above it is hypothesized that: (1) active promotion of the tourist industry as a means of regional development planning can have significant beneficial effects upon the economy of a region, and; (2) these regional economic effects can be accurately measured through application of a technique referred to as Economic Based Analysis. In order that conclusions might be drawn regarding these hypotheses, the various aspects of the tourist industry, Cost-Benefit Analysis and Economic Base Analysis are explored by means of a literature review. An empirical study of the regional economic effects of Hecla Provincial Park in the Interlake Area of Manitoba is

presented as a means of testing the two stated hypotheses.

Application of Economic Base Analysis to the results of a survey of visitor expenditure reveal that the local expenditure of visitors to Hecla Provincial Park during the 1978 summer season (\$885,810) was responsible for an estimated \$1,257,850 in total gross income, and supported employment of approximately 26.5 man-years. With a few reservations the two stated hypotheses of this thesis are found to be upheld.

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I dedicate this thesis to my parents (Sybil E. Bentham and Robert Bentham) as well as my wife (Norma M. Bentham) without whose love and support I would never have had the strength to finish this project.

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I. INTRODUCTION

A. Statement of the Problem

Depressed regions, characteristically displaying higher than average rates of unemployment, lower than average per capita incomes and substantial net emigration, are often the recipients of considerable amounts of government assistance aimed at improving their socio-economic situation. The nature of this government assistance is dependent upon certain perceived regional and national, economic and social objectives. Policies aimed at achieving specified objectives involve artificially stimulating the declining economy of a region through incentives to industries willing to locate there, and/or promoting outmigration as a means of making people better off more quickly.' Deciding among policy alternatives is a necessary, but frequently difficult task. It is the responsibility of planners (and ultimately politicians) to insure that adopted policies will achieve optimal results. In meeting this responsibility, planners must be aware of available options and must be able to give adequate measure of the actual or potential effects arising from various alternatives.

Herein lies what can be regarded to be two major problem areas in the field of regional development planning. First, it is apparent that not all viable policy alternatives are always considered. One particular area

'Smith, D.M., Industrial Location, (New York: Wiley, 1971), p. 447.

which has been largely ignored in regional development planning is the potential of the tourist industry in solving the economic problems of depressed regions. Tourists (visitors) spend "foreign" dollars in purchasing local output and this money is recirculated in the regional economy through consecutive rounds of spending. The economic effects of this expenditure could therefore potentially be substantial. If the viability of tourism as a policy tool in regional development planning can be proven, it is plausible that its acceptance in the field would be widespread.

The second major problem area in the field of regional development planning is that adequate measures of the effects of policy alternatives are often lacking given the frequent time and budget constraints faced. Methodologies which yield accurate results within specified constraints could significantly improve the quality of resultant policies. One such methodology which may have potential in this regard is Economic Base Analysis. In simple terms, the economic base model assumes that the regional economy is divided into two sectors: the base, or export sector, and the service sector. It is postulated that if the relationship between these two sectors is known and assumed constant, the effect of growth in one sector, on the total regional economy, can be calculated. This approach could therefore be used as a measure of the regional economic effects of policies aimed at encouraging growth in one sector.

Investigation of the two main problem areas discussed above forms the subject of this thesis. Two hypotheses are put forth in structuring this investigation.

B. Statement of Hypotheses

It is the intent of this thesis to provide the information necessary in drawing certain conclusions regarding two basic hypotheses. It is hypothesized that:

- (1) active promotion of the tourist industry as a means of regional development planning can have significant beneficial effects upon the economy of a region, and;
- (2) these regional economic effects can be accurately measured through the application of economic base analysis.

C. Organization of the study

In order that conclusions might be drawn regarding the above hypotheses it is necessary to first present an overview of the information basic to the tourist industry and the field of impact analysis. This overview makes up chapters two through four and is basically a "state of the art" summary of the information contained in available literature.

Chapter two presents a discussion of the basic information necessary to drawing certain conclusions regarding the utility of the tourist industry as a tool in

regional development planning. Discussion centres on the possible impacts of a tourist industry on a local area. It is the strength of positive impacts that ultimately has bearing on the conclusions drawn regarding the utility of the tourist industry as a policy tool in regional development planning.

Chapters three and four present a discussion of the basic information necessary to drawing certain conclusions regarding the utility of economic base analysis in measuring the economic effects of the tourist industry. Chapter three outlines the principles and practices of cost-benefit analysis with specific reference to the tourist industry. Essentially, this analysis is shown to incorporate a wide variety of techniques in valuating both the benefits and costs resulting from regional development projects. Unfortunately, in the realm of public investment decision-making, constraints often limit the extent to which indepth analysis is carried out. The introduction of techniques which work within constraints will do much to further the optimization of decisions made. It has been proposed that economic base analysis is one such technique. Chapter four presents a comprehensive discussion of the economic base technique.

Chapter five presents an empirical study of the economic effects of a tourist industry, implemented as part of a regional development plan. The study employs economic base analysis in looking at the impact of visitor

expenditure in and around Hecla Provincial Park in the Interlake Area of Manitoba. It is intended that the results of this case study and the information presented in chapters two through four will enable the drawing of conclusions concerning the two stated hypotheses of this thesis. These conclusions are presented in chapter six.

II. THE POSSIBLE IMPACTS OF A TOURIST INDUSTRY ON A LOCAL AREA

A. Introduction

As noted in the introduction to this thesis, one way by which governments can improve the economic structure of depressed regions is to encourage efficient resource utilization. Examination of available literature points out that an increasingly popular form of resource utilization in depressed regions is tourism and recreation development. It is characteristic that depressed regions suffer from a shortage of resources traditionally viewed as being "economically attractive". As a result, programs aimed at economic development must attempt to make the best use of what is available. Tourism and recreation often fit this bill.

Although definitions of tourism tend to vary, most include components such as pleasure travel, expenditures of money during travelling and more than a short stay. Similarly, recreation is defined in many ways, but most definitions include such components as activity engaged in during leisure, activity for pleasure and enjoyment or activity that enriches the lives of people.'

It would appear that there is a widespread societal trend towards increased time and budget allocations for

'Gunn, L.A., "Tourism-Recreation-Conservation Synergism", Contact, vol. 8, no. 4, 1976, pp.130-131.

leisure pursuits.² When considered in conjunction with trends towards increased mobility, it is perhaps not surprising to find governments actively promoting tourism and recreation as a means of improving the economic structure of regions which lag behind in general development. Tourism and recreation development is now of such economic significance "that states, provinces, and countries cherish it and undeveloped nations seek it."³

However, while there is little doubt that tourism and recreation (hereafter referred to as the tourist industry) form an important force in economic development, there has been continuing debate concerning the nature of the related impact. "Because tourism is a diffuse and heterogeneous industry characterized by a high degree of geographic dispersal"⁴, it is difficult to analyze in terms of its impact and comparative advantage. Nevertheless, as will be expounded in this chapter, it is possible to infer the more qualitative aspects of the impact of tourism and recreation through an examination of the beneficiaries of the "industry".

In order to do so, some preliminary notions need to be established. First, it is necessary to identify the product

²Claswon, M., "How Much Leisure Now and in the Future", in Fischer, D.W., et.al, Land and Leisure: Concepts and Methods in Outdoor Recreation, (Chicago: Maaroufa Press Inc., 1974), pp.6-8.

³Gunn, L.G., op. cit., p.130.

⁴Coppock, J.T., and Duffield, B.S., "The Economic Impact of Tourism - A Case Study in Greater Tayside", Tourism as a Factor in National and Regional Development, (Peterborough: Trent University Press, 1975), p.26.

of the tourist industry as services for export.⁵ Insofar as this is the case, the beneficiaries of the tourist industry can then be seen to be those firms and establishments which supply the necessary goods and services. However, this is not to say that the beneficiaries of the tourist industry must necessarily be members of the industry itself. Rather, members of the industry are merely the "direct" recipients of tourist expenditure. In addition, this expenditure tends to be diffused throughout the rest of the economy, through a process which will be discussed at greater length at a later point in this chapter. For now however, the point to be made is that the beneficiaries may be classified in two main ways: "according to the relative importance of tourism to their business, and according to the directness of receipts."⁶

When considering the relative importance of tourism to a business, a distinction can be made between "primary" and "secondary" tourist enterprises. Primary tourist enterprises can be seen to be exclusively or principally dependent upon tourism for their business, and include many hotels and restaurants, most travel agents, special manufacturers and retailers of souvenirs, and so on. Conversely, secondary tourist enterprises are those only partially dependent on tourist business, but which, for the most part, derive their income through serving the needs of the resident population.

⁵Lundberg, D.E., The Tourist Business, (Boston: Cahners Books, 1974), p.137.

⁶Burkart, A.J., et.al., Tourism: Past, Present and Future, (London: Heinemann, 1974), pp.61-62.

Included under secondary tourist enterprises are banks, laundries, retailers, transporters, etc..'

As previously alluded to, the second main way of classifying the beneficiaries of tourist expenditure is based on whether the enterprise is a direct or indirect recipient of tourist expenditure. Direct recipients, receiving visitor spending from the tourist himself, include hotel and restaurant services, transport, retailing, entertainment and a wide range of other services. Conversely, indirect recipients benefit from tourist expenditure as a result of the "consequent diffusion of receipts by the initial (direct) recipients."° Insofar as this is concerned, farmers, builders, the suppliers of public utilities, and so on through acting as suppliers of goods and services may never be directly involved in supplying the tourists themselves.

In summary, the two main approaches to classifying the beneficiaries of tourist expenditure provide some useful insights for the study of the economic impact of tourism. The primary - secondary dichotomy assists, at a conceptual level, in identifying those sectors of the economy which derive the initial and probably most important impact from tourism. On the other hand, the direct-indirect dichotomy

 °Richards, G., Tourism and the Economy: An Examination of Methods for Evaluating the Contribution and Effects of Tourism in the Economy, (Surrey: University of Surrey Press, 1972), p.38.

°Burkart, A.J., op. cit., p.62.

"has greater analytical potential since it draws attention to an important characteristics of the process by which activity in the particular sector or industry transmits stimuli to the rest of the economy, via the indirect repercussions of the initial expenditure on other industries."'

In examining the impacts of tourism, the obvious need is to measure economic benefits. With this in mind, this chapter will consider possible impacts (positive and negative) of tourism on income, employment, entrepreneurship, investment, and foreign-exchange. However, of perhaps equal importance are the various social, cultural, and environmental changes which can take place in response to increasing tourist traffic in an area. This type of impact will also be discussed below.

B. Income

The tourist industry has made a particularly substantial economic impact upon a large number of countries and regions which can be classified as developing or underdeveloped. This impact is of particular importance to these regions, for tourism represents a much sought after complement to the development of other sources of income and employment where resources and market constraints severely limit the potential for manufacturing enterprises. Many of the islands of the Caribbean exemplify this form of

'Richards, G., op. cit., p.39.

development. "Tourism is a major creator of income and employment throughout the Caribbean, and has superseded agriculture as the main support of the economy in the islands of Antigua, Barbados, and the Virgin group."¹⁰

To determine the nature and magnitude of the impact of tourism on income in the various sectors of the economy, it is necessary to know not only total tourist expenditures, but also expenditure patterns.¹¹ Although actual outlays vary greatly, there is generally a high degree of consistency in the percentage distribution of tourist expenditures. Excluding travel costs, food and accommodation usually receive 60% to 75% of tourist's expenditures. The balance is spent on excursions, entertainment, shopping, etc.. Travel costs as a percentage of the total holiday cost, vary from 20% (ie. automobile travel) to 60% (ie. air travel), with air travel usually having the least economic impact on the destination area.¹²

Examination of the above mentioned breakdown of initial tourist expenditure yields information concerning the primary beneficiaries of the positive impact of tourism on income. However, initial expenditure provides only a broad indication of the total income effects of tourism.

Information is also needed on the diffusion of the flow of money generated by tourist expenditure throughout the

¹⁰Pollard, H.J., "Tourism: The Growth Industry of the Caribbean", Geography, vol. 61, 1976, p.106.

¹¹Beyers, W.B., "Impacts of Tourist Consumption Functions," Annals of Regional Science, vol. 5, no.1, 1971, p.116

¹²I.B.R.D., Tourism, (Washington: World Bank Group, 1972), pp.8-9.

overall economy of the tourist destination, as the money is spent and re-spent. In order to demonstrate the full benefits of tourist expenditures to the economy, recourse must be made to the "multiplier".¹³ The regional income multiplier formula is basically an attempt to accumulate all the income generation resulting from the chain reaction of a series of transactions, and to express this total as a fraction of the initial exogenous expenditure.¹⁴

It is important to note that total expenditures, however they may be defined or measured, do not all accrue as net income to the local area. Rather, much of the gross income is sent outside the area in the repatriation of profits and savings, or in order to purchase those commodities necessary to service travellers, and to provide facilities. However, despite these "leakages", some of the income is used to purchase local output, and pay wages, salaries, profits, interest, and rents to members of the local community.¹⁵

A portion of that money which remains in the local area is then saved, invested, or spent by those who receive it, in order to purchase goods and services which are in part produced locally and in part imported into the area. Such expenditure, by those who receive money directly from recipients of the original exogenous expenditure, is said to

¹³Peters, M., International Tourism: The Economics and Development of the International Tourist Trade, (London: Hutchison and Co., Ltd., 1969), p.241.

¹⁴Coppock, J.T., and Duffield, B.S., op.cit., p.27.

¹⁵Clawson, M., Economics of Outdoor Recreation, (Baltimore: J. Hopkins, 1966), p.239.

take place in the "second round of spending". Other rounds of spending then follow. As this money continues to change hands, each successive round is characterized by a smaller amount of the original exogenous expenditure accruing as local income because of the withdrawal associated with savings, investment, and the need to pay for goods and services imported from outside the local area. As previously alluded to, the result of these expenditure patterns is commonly referred to as a "multiplier process". It is this process which allows quantification of the direct - indirect beneficiary dichotomy as earlier discussed.

Income from tourism and recreation can be seen to represent injections of "fresh" dollars into a regional economy. As a result, the effect on the local economy can be substantial as the money is spent and re-spent, bringing the sum total of generated incomes to an amount greater than the original direct tourist expenditure. However, the magnitude of the sum total of generated incomes depends not only on the size of the initial expenditure, but also on the size of the multiplier. The size of the multiplier depends on how much of the original income is re-spent at each stage. This is in turn dependent upon the region's economic base. Regions which are reasonably self-sufficient economically, will be characterized by relatively high multipliers.

As mentioned previously, the regional income multiplier points out one of the major problems of tourism and recreation as a means of development in developing or

underdeveloped regions. This is, "that the so-called multiplier effect of tourism is reduced to a lower level than would be expected in larger, or more developed economies,"¹⁶ because of the characteristically high "import propensity" of the tourist dollar in the less developed regions. This import component of tourist expenditure leaves the region in order to purchase operation supplies such as foods and beverages, specialized management services, equipment and a major part of construction materials, and even entrepreneurial investment. The end result is that net earnings from tourism as a percentage of gross earnings often becomes very small.

The magnitude of the importation problem becomes greater when one considers the "demonstration effect" on the local population created when residents of the tourist destination come into contact with superior goods and spending patterns. "The knowledge of, or contact with, superior consumption patterns extends the imagination and creates new wants."¹⁷ A certain tension and restlessness among residents is created, as they find themselves spending a higher percentage of their incomes in an attempt to enjoy even a few of the things tourists appear to enjoy in abundance.¹⁸ Naylor found this to be the case in Spain. ¹⁹

¹⁶Pollard, H.J., op. cit., p.106.

¹⁷Nurkse, R., Patterns of Trade and Development, (Stockholm: First Wicksell Lecture, 1959), p.264.

¹⁸Samuelson, P.A., Economics, (New York: McGraw-Hill Inc., 1961), p.787.

¹⁹Naylor, J., "Tourism: Spain's Most Important Industry," Geography, vol.52, no.1, 1967, p.34.

A final point to be considered with respect to the income effects of tourism is concerned with the possible transfer of employment from some sector of the economy into the tourist industry. If this transfer involves a downward shift in the Average Productivity of Labour, then output will fall for the same labour input. The result will be a decrease in regional income.

In summary, demonstrating the ultimate income-generating potential of establishing a tourist industry requires an examination of the nature of expenditures by tourists, and a quantification of the multiplying effects of these expenditures. Work of this nature, as carried out by Jewett in analyzing the impact of Redwood National Park on the coastal economy of northern California, suggests that apart from households, and local governments, the main beneficiaries of tourist expenditure are the trade and service industries. Linkages with manufacturing are seen to be very slight.²⁰ This is perhaps due to the nature of the region's economic base which is in turn influenced by a lack of available resources and an inability to compete with external producers. The net effect of limited potential for manufacturing enterprises is often large scale importation.

²⁰Jewett, F.I., "The Impact of a National Park Upon a County's Economy," Annals of Regional Science, vol.2, no.2, 1968, p.281.

As in many underdeveloped regions, the importation of a large number of necessary commodities can be seen to limit the degree to which tourist spending recirculates within the economy. In addition, tourism can have undesirable consequences insofar as income "demonstration", and transferring of employment is concerned. However, to generalize about the magnitude of these undesirable consequences is a gross oversimplification of the processes at work. Tourism can have a substantial impact on a region's income, given a favourable economic base, standard of living, etc..

C. The Value of Land

The effect tourism can have on local land values operates in conjunction with the possible impact of tourism on regional incomes. As tourists express interest in a given destination, investment in the local tourist industry usually takes place. This investment increases the demand for land and thus drives up land values.

On the one hand, the driving up of land values can be seen to form an important source of income to local builders, contractors and real estate agents.²¹ For land owners, returns from capital gained in the sale of land are often higher than any feasible returns from the land. However, increased land values can also have detrimental

²¹Archer, B., The Impact of Domestic Tourism, (Cardiff: University of Wales Press, 1973), p.7.

farmers to sell their land for a large profit. The farmer can be left landless with only his money to console him. The result can be resentment. A similar case concerns those income groups which can no longer afford to buy or own their own land. They too feel resentment.

In addition to the above mentioned socio-economic problems originating out of a lack of income (both real and psychic), land-use conflicts often arise between tourism, recreation, and conservation interests on the one hand and other economic interests (e.g. manufacturing, housing, and agriculture) on the other.²² If a region actively promotes tourism in attempting to fulfill development objectives, then there is a need for more land being devoted to facilities and public access. However, this raises the problem of allocating scarce resources in the most "equitable and aesthetically satisfying way."²³ This involves complex analysis (ie. cost-benefit analysis) and highly responsible decision-making cognizant of the wishes of the populations most concerned.

D. Employment

As stated earlier, tourism can be seen to create employment opportunities. Employment-wise, tourism is "particularly important for areas with limited alternative sources of employment, as is often the case in non-industrial areas deficient in natural resources other

²²Gunn, L.A., op.cit., p.133.

²³Burkart, A.J., et.al., op.cit., p.67.

than climate and scenic attractions."²⁴ Further, investment cost per job created in the tourist industry is estimated to be lower than in any other sector of the economy.²⁵ Thus, in view of the desire to create employment it is perhaps not surprising to find countries such as Algeria opting for development of a tourist industry in the less favoured economic regions, for many of these have been blessed with coastlines and oases.²⁶

In considering the impact of tourism as an employer of labour, problems in defining the industry become apparent. First, it is difficult to distinguish between those individuals employed mainly for the purpose of serving the tourist, and those individuals employed in the same or similar activities but not concerned with tourism. Second, employers, or self-employed individuals are rarely covered in statistics on employment. This omission may represent a significant proportion of total employment insofar as the tourist industry is usually comprised of many small units. Finally, as will be discussed later, the seasonal nature of the tourist industry causes great variation in employment figures within any one year. The net result of these data problems is to limit the present appraisal of the significance of tourism as an employer to only tentative findings.²⁷

²⁴Ibid. , p.61.

²⁵Lundgren, J., "Barbados Tourist Industry," Revue De Tourisme, no.4, 1968, p.138.

²⁶Blake, G.H., and Lawless, R.I. "Algeria's Tourist Industry," Geography, vol. 57, no.1, 1972, p.152.

²⁷Burkart, A.J., op.cit., pp.60-61.

A recent study of tourism in Switzerland has suggested that such information problems as those mentioned above can be at least partially side-stepped. By utilizing only peak season employment data, the study concluded that on average, about one-half of total employment in tourism is accounted for by accommodation establishments. On the assumption that this represents a reasonable approximation of the actual percentage, total employment in tourism for any country can be roughly calculated simply by determining employment in accommodation establishments. However, the major shortcoming of such an approach is the uncertainty of the percentage of accommodation facilities solely devoted to tourism.²⁸

Without accurate figures, the true impact of tourism on employment generation can only be approximated. This approximation can be made through the use of a regional employment multiplier which accumulates the employment generated as a result of tourist expenditure.²⁹ For example, Archer's work in Anglesey produced a regional employment multiplier of 1.11, signifying that .11 indirect jobs were created for every direct job. Further, it was found that 4.3 primary jobs were created for every £10,000 of tourist expenditure. Applying the regional employment multiplier to this figure, it was found that approximately .49 secondary jobs were created as the income multiplier worked its way through the regional economy. Thus, the overall employment effect of £10,000 of tourist expenditure was the creation of

²⁸ Ibid., p.61.

²⁹ Coppock, J.T., and Duffield, B.S., op.cit., p.27.

4.79 jobs. This was then found to compare "very favourably with employment generation by other forms of expenditure. For example, £10,000 of general spending in Anglesey generated 1.9 direct jobs and 0.49 indirect jobs."³⁰

Tourism is found to generate substantially more employment based on gross earnings than does the gross earnings from other economic sectors largely owing to the high degree of labour-intensiveness characterizing the tourist industry.³¹ However, labour-intensiveness and the degree of employment generation are dependent upon the nature of the tourist activity. Caravan development is seen to generate very little employment. On the other hand, hotels, as the main recipients of tourist expenditure, are usually thought to be particularly labour-intensive insofar as they provide high standards of personal service. Further, hotels are seen to generate indirect employment opportunities through the purchasing of food, drink, and manufacturing goods, and laundry, maintenance, and financial services.³² Thus, for the most part, tourism is thought to be a prime creator of employment opportunities because it is relatively labour-intensive.

However, the World Bank Group has found that although it is often claimed that tourism is relatively

³⁰Archer, B., "The Impact of Recreation on Local Economies," Planning Outlook: Special Issue, 1974, pp.24-25.

³¹Jones, Jr., J.F., Tourism as a Tool for Economic Development with Specific Reference to the Countries of Jamaica, Trinidad and Guyana, (Miami: University of Florida Press, 1974), pp.271-272.

³²Pollard, H.J., op.cit., p.106.

labour-intensive, available evidence is not conclusive on this point. They have found that "studies in Mexico and Kenya suggest that the relative amount of employment generated for each unit of capital invested has tended to be higher in tourism than in most other private sector activities. However, similar studies in Yugoslavia and Isreal, carried out by the United Nations Conference on Trade and Development (U.N.C.T.A.D.) Secretariat, were far less conclusive."³³

Whatever the case, it is likely that less labour will be needed to service a given number of tourists in the future due to changes in management techniques, the growth of hotel chains, the increasing size of the newly built hotels and the apparent trend towards visitor's acceptance of lower levels of service.³⁴ Further, even if it is conceded that the tourist industry is in some cases relatively labour-intensive, the Turkish experience indicates that expansion of capacity in this sector is rather capital intensive and suggests that capital may replace the labour factor in the tourist industry of the future. Thus, tourism is perhaps not a very efficient means of creating employment.³⁵

In many tourist destinations, as is the case in Turkey, the employment effects of tourism seem disappointing. On the

³³I.B.R.D., op.cit., p.13.

³⁴Young, G., Tourism: Blessing or Blight?, (Harmondsworth: Penguin, 1973), p.116.

³⁵Diamond, J., "Tourism's Role in Economic Development: The Case Re-examined," Economic Development and Cultural Change, vol.25, no.3, 1977, p.552.

one hand, the average person employed in the tourist industry is not highly skilled. This seems to suggest that the industry is readily adaptable to underdeveloped and developing regions and countries, for it is in these areas that a surplus of unskilled labour most often exists. However, on the other hand, many of these areas have suffered as a result of responding to too much tourism too fast by importing alien workers or taking labour from other industrial sectors (e.g. agriculture) possibly leading to a shortage of employment in those sectors.

Domestic labour in the tourist industry requires a number of years to create a labour force skilled in the art of presenting a feeling of genuine hospitality. As in the case of the Virgin Islands, native labourers very often tend to shun the menial hotel jobs and seek employment in white collar positions. Those that are working in the industry can be seen to lack enthusiasm and very often have gained a reputation for indifferent service and lack of hospitality. As a result, such regions have attempted to meet the service needs of the tourist industry through the importation of alien labour.³⁶

For the most part however, the degree of labour importation which takes place is dependent upon the skills of labour available in the region. Where the local labour force is largely unskilled, it is very often the policy of the tourist industry to import skilled workers rather than

³⁶Patterson, W.D., The Big Picture: Travel, (American Society of Travel Agents, 1973), pp.54-55.

train local people for anything more than menial tasks.³⁷ This is particularly the case for managerial and other high status jobs.

The Turkish experience suggests that "not only does tourism require types of labour in short supply, but the work tends to be seasonal and low paid."³⁸ Insofar as tourism is, to a considerable extent, a seasonal activity, resultant fluctuations in regional employment levels can severely limit the beneficial economic effects experienced by a region pursuing development of a tourist industry. As Jewett noted in analyzing the impact of Redwood National Park on the coastal economy of Northern California, although tourist development "may well provide an annual boost to the county's economy, it will not provide what the county needs most; a growing source of year-round employment."³⁹ Indeed, employment such as is required to service the tourist industry, can often lead to a threatening of the local employment structure.

Once more however, the results of studies looking into the effects of seasonality on employment levels are not conclusive in their findings. Beyers, in analyzing the impact of Mount Rainier and Olympic National Parks, finds that "while the seasonality of tourist expenditures may create economic fluctuations in certain rural regions, these

³⁷Teye, V., "Some Socio-Economic Implications of Tourism Development in Developing Countries: The Ghanaian Case", (Unpublished M.A. Thesis, University of Manitoba, 1980), p.148.

³⁸Diamond, J., op.cit., p.552.

³⁹Jewett, F.I., op.cit., p.284.

effects may be related to a minority of the total volume of tourist expenditures."⁴⁰ He points out that usually only a small share of the total expenditures made by tourists are actually made in, and in close proximity to, the tourist destination. Most expenditures can be seen as being made at the tourist's point of origin, en route, and in the major metropolitan areas near the Parks. If this is actually the case, then the widespread distribution of tourist expenditure in space, particularly into metropolitan regions with other sources of income, would tend to reduce the importance of the "overall" seasonal impact of Park visitor expenditure.⁴¹

Thus, in summary, it is difficult to reach any conclusions as to the actual effect of tourism on a local labour force. Various studies have observed that tourism can encourage servility in the labour force, a lower productivity potential of work in the tourist industry, and the importation of alien skilled labour. However, on the positive side, the regional employment multiplier points out that employment generation from tourism compares very favourably with employment generation by other forms of investment. As a result, tourism is thought to be particularly important for areas with limited alternative sources of employment. However, as previously alluded to, problems of acquiring and interpreting data limit the

⁴⁰Beyers, W.B., op.cit., p.115.

⁴¹Ibid., p.115.

ability to draw any overall conclusions.

E. Entrepreneurship

As previously alluded to, it has been clearly demonstrated that tourism has beneficial effects for a wide range of entrepreneurial opportunities in regions which would otherwise be unattractive in terms of profit potential. In a direct sense, the export of the tourism "product" creates the necessary demand for a great deal of entrepreneurial investments, including the construction and maintenance of tourism facilities (hotels, resorts, etc.). Further, tourism provides a demand market for local handicrafts and light industrial products of the local economy (eg. furniture, textiles, and food stuffs). The demand for these commodities supplements the domestic demand to the point that local manufacture of many of these products becomes economically feasible long before an economy devoid of tourist impetus could afford to produce such goods.

Hence, tourism creates demand, and thus sets the stage for entrepreneurial investment. Such investment is highly favoured among entrepreneurs for two main reasons. First, tourism is seen to be attractive from the point of view of would-be investors, insofar as the relative shortness of the gestation period before an investment yields returns is concerned. In other words, tourism, as a profit-making

proposition, can be seen to go to work fast.⁴² Second, "compared with competing claims for investment, the tourist industry requires relatively little direct capital investment in relation to the cash flow generated."⁴³

Thus, the many faceted tourist industry is very attractive to would-be investors. Moreover, from the point of view of the host country or region, entrepreneurial investment in tourism has brought rising employment, expanding incomes, and, as will be later discussed, a wide range of other benefits. Further, as the Florida case points out, the establishment of a permanent service sector through investment in tourism development offers a basis for further development.⁴⁴ In this manner, investment in the tourist industry "paves the way" for economic diversification. This has been the case in Spain where observers have referred to tourist development as an "economic miracle", and go on to forecast that "the Spanish economy will be the most expansive in Europe in the next few years."⁴⁵

In assessing the merits of tourism development as an avenue of entrepreneurial investment, it must be remembered that the tourist business can be a hazardous undertaking. The tourist industry can be highly vulnerable to such things as fashion, fluctuations in the business cycle (and thus,

⁴²Teye, V., op.cit., p.28.

⁴³Peters, M., op.cit., p.32.

⁴⁴Harpers, R.A., et.al., "Recreation Based Economic Development and the Growth Point Concept," Land Economics, vol.42, 1966, p.99.

⁴⁵Naylon, J., op.cit., p.106.

fluctuations in the incomes in the developed countries or regions from which both the tourist and foreign investor originate), war or political disturbances, and the hazards of weather.⁴⁶ To make matters worse, the aforementioned seasonality in the demand for tourism has severe repercussions on employment stability in the concerned regions.

As the Spanish example points out, seasonality can have detrimental effects on such investment concerns as the rentability of hotels and the demand for manufactured goods. Tourism investment of this sort represents large amounts of capital in fixed assets which must provide returns over the long term. Thus, low levels of demand outside the tourist season can result in relatively low returns on capital.⁴⁷ It is perhaps not surprising that investors are often reluctant to become financially involved in such vulnerable and markedly seasonal enterprises.

From the point of view of the host country or region, an economy based on investment in the tourist industry can be highly unstable and thus, it must be recognized that a policy of diversification should be implemented rapidly. However, for economies of this kind, the cost of urbanization and infrastructure usable for only a small part of the year can be too great to be established and maintained by the permanently resident population.⁴⁸ Under

⁴⁶Clawson, M., op.cit., p.243.

⁴⁷Archer, B., op. cit., p.13.

⁴⁸Naylon, J., op.cit., p.37.

such circumstances, foreign investment may be desirable because it reduces the load on the allocation of scarce national resources. However, such investment can have detrimental effects as well. This topic shall be more fully discussed at a later point in this chapter.

In summary, tourism can be seen to create a wide range of entrepreneurial opportunities. However, seasonality limits returns to capital, thus affecting entrepreneurs, and makes urbanization and infrastructure development difficult for the resident population to afford. Further, vulnerability of the tourist industry introduces a certain degree of risk. However, a brief review of available literature points out that investments in tourism and recreation development are becoming particularly attractive and widespread. Thus, the risk factor should not be overstated. The returns to capital are commonly high enough to justify private involvement in tourism developments.

F. Tax Revenue Generation

Tourism can also be profitable for governments. This profitability stems from revenues accruing to local governments through direct taxation of the tourist and taxes imposed on the tourist industry. Direct taxation of the tourist can take many forms, the two most important of which appear to be the departure tax and the hotel room tax. Unfortunately, governments do not realize that the nuisance

created by these taxes probably outweighs their revenue generation.⁴⁹ This has frequently been the case in the Caribbean.

Taxation of the tourist industry itself is probably the best policy for taxing tourist expenditure. Direct taxes can be levied on the tourist services sector through real estate taxes, taxes on the hotels themselves, and income taxes on the wage earners. Indirect taxes can be levied on the imports used by the tourist services sector.⁵⁰ However, governments must take care not to overtax the industry so as to inhibit expansion.

It is important to note that tourism development must provide a local tax base sufficient to meet, or more than meet, the added costs accruing to the local government that arise out of tourist activity.⁵¹ Such added costs include providing prospective entrepreneurs with reasonably accurate statistics concerning local industry conditions, providing prospective tourists with promotional material, protection of visitors, infrastructure development, and very often, financial support of industry. Thus, although tourism can be profitable from the government's point of view, this is not always the case. A local area seeking to promote tourism "as an economic support can only estimate, as best it can, the probable additional tax revenue and the probable additional costs of local government: the balance may be either

⁴⁹Jones, Jr., J.F., op.cit., p.279.

⁵⁰Ibid., p.280.

⁵¹Clawson, M., op.cit., p.247.

positive or negative."⁵²

G. Foreign-Exchange

Traditionally, underdeveloped or developing countries and regions have been very dependent upon commodity exports for their source of re-investment revenues. However, because such exports are subject to slow growth, which is attributed to widely fluctuating prices and income inelasticities of demand, many such countries are turning to the development of an ongoing tourist industry as a potentially viable alternative. Slow growth, if allowed to continue unchecked, impairs developmental capacity, and as a result, creates a deficit in the balance of payments stemming from high income elasticities of import demand in the face of low income elasticities for regional exports.⁵³

The introduction of an interregional or international tourist trade offers a potentially attractive market for domestic product diversification, perhaps ultimately contributing to increased foreign-exchange earnings, and probably remedying the balance of payments gap through import substitution. Such added earnings are then used in promoting new investment and a more efficient utilization of existing capacity, all of which tend to accelerate the pace of development.⁵⁴ Thus, it is not surprising that tourism

⁵²Ibid., p.248.

⁵³Krause, W., International Tourism and Latin American Development, (Austin: University of Texas Press, 1973), pp.14-15.

⁵⁴I.B.R.D., op.cit., p.13.

has become a major foreign-exchange earner. The Spanish example points out that "when tourism came into play, foreign-exchange earning from this new source expanded at an unprecedented rate and soon came to equal or exceed in value Spain's most important export commodities."⁵⁵ Kenya, in 1950, only reported 5,300 tourists. By 1970, this figure had climbed to 225,000. By 1972 tourist earnings had surpassed coffee as the country's top foreign currency earner.⁵⁶ With reports such as these coming from countries which turned to tourism as a major foreign exchange earner, it is perhaps not surprising to find other developing countries such as Algeria, looking to tourism as an additional export-base in spite of considerable foreign-exchange earnings from other exports.⁵⁷

It is important to note that what studies on the foreign-exchange benefits of tourism frequently neglect... "is the amount of foreign-exchange that has to be spent to keep the wheels of industry turning."⁵⁸ For underdeveloped or developing countries and regions the impact on foreign-exchange earning ability produced by the development of a tourist industry can be severely weakened by subsequent high import propensities. This has been the case in Turkey.⁵⁹ As the size of the net foreign-exchange earnings figure is reduced, the external balance sheet may even show

⁵⁵Naylon, J., op.cit., p.33.

⁵⁶Jackson, R.T., "Problems of Tourist Industry Development on the Kenyan Coast," Geography, vol.58, 1973, p.62.

⁵⁷Blake, G.H., op.cit., p.148.

⁵⁸Teye, V., op.cit., p.184.

⁵⁹Diamond, J. op.cit., p. 551.

that tourism has produced a net deficit of foreign-exchange. Insofar as this may be the case, it becomes difficult to make conclusions as to the overall benefit of tourism in terms of an area's foreign-exchange earning ability.

H. Amenities

In addition to being a source of income, employment, tax revenue, and foreign-exchange, tourism is frequently seen to be a source of amenities for the resident population of the tourist area. In many areas of the world development of a tourist industry has not only produced great disparities in the standards of amenities provided for the tourist but also for the local population. However, studies show that in the long run, "the improvement of standards for the local population is probably a condition of successful tourism development."⁶⁰ In a direct sense, the establishment of a permanent service sector through the development of a tourist industry enables the residents to enjoy "a higher standard of public transport, shopping and entertainment facilities than they would be able to support otherwise."⁶¹

It can be argued however, that such development affects only those residents in the immediate vicinity. Very often, only small isolated areas are given good roads, an adequate water supply and other utilities, while the rest of the community remains as it was. Further, the benefits from such amenities appear to be limited to the better-off members of

⁶⁰I.B.R.D., op.cit., p.18.

⁶¹Burkart, A.J., et.al., op.cit., p.63.

society. A common example of this is the stark contrast of a jet airport on a Caribbean island which is inhabited by a resident population that cannot afford to fly.²

Thus, it is again difficult to reach any final conclusions. All that can be deduced is that tourism development may directly provide amenities to at least some of the resident population. It is easier to draw conclusions in examining the indirect effects of the tourist industry on amenities for the resident population. An enlarged tax base resulting from tourism development permits better public services such as an educational system, for the entire local population.³ As a final note, it would appear from the above discussion that no truly detrimental effects can be observed when examining the provision of amenities to the local population. However, this observation can be seen to understate the situation.

First, the provision of amenities for the local population, as supposedly offered by the development of a tourist industry, can have very limited effects if over-crowding results from the influx of a large number of visitors. The case is well stated by Wolfe, in his examination of the impact of tourist travel in Spain. As he puts it, "the very amelioration of poverty that tourism from abroad helps to bring about may make it possible for people to begin to enjoy the amenities of their own country, and by the time they are ready they may find that their country is

²Lundberg, D.E., op.cit., p.129.

³Harpers, R.A., et.al., op.cit., p.99.

no longer theirs to enjoy."⁴ Basically, even though amenities may be improved by tourism, more people means more sharing, and increasingly, the resident population of the tourist destination is having to compete with visitors for a finite supply of services.⁵ As the Spanish case illustrates ten million visitors impose a congestion problem. According to one Spaniard, "the island of Majorca will probably sink under the sheer weight of bodies; foreign bodies, please note."⁶

The severity of the problem becomes magnified when one considers the intensiveness of the use of infrastructure by tourists, in both a temporal and a spatial sense. Increasing pressure on infrastructure through overcrowding is largely a manifestation of seasonality. Further, tourists tend to be more intensive users of certain sections of the existing infrastructure because their geographical distribution is less even. "They travel more, shop more, visit more museums,...and thus accelerate the attainment of saturation levels" for those sections of the infrastructure which they come in contact with.⁷ In this way, large, concentrated influxes of visitors can be seen to limit any amenities which the resident population is likely to derive from tourist development.

⁴Wolfe, R.I., "Recreation Travel: The New Migration," Geographic Bulletin, vol.9, no.4, 1967, p.164.

⁵Young, G., op.cit., p.120.

⁶Wolfe, R.I., op.cit., p.164.

⁷Young, g., op.cit., p.119.

To further reduce the positive impact of tourism in providing amenities to the local population, it has often been noted that tourism can result in the destruction of the scenic amenity offered by unspoiled open space. In consequence of this dense traffic of tourists, over-exploitation of the resource base can have serious environmental ramifications. However, under the enforcement of appropriate land-use patterns, and zoning and building regulations, such ramifications can be abated and the scenic amenity preserved.⁶⁸ Thus, tourism has often proved to be a positive factor in conservation. In the Algerian example, vigilance in tourism development of the oases has enabled the striking of a delicate balance "between providing facilities for tourists and preserving the "other worldliness" they go to enjoy."⁶⁹ Such a balance insures continuing compatibility between conservation and tourism. However, when appropriate enforcement is not put into play, this balance can be absent. Under these circumstances, tourism can destroy the scenic amenities which the local population has, in the past, taken for granted.

In summary, successful tourism development can often be seen to indirectly improve the standards of amenities enjoyed by the local population through the provision of amenities for the tourist. However, this need not always be the case. Congestion and overcrowding may cause a

⁶⁸I.B.R.D., op.cit., p.17.

⁶⁹Blake, G.H., op.cit., p.152.

deterioration in the standards of amenities enjoyed by the local population. What indeed happens is dependent upon the balance of the demand for, and supply of, tourist services. The net effect on amenities for the resident population may be difficult to determine.

I. Social

As is the case in examining tourism's effects on amenities for the local population, it is sometimes difficult to draw a distinct line between the economic and social impacts of tourism. Nevertheless, it is possible to identify widespread effects which are distinctly social in nature. On the one hand, tourism can be seen to bring about a mixing of people with different social and cultural backgrounds. This can have the effect of widening people's interests in non-local affairs and creating a new understanding of foreigners and foreign tastes.⁷⁰ To some extent, such social interaction can help to promote a better understanding of regional problems.⁷¹ On the other hand, tourism can do much in terms of cultural revival. Unique cultural mosaics form an enticing tourist attraction. In the Algerian example, it was hoped that the revitalization of craft industries brought about by the tourist industry, "would help revive something of the rich Islamic

⁷⁰Bryden, J., Tourism and Development: A Case Study of the Commonwealth Caribbean, (Cambridge: Cambridge University Press, 1973), p.91.

⁷¹Archer, B., The Impact of Domestic Tourism, p.8.

culture...which the French did much to erase in Algeria."⁷²

Although such social effects as those mentioned above appear favourable from the point of view of the impact of tourism, available literature points out that criticism of the tourist industry has centred mainly on tourism's non-economic effects. First, if the development of a tourist industry involves the resettlement of local residents, a serious disruption in traditional lifestyles can occur.⁷³ This was the case in the forced exodus of the Icelandic people from Hecla Island, Manitoba. In addition, if, as previously discussed, the tourist industry exerts pressure on the environment, land, and infrastructure, and results in seasonal employment, alienation of the local inhabitants is all but inevitable. Thus, although tourism admittedly brings money and stimulates the local economy, the resident population often experiences second thoughts as to its desirability based on social repercussions.⁷⁴

In opposition to the previously discussed contention that tourism may aid in cultural revival, it is often observed that tourism creates a "human zoo" feeling when tourists come to see "the natives" and study their "odd habits".⁷⁵ In addition, it is frequently argued that foreign culture is transmitted through continuous first-hand contact of the local population with the tourist, thus causing a

⁷²Blake, G.H., op.cit., p.148.

⁷³Teye, V., op.cit., pp.200-204.

⁷⁴Lundberg, D.E., op.cit., p.144.

⁷⁵Bryden, J., op.cit., p.94.

gradual loss of culture. This process is referred to as "acculturation" and is, in effect, a demonstration effect. Compounding this threat to indigenous culture and mores, is the real possibility of "a serious deterioration in standards of local arts and crafts as efforts are made to expand output to meet the tourist's demands."⁷⁶

Summarizing, it is the conclusion of a great deal of literature on the subject of the possible impacts of tourism, that the major criticism focused on tourism deals with its non-economic effects. If tourist development is to the detriment of a people's culture and lifestyle, all the economic benefits in the world will not appear attractive.

J. Conclusion

In conclusion, this chapter has attempted to present and discuss the various possible impacts of the development of a tourist industry. However, as has been noted, the balance between the different positive and negative effects of tourism is difficult to determine, and varies between different regions and countries. The noted effects are seen to be diverse and complex, and an examination of available literature points out that in actuality, very little work has so far been carried out in attempting to assess the full impact of tourism development on particular destinations. Supposedly upon completion of such work, careful planning

⁷⁶I.B.R.D., op.cit., p.14.

and regulation will enable regions to mitigate the majority of negative effects so making it possible to realize the many benefits of tourism development.

III. COST-BENEFIT ANALYSIS AND ITS ROLE IN PUBLIC INVESTMENT
DECISION-MAKING: WITH SPECIFIC REFERENCE TO INVESTMENT IN
THE TOURIST INDUSTRY

A. Introduction

Through a combination of traditional economic concepts and administrative decision-making principles, cost-benefit analysis presents a practical methodology for use in assessing the desirability of projects where it is important to enumerate and evaluate all the relevant generated benefits and incurred costs. As such, cost-benefit analysis is an analytical technique which is explicitly concerned with the wide consequences of proposed investment decisions. Of special interest is the role played by cost-benefit analysis in examining the possible regional effects of government investment. This role can be seen to have gained particular significance in recent years as a result of a general trend of growth in the public sector, increasing numbers of large public investment projects, and the rapid development of economic techniques which can be applied in analyzing these investments.'

In regional development planning, where there is frequently a strong commitment to social welfare, governments are often obliged to make investment decisions in cases "where businessmen decline to tread."² In such

¹Prest, A.R., and Turvey, R., "Cost-Benefit Analysis: A Survey: The Economic Journal, vol. 75, 1965, p.84.

²Dorfman, R., (ed.), Measuring Benefits of Government Investments, (Washington: Brookings, 1965), p.4.

cases, derived social value can be seriously divergent from market prices.³ It is this divergence which appears to make the case for government intervention via regional planning, rather than simply allowing market forces to allocate resources among regions. Such a conclusion would seem to imply that the justification of potential government undertakings having a regional dimension should not be based on narrow investment criteria, but on a broader assessment of benefits relative to costs. Hence, "in regional planning, where public sector investment and government subsidized investment are so crucial, there should be wide scope for cost-benefit analysis."⁴

In chapter two it was pointed out that it is often difficult to determine whether or not tourism development is the proper investment choice from the point of view of regional planning because of the diversity and complexity of discernable effects. This is where cost-benefit analysis can be seen to have potential usefulness, insofar as such analysis is a technique for use in assessing the worth of a project involving public expenditure by weighing up the advantages and disadvantages. Following a brief examination of methodology, this chapter will proceed to look at the use of cost-benefit analysis in assessing the merits of tourism development projects.

³Ibid., p.6.

⁴Richardson, H.W., Elements of Regional Economics, (Markham: Penguin, 1969), p.147.



B. Cost-Benefit Analysis

In theory, consideration of the cost-benefit relationship reflects an elementary decision rule: "no rational person could be expected to undertake actions where anticipated costs exceeded anticipated benefits."⁵ In practice however, application of this relationship is somewhat more complicated. Generally speaking, cost-benefit analysis is a pragmatic method of setting out the factors which need to be taken into account in making certain investment decisions. As such, cost-benefit analysis can be viewed as having originated in the practices of federal administrative agencies in the United States, and more specifically, in the practices of the water resource agencies. The use of cost-benefit analysis in these agencies centres around evaluation of the feasibility of specific projects, selection of preferred projects from a wide range of possible choices, and justification of projects in the budgetary process.⁶

1. Identification of the Objective Function

Prior to consideration of the methodology employed in cost-benefit analysis it is necessary to point out that any enumeration or valuation of costs and benefits undertaken can only be done so in the context of some implicit or explicit objective function. Examples of possible objective

⁵Burkhead, J., and Miner, J., Public Expenditure (New York: Aldine-Atherton, 1971), p.206.

⁶Ibid., p.209.

functions involved in government investment decisions are: an increase in national income, aggregate consumption, or the supply of foreign-exchange, or some contribution to full employment, or even to some desired state of income distribution. It is interesting to note that in the past, cost-benefit analysis has tended to focus on those objective functions akin to economic efficiency, giving only secondary attention to other possible objective functions such as income distribution.⁷ Once the objective function has been specified, enumeration and evaluation of costs and benefits can proceed with benefits representing contributions to the objective function, and costs representing reductions in the objective function.⁸

2. Enumeration of Benefits and Costs

Following identification of the objective function, standard application of cost-benefit analysis dictates that the project be defined with a list of current benefits and costs included. This then comprises the first stage of analysis.⁹ While the drafting of this stage may appear to state the obvious, certain fundamental problems are often encountered in the drawing up of the complete list of ensuing costs and benefits. Primarily, these problems centre around the delineation of the geographic area within which

⁷Herfindahl, O.C., Economic Theory of Natural Resources, (Columbus: C.E. Merrill Publishing Co., 1974), p.189.

⁸Burkhead, J., op.cit., pp.207-208.

⁹Peters, G.H., Cost-Benefit Analysis and Public Expenditure, (Worcester: Institute of Economic Affairs, 1966), p.18.

resulting costs and benefits are to be included, and relatedly, the designation of the "society" which the appraisal is designed to cover. However, notwithstanding these problems of practical application, enumeration of current costs and benefits to be included most frequently focuses on three broad categories of impact. As a definitional point, it is possible to refer to these categories of impact as benefits, with costs merely being treated as negative benefits.

First, the "primary" benefits of a project consist of "the value of the goods or services that result from conditions with the project as compared with conditions without the project."¹⁰ For example, in the case of an irrigation project, the primary benefit is the value of the additional crops produced on the newly irrigated land. However, in the case of an irrigation project, as is the case in many such programs, there are associated primary costs, or negative benefits, such as the costs of the inputs necessary to produce the additional crop.

The second broad category of impact involves secondary benefits. Briefly stated, secondary benefits are "multiplier effects and investment effects that may be localized within a region or project area."¹¹ Traditionally, two classes of secondary benefits can be recognized. The first is described as "stemming from" the project insofar as there is increased activity in those industries which process, distribute, and

¹⁰Burkhead, J., op.cit., p.225.

¹¹Ibid., p.226.

consume the output of the project itself. For example, in the previously referred to case of an irrigation project the increased crop yield (eg. grain) will promote increased activity by grain merchants, transporters, millers, bakers, etc., and as a result, will increase their profits.¹² The second class of secondary benefits are those "induced by" the project insofar as industries which supply the project area with goods and services experience increased demand, and in response, increase their productive activity so as to realize greater profit. In the irrigation project example, induced secondary benefits are the extra profits arising from the sale of goods and services to farmers.¹³

In much of the available literature a matter of considerable controversy has been the notion that secondary benefits may not be appropriately valuated in cost-benefit analysis. The question of whether or not to include secondary benefits is ultimately related to the opportunity cost of the public investment in question. In general terms, the opportunity cost of some good or input (monetary funds included) currently committed to a public project, is their worth in some alternative use. Under the assumption of full employment (a basic assumption in cost-benefit analysis) secondary benefits are presumed to exist with or without the government investment. Alternatively, under conditions of unemployment secondary benefits can be seen to accrue.¹⁴

¹²Prest, A.R., op.cit., p.698.

¹³Ibid., p.698.

¹⁴McKean, R.N., Efficiency in Government Through Systems Analysis, (London: John Wiley & Sons, 1958), p.158.

However, it is argued that even when there is full employment, secondary benefits are of importance to the extent that "a regional distribution of benefits is an element in the objective function... since they bring a redistribution of national income to favor the region."⁵ Thus, in recognition of this importance the United States Bureau of Reclamation has followed the practice of including secondary benefits as a part of its project reports, while not formally including them in the calculation of net benefits.⁶

The third and final broad category of impact to be considered is termed "externalities". Briefly put, externalities are the beneficial or injurious "impacts of actions by some decision-making units on the activities of others, impacts that are not directly felt by the first group."⁷ In economics, such impacts are termed "external economies" and "external diseconomies". A general characteristic of externalities is that payment cannot be extracted from the benefited parties, and compensation cannot be enforced on behalf of the injured parties.⁸ The resulting complexity of impacts is particularly noticeable in the case of public investment projects which abound in externalities. However, one of the major commendations of cost-benefit analysis "is that a very broad view may be

⁵Burkhead, J., op.cit., p.226.

⁶Ibid., p.227.

⁷McKean, R.N., op.cit., p.134.

⁸Pigar, A.L., The Economics of Welfare, (London: McMillan, 1950), p.183.

taken of project effects in order to comprehend the full range of externalities."¹⁹

In view of the treatment of externalities in cost-benefit analysis, it is necessary to make a distinction between "technological externalities" (included in the calculation of costs and benefits) and "pecuniary externalities" (not included in the calculation of costs and benefits). Technological externalities arise when the project affects the physical production possibilities of other producing units, public or private, or alters the satisfactions that consumers derive from given resources. As an example, a project which uses water upstream (eg. a reservoir) may reduce the productive potential of hydroelectric plants or irrigation facilities downstream. Conversely, it may increase the recreational potential of other given inputs.²⁰ Thus, technological externalities may lead to benefits as well as costs, and these, as previously stated, can be expressed in the cost-benefit calculation.

Pecuniary externalities, on the other hand, "do not affect the units of output (or pleasure) that can be obtained from a firm's (or a consumer's) physical outputs."²¹ Nevertheless, they do issue an effect via the project's influence on the prices of products or factors. For example, if the project involved is a major public recreational facility, the demand for, and hence, the price

¹⁹Burkhead, J., op.cit., p.225.

²⁰McKean, R.N., op.cit., pp.135-136.

²¹Ibid., p.136.

of, private recreational facilities in the project area may be adversely affected.²² This effect would be termed a negative pecuniary externality and, as noted above, should not be included in the cost-benefit calculation for it does not represent a decrease in the demand for recreational facilities. It is merely a transfer of some demand from private facilities to the new public facility.

Summarizing, as far as enumeration is concerned, it is possible to note several diverse types of benefits which can be viewed as accruing to many different beneficiaries. As a result, it is often difficult to list all the possible impacts and in so doing, to avoid double counting. However, barring any such difficulties, enumeration of the possible impacts permits movement to the second stage of cost-benefits analysis, namely valuation.

3. Valuation of Benefits and Costs

Given the list of benefits and costs it is now necessary to reduce them to monetary values in order that an estimate of the current net benefit for any project be calculated.²³ In a general sense, market prices are seen to provide a substantial amount of information concerning benefits and costs. Unfortunately, they tend to be inaccurate measures of society's valuation of the impacts of the project in question. As a result, it is normally

²²Burkhead, J., op.cit., p.237.

²³Peters, G.H. op.cit., p.18.

necessary to alter market prices in order to reflect societal preferences. Prior to consideration of ways in which this might be achieved, this chapter shall examine some of the reasons for the divergence of market prices from those construed as "societal" prices.

One of the primary reasons for divergence between market prices and prices which are relevant to society, is the existence of monopolistic elements or other imperfections in goods and factor markets. Under such conditions, market prices in product markets may bear no visual alliance with the marginal costs of output, and similarly, market prices in factor markets may bear no visual alliance with the value of the marginal physical product of the factors. Thus, investment decisions which are based on valuations of benefits and costs at market prices are seen as not being appropriate.²⁴ If refiners, in the example of a proposed irrigation project, (this time enabling more sugar-beets to be grown, and hence, more sugar to be refined) are seen to hold a monopolistic position, then the prices they pay the farmer for his beets, or the final prices they charge to the consumer may not adequately reflect society's valuation of the impact of increased irrigation water.

A second circumstance of divergence between market prices and social costs or benefits results from the activities of governments. In the case of taxes on

²⁴Prest, A.R., op.cit., p.692.

expenditure it is generally preferable to value taxed inputs "at their factor cost rather than at their market value."²⁵ As an example, it is interesting to consider the estimation of fuel savings arising from a road improvement project. Should these savings be valued at before or after tax prices to adequately reflect social costs and benefits? Insofar as government controls are concerned, price support schemes and production controls are likely to lead to divergence between market prices and society's valuations. For example, should the previously referred to increase in sugar-beet production, resulting from increased irrigation water, be valued at a price which takes into account existing quotas? If such quotas indeed exist, then increases in sugar-beet production may actually be restricted, and thus, market prices may not satisfactorily reflect actual costs and benefits to society.

A third source of divergence between market prices and social costs and benefits results under conditions of unemployed factors. Succinctly stated, in the case of unemployed factors, "the use of market values to ascertain direct costs and benefits of a project overstates its social costs and underestimates its total benefits."²⁶ Under such conditions almost any project is better for society in general than no project because it makes use of unemployed but still cost-incurring factors. For an agricultural region with chronic unemployment, an irrigation project may mean

²⁵ Ibid., p.693.

²⁶ Ibid., p.694.

new jobs. Thus, to value the benefits of the project in terms of market prices alone will substantially underestimate the benefits accruing to the project region.

Collective goods represent a fourth area of divergence between market prices and societal valuations of costs and benefits. Collective goods are those for which derived enjoyment cannot be confined to members of society who are willing to pay for them.²⁷ Thus, there is little basis for project evaluation based on market pricing owing to the misrepresentation of the present value of sales.

The mere attempt to value costs and benefits introduces the concept of intangibles, which form the fifth and final source of deviation between market prices and social costs and benefits to be considered. Intangibles are simply those consequences of the alternative projects compared that "cannot readily be translated into the common denominator that is being used. Thus if gains are measured in terms of dollars, those effects which cannot be so measured are intangibles."²⁸ Identified in this way, some costs and benefits cannot be quantified (eg. the scenic effect of a reservoir), and others, notwithstanding the fact that they can be quantified, cannot be valued in any market sense (eg. the increased number of lives lost due to drowning).²⁹

²⁷Peters, G.H., op.cit., p.14.

²⁸McKean, R.N., op.cit., p.58.

²⁹Prest, A.J., op.cit., p.696.

In summary, the valuation of costs and benefits arising from a given investment project often entails going beyond the measurement of effects on the basis of market prices. This usually involves making allowances for imperfections, unemployed resources, and so on.

The standard method of making such allowances is the utilization of "social", "accounting", or "shadow" prices in project evaluation. Broadly speaking, such a price (the terms being interchangeable) is "the price the economist attributes to a good or factor on the argument that it is more appropriate for the purpose of economic calculation than its existing price, if any."³⁰ Hence, in valuating the costs and benefits of any project, the analyst may "correct" market prices and, also, set prices on unpriced gains and losses.

Following from this it becomes possible to compare the stream of annual net benefits with the costs of the project concerned. In simplest terms, the cost stream will be made up of "the initial investment, interest on this investment, and the long stream of operation and maintenance costs anticipated over the life of the facility."³¹ Obviously, for the project to accrue to the net well-being of society, derived benefits must exceed these costs. Unfortunately, benefit estimation is not as straightforward a task.

³⁰Mishan, E.J., Cost-Benefit Analysis: An Informal Introduction, (London: George Allen and Unwin Ltd., 1971), p.81.

³¹Barkley, P.W., Economic Growth and Environmental Decay, (New York: Harcourt, Brace, Jovanovich, Inc., 1972), p.88.

4. Determination of Evaluative Criteria

Upon valuation of the benefits and costs associated with concerned projects, it is necessary to evaluate alternatives on the basis of specified criteria. Preliminary screening can be performed on the basis of the constraints facing would-be investors, both public and private. Such constraints may render any net calculation of costs and benefits merely academic.

a) Constraints to Investment

Insofar as constraints to investment are concerned, there is at the outset, a group of constraints which require only brief discussion. The first and most general category of these are physical constraints. In this regard, investors are frequently faced with an obligation to adhere to an existing production function. In addition to physical constraints, investors often face legal constraints, inasmuch as projects must remain within the framework of the law. As a result, investment must yield to such constraints as "rights of access, time needed for public inquiries, regulated pricing, limits to the activities of public agencies and so on."³² Third, there may exist administrative restraints which effectively limit the amount and types of investment that can be administratively managed.

Finally there are a group of constraints which require more extended discussion. First, investment projects are

³²Prest, A.R., op.cit., p.700.

frequently subjected to severe political constraints. Some projects may never even come to the analysis stage because they have been "screened out" for political reasons. For example, a water resource project may yield significant recreational benefits if the legislature were to authorize the necessary development of lands adjacent to reservoir sites, but this may not be deemed politically feasible.³³ Such screening can be beneficial if it represents the supporting of high level objective functions such as income class equity, or regional balance. However, if projects become screened on the basis of possible defamatory ramifications in the political arena, then policy direction aimed at objective functions may be wholly or partially eliminated.

Another major constraint faced in making the investment decision is concerned with distributional considerations. This constraint arises because "the notion that the choice between projects can be made solely on the grounds of "economic efficiency", because any unfavourable effects on income distribution can be overcome by making some of the gainers compensate some of the losers, is rarely applicable in practice."³⁴ ("gainers" and "losers" may refer to individuals, geographic areas, etc.) Rather, distributional constraints necessarily intrude on the area of consideration. These are generally seen to enter via the political system, either as regional interests push for

³³Burkhead, J., op.cit., p.225.

³⁴Prest, A.R., op.cit., pp.700-701.

development projects, or as societal ethics give weight to overall objective functions. Unfortunately, distributional constraints make project choice decision-making difficult and controversial.

Whereas the constraints discussed up until this point have all shared the common problem that arising difficulties in project choice cannot be resolved by the techniques of cost-benefit analysis, the following two constraints can be systematically allowed for. First, all investment projects, whether public or private, are subject to budget constraints of one form or another. For any public investment agency there exists a limited overall budget which is in turn, partially constrained by the total public expenditure budget.³⁵ Both total and departmental budgets are limited by such factors as "an executive decision that total expenditure shall not exceed a specified amount, or that the requirements of economic stabilization are such as to limit the total outlay."³⁶ However, it is possible under cost-benefit analysis to establish a priority ranking of projects, designed to exhaust the relevant budget and thus, at least partially overcome the problems caused by such a constraint.

Lastly, investment is often constrained by risk and uncertainty surrounding a project's cost and gain. In public, as well as private investment ventures, actual costs

³⁵Dasgupta, A.K., and Pearce, D.W., Cost-Benefit Analysis: Theory and Practice, (London: MacMillan, 1972), p.172.

³⁶Burkhead, J. op.cit., p.213.

and benefits may be greater or less than those anticipated, thus leading to a hampering of investment decisions. Fortunately, it is possible for the "conservative" analyst to make allowances for risk and uncertainty within the techniques developed in cost-benefit analysis. In such an approach, incorporation of allowances for risk and uncertainty may take the form of a higher permissible ratio of benefits to costs, a higher rate of discount, or an arbitrary cutoff point on the duration of benefits.³⁷ The true meaning of these allowances will become clear under the discussion of cost-benefit criterion.

In summary, there are a number of constraints which may be encountered by would-be investors, both public and private. Some of these can be corrected for in cost-benefit analysis, but the majority cannot. Given consideration of these constraints, and the various issues involved in the enumeration and valuation of costs and benefits, it is possible at this point, to turn to a discussion of the various criterion which investors use in making the investment decision.

³⁷Ibid. , p.239.

b) Selection Criteria

The final step in project analysis is "the selection of the model or criterion for relating the estimated costs and benefits of diverse projects" within the choice set.³⁸ The choice set reflects an inherent necessity in cost-benefit analysis to limit the range of possible projects for comparison within any particular analysis. In this way it is possible to examine projects with the view of determining relative merit.

Within any particular choice set the decision-maker can make any one of three types of choice. First, if projects are independent and there is no constraint on the number which can be undertaken, the decision-maker must make an "accept-reject" decision for each individual project. Second, if there exists a limited supply of any input, the undertaking of all acceptable projects may not be possible. Under such circumstances, projects must be "ranked" in terms of the objective function, and thus, a standard accept-reject decision cannot be made. Finally, if projects are "mutually exclusive" (ie. when there are two different ways of achieving the same objective), the decision-maker must choose between the alternatives.³⁹

Generally speaking, because all estimates of benefits and costs are subject to errors in forecasting, it is better to use cost-benefit analysis for comparison of similar projects than for testing the absolute desirability of any

³⁸ Ibid., pp.213,215.

³⁹ Dasgupta, A.K., op.cit., p.160.

one particular project. Errors in water resource forecasting arise because "prices cannot be projected precisely, hydrologic data usually cover too brief a period, agricultural yields are difficult to predict where methods of cultivation have to be changed..., engineering cost estimates are often far off the mark," and so on.⁴⁰ As a result, project ranking appears to be favored in the majority of examples of the practical application of cost-benefit analysis.

Given a description of the above mentioned types of choice, it is now necessary to discuss the criterion on which these choices are based. First, a criterion widely used in private industry is the "payback period." Simply stated, comparison of investment projects is based on the number of years it takes for the net revenues of each project to equal the original investment cost.⁴¹

Unfortunately, the payback period criterion suffers from two major inherent weaknesses. First, projects may have similar payback periods but different lives. Therefore, the fact that one project may last longer is ignored. Second, the pattern of receipts is overlooked. Hence, a project having the majority of payback in the first few years of operation receives no extra weighting over a project with payback lumped in the final years of operation. Largely as a result

⁴⁰Eckstein, O., "Benefit-Cost Analysis and Regional Development," in Regional Economic Planning: Techniques of Analysis, (eds.) by Isara, W., and Cumberland, J.H., (Paris: O.E.C.D., 1960), p.361.

⁴¹Burkhead, J., op.cit., p.216.

of these two weaknesses the payback rule is generally seen as having little to recommend it.⁴²

Most of the controversy over criterion for the cost-benefit evaluation of public projects has centred around two other alternative choice models. These are the "net present value" and the "internal rate of return". Both models are discussed, in detail, below.

(1) Net Present Value

It is the assumption of a large portion of available literature that the general aim of decision-makers is "to maximize the present value of benefits less that of all costs, subject to specified constraints."⁴³ Thus, all values of costs and benefits, both present and future, are set into a common frame of reference referred to as the present value. The determination of the present value is achieved by making allowance for the passage of time through the use of the discount rate. For example, if the investment stream for a given project is -\$100 (the initial cost of the project), \$50 (revenues of year one), \$150 (revenues of year two), and the relevant interest rate (discount rate) is found to be 10 per cent per annum, then the net present value of the investment is found to be \$69.41. This value is found by using the formula,

$$PV = \sum_{t=0}^{t=n} \frac{B_t - C_t}{(1+r)^t}$$

⁴²Dasgupta, A.K., op.cit., p.168.

⁴³Prest, A.R., op.cit., p.686.

where B is the benefit, C is the cost, and r is the rate at which future net benefits are discounted over t years of project life.⁴⁴ From the calculation, the decision-maker can rank alternative projects or merely make an accept-reject decision, based on the net present value of alternative projects.

However, a brief examination of available literature brings to light an atmosphere of controversy surrounding the determination of the "correct" rate at which to discount future benefits and costs. Inevitably, the controversy has been guided by differences in ideologies. Some believe discount rates should be low so as to boost expansion of the public sector. Others believe discount rates should be high in order to curtail public sector investment activities. To give an example, it has been estimated that for federal water resource projects authorized in the United States in 1962 (when a 2 5/8 percent rate was used), an increased discount rate of 6 percent would have resulted in calculation of a negative net present value for 64 percent of the projects.⁴⁵ In actuality, "there is no 'correct' rate, and rational men will continue to disagree for legitimate reasons."⁴⁶ In practice, however, there are three primary discount rates used in the calculation of the net present value of any project.

⁴⁴Mishan, E.J., op.cit., p.175.

⁴⁵Burkhead, J., op.cit., p.228.

⁴⁶Barkley, P.W., op.cit., p.91.

One method of converting costs and benefits to present values is simply to use the current market rate of interest. Unfortunately, for perhaps obvious reasons, the market rate of interest is commonly thought to be unsatisfactory.

Market rates of interest generally substantially underestimate the opportunity cost of capital, because they fail to reflect the taxes that are paid on account of the profits of private sector projects, and because they neglect other external benefits generated by private sector investments, particularly where there are divergences between market prices and opportunity costs of factors of production or goods.⁴⁷

Thus, it is not surprising to find that the bulk of the available literature on rates of discount for calculating the net present value of any project, is divided into two diverse schools of thought, both concentrating on the calculation of rates of interest which have little or nothing in common with the current market rate of interest (at least in terms of derivation). The first of these two schools is based on the belief that a market rate of interest cannot reflect societal preferences concerning present and future benefits. Moreover, it is assumed that future benefits are likely to accrue to richer generations, having higher levels of consumption. As a result, assuming diminishing marginal utility of consumption, "utility gains to future generations from a gain in consumption will be less than the utility gains to the present generation from the same gain."⁴⁸ Following from these assumptions, it is

⁴⁷Haberger, A.C., Project Evaluation: Collected Papers, (Edinburgh: MacMillan, 1972), p.36.

⁴⁸Dasgupta, A.K., op.cit., pp.136-137.

the notion behind the "social rate of time preference" argument that future gains should be discounted. The social rate of time preference proposal obviously represents a major improvement over the market rate of interest because it attempts to inject a slice of reality into the computation. However, despite the obvious merits of this argument, there are, in practice, two difficulties. The first is encountered in the actual determination of the social rate of time preference. The second results from the necessity to use different rates of interest in the public and private sectors.‘‘

The second school of thought in determining the appropriate interest rate at which to discount future benefits and costs goes so far as to argue that the social rate of time preference is not relevant to public investment decisions. It is their belief that the "social opportunity cost rate of discount" represents the appropriate interest rate. Assuming restricted capital funds, the decision to invest in some public project will involve the sacrifice of some other project. The rejected investment is generally thought of as involving the use of private funds. Consequently, it would seem evident that, if the investment foregone could have yielded a rate of return of, say, 10 percent, then the authorized public investment must guarantee a rate of return of at least 10 percent. If it does not, then resources could have been better utilized in

‘‘Prest, A.R., op.cit., p.698.

the alternative investment, the 10 percent figure reflecting society's valuation of the return obtained.^{5°} As a result, 10 percent is thought to be the social opportunity cost rate of discount, representing a suitable rate of discount for public projects.

Although available literature contains mention of other rates at which to discount future costs and benefits, the three presented above are those most extensively discussed. Which rate is more appropriate, it is difficult to say. It can however be concluded that the two social discount rates are theoretically more commendable than the market rate. Unfortunately, in the absence of any sort of consensus on the criteria for the selection of a discount rate, it is perhaps not surprising that, in practice, arbitrary decisions have been made. Generally, the standard procedure is to select an interest rate or rates on the basis of observed rates ruling at the time. As previously stated, this leads to abstraction from the reality of societal preferences.

(2) Internal Rate of Return

As intimated earlier, the second major criterion widely used in cost-benefit analysis for the evaluation of public projects is the internal rate of return. The internal rate of return criterion, as an alternative to the net present value, requires the calculation of that discount rate which

^{5°}Dasgupta, A.K., op.cit., p.145.

would give the project a net present value of zero (or a ratio of benefits to costs equal to one). The formula for such a calculation is,

$$\sum_{t=0}^{t=n} \frac{B_t - C_t}{(1+r)^t} = 0$$

where again, B is the benefit, C is the cost, and r is the rate at which future net benefits are discounted over t years of project life. As an example, consider an investment with a benefit stream of -\$100 (the initial cost of the project), \$50 (revenues of year one), and \$86.40 (revenues of year two). In order to arrive at a net present value of zero, the internal rate of return of the project in question would have to be 20 percent.^{5 1} Once this discount rate has been calculated, it is compared with the predetermined social discount rate. "The rule for accept-reject and for ranking is to adopt any project which has an internal rate of return in excess of the predetermined social discount rate."^{5 2}

In a normal range of project choices most economists will use the internal rate of return criteria, for it is seen to go around the problem of working with a "given" discount rate. However the drawbacks to using the internal rate of return are numerous. The first, and most obvious

^{5 1}Mishan, E.J., op.cit., p.183.

^{5 2}Dasgupta, A.K., op.cit., p.163.

problem is that, as with the net present value rule, "it remains essential to choose some acceptable social rate of discount."⁵³ Second, computation of the internal rate of return is a slow and involved mathematical exercise. Third, for projects with benefit streams such that revenue years and loss years alternate several times (perhaps due to capital replacement, etc.) there are multiple solutions to the internal rate of return calculation. Thus, there is a need for further criteria in order to choose among various alternative projects.⁵⁴ Fourth, in comparison of projects which are alternatives further complication to the internal rate of return is presented. In such cases, the most desirable project is not necessarily the one with the highest internal rate of return. Rather, it is commonly desirable to choose that alternative which maximizes the net excess of benefits over costs. However, use of the internal rate of return rule of determining an interest rate that sets the ratio of benefits to costs equal to one may disparage the relative desirability of larger projects. Finally, in considering projects with different economic lives, the internal rate of return will tend to form a bias in favor of short-life projects.⁵⁵

In view of the above mentioned shortcomings of the internal rate of return approach, it is small wonder that "the concensus appears to favor the adoption of present

⁵³ Ibid., p.163.

⁵⁴ Harberger, A.C., op.cit., p.28.

⁵⁵ Dasgupta, A.K., op.cit., pp.164-65.

value rules at least for public investment decisions."⁵⁶ In practice, the number of situations in which rate of return rules are deceiving, are limited. However, the occurrence of circumstances in which problems may be encountered is significant enough to indicate the problems in project choice are easier to bypass by using the more direct present value criteria. The fact is, as was pointed out in the section on the valuation of costs and benefits, comparing the benefit stream with that of costs is no easy task, and all approaches have pitfalls.

As the preceding discussion points out, the two most commonly used approaches to the overall evaluation of the costs and benefits of any project are the net present value and the internal rate of return. It is concluded, on the basis of available literature, that the net present value criterion is superior in many respects. Following from this, it has been assumed up to this point that the prime determinant of any project is presented in the form of the current net benefit calculation. However, as will be pointed out below, this need not always be the case.

(3) Benefit Cost Ratio

The standard criticism of the current net benefit calculation concerns its inherent bias in favor of projects

⁵⁶ Ibid., p.165.

requiring large capital outlays. Yet, in cases of a limited budget (a seemingly universal assumption is today's society), several small projects may be more desirable than one large project.⁵⁷ To avoid this problem, decisions between project alternatives should be made on the basis of their "benefit-cost ratios".

In a general sense, three basic rules concerning benefit-cost ratios can be identified. First, projects are accepted if the ratio of benefits to costs exceeds unity. Second, in cases of a limited budget, projects are to be ranked according to the benefit-cost ratio. Third, in the case of mutually exclusive projects the one having the highest ratio is to be selected. Through the employment of these rules, the benefit-cost ratio eliminates bias towards the selection of large projects. Further, for single period rationing under a limited budget, the decision-maker can rank projects by their benefit-cost ratios and therefore, work down the list of projects until the budget is exhausted.⁵⁸ Unfortunately, the shortcomings of the benefit-cost ratio are numerous.

First, its rankings and the ratio itself is still dependent upon a predetermined discount rate, the implications of which have been previously discussed.⁵⁹ Second, whereas the net benefit calculation is not "sensitive to the classification of a project effect as a

⁵⁷ Burkhead, J., op.cit., pp.219-220.

⁵⁸ Dasgupta, A.K., op.cit., p.171.

⁵⁹ Burkhead, J., op.cit., p.220.

cost rather than a benefit, and vice versa", the benefit-cost ratio is. In the calculation of the benefit-cost ratio, the magnitude of the quotient is dependent upon whether or not some costs are treated as negative benefits and some benefits as negative costs. As a result, comparison of projects on the grounds of a benefit-cost ratio is meaningless unless definitional considerations are identical. Third, when applied to mutually exclusive projects the benefit-cost ratio points to conclusions inconsistent with the net present value rule.⁶⁰ Finally, a major problem is the fact that the benefit-cost ratio is an average, rather than a marginal concept. Economic decisions, if they are to be optimal, must be based on the marginal concept. Marginality assumes that such decisions are based on costs and returns associated with the last unit of output produced or consumed.⁶¹

In general, it is all but impossible to make a suitable defence for the use of benefit-cost ratios as a rule on which to base investment decisions, outside of the rationing context discussed above. As a result, it is difficult to understand the reasons for conventional practice in the United States focussing attention on benefit-cost ratios in choosing between various projects.⁶²

⁶⁰"A project costing 100 units, with discounted benefits of 130, has a NPV of 30. This is to be preferred to a project costing 40 with benefits of 60, a NPV of 20. But in ratio terms B is preferred since B has a ratio of 1.5 compared to A's 1.3." Source: Dasgupta, A.K., op.cit., p.171.

⁶¹Barkley, P.W., op.cit., pp.92-93.

⁶²Peters, G.H., op.cit., p.21.

In overall summary, cost-benefit analysis is seen to aid decision-making involving investment choices by providing a broad assessment of benefits relative to costs. However, it is in the derivation of this assessment that the majority of problems concerning cost-benefit analysis are encountered. These problems are seen to stem from all three main stages of analysis: enumeration, evaluation, and determination of criteria. As the essence of cost-benefit analysis involves the attempt to set a dollar value on benefits and costs, it is the methodology employed here which is most often open to criticism. Cost-benefit analysis tends to have a certain theoretical bias in practice. "Its methodology is particularly workable if there is reliance on prices, actual, projected, or even prices adjusted to reflect true opportunity costs or other measures of economic value."⁶³ Another methodology problem which receives a great deal of criticism in the literature involves the determination of an appropriate rate of discount.

All these problems and criticisms aside, the true merit of cost-benefit analysis lies in the mere fact that it forces decision-makers to at least acknowledge and consider the existence of possible widespread consequences of investment decisions. This point will become clear in the following discussion of the value of cost-benefit analysis to the regional development of a tourist industry.

⁶³Eckstein, O., op.cit., p.365.

C. Cost-Benefit Analysis and Tourism Development

In the past, the most common application of cost-benefit analysis to the field of tourism and recreation has involved the derivation of a demand curve for some particular facility, using distance as a proxy for price. Using the demand curve, benefits from expanding the industry have been enumerated as the differences in travel costs and time, and the increase in consumers surplus.⁶⁴ However, cost-benefit analysis can be viewed as having the methodological framework with which to perform a much more important function. Governments and private investors, interested in developing a tourist industry, need to know the extent of potential benefits, and costs which may accrue.⁶⁵ It is generally recognized that private profitability will not adequately represent any sort of assessment of these costs and benefits, and thus, will not serve as a socially responsible guide for investment decisions. This is particularly the case for developing countries and regions. Alternatively, there is no reason to believe that cost-benefit analysis cannot perform this task, so long as one thinks in terms of marginal projects.⁶⁶

⁶⁴Locht, L.J., "Evaluation of Rural Reconstruction Projects with the Aid of a Model of Regional Economic Growth," in Lendall, M.G., (edit.), Cost-Benefit Analysis, (New York: American Elsevier Publishing Co., 1971), p.234.

⁶⁵Lundberg, D.E., The Tourist Business, (Boston: Cahners Books, 1974), p.131.

⁶⁶Bryden, J., Tourism and Development: A Case Study of the Commonwealth Caribbean, (Cambridge: Cambridge University Press, 1973), p.78.

Using cost-benefit analysis in examining the role of tourism investment in regional development initially requires the facing of three principal decisions. First, the social welfare function to be maximized requires identification. The project decision must come as close as possible to maximizing the resulting welfare function. Recognizing that any sort of tourism development will generally create both "gainers" and "losers", cost-benefit analysis can be viewed as providing a guide by which a "social optimum" can be achieved.⁶⁷ Second, owing to the fact that projects have different time profiles of costs and benefits, their comparison, or merely their justification, requires that an appropriate rate of discount be chosen, assuming that the "market" rate of interest is not relevant.⁶⁸ Finally, a method of calculating surrogate prices must be decided upon. Basically, such prices (shadow and accounting prices), as previously referred to, "are determined by adjusting market prices to correct for the distortions which are considered to be significant in such a way that they reflect real scarcity and real needs in the economy."⁶⁹

Having considered the three aforementioned principal decisions, the analysis can now move to the shadow-pricing of the primary inputs in allowing expansion of the tourist industry, in response to demand. In Bryden's proposed

⁶⁷Dasgupta, A.K., op.cit., p.54.

⁶⁸Bryden, J., op.cit., p.81.

⁶⁹Ibid., p.82.

methodology for applying cost-benefit analysis to the tourist industry of the Commonwealth Caribbean, an input-output table is used to provide estimates of the cost of each "bundle" of commodities used in producing the pattern of final output implied by the sectoral pattern of tourist receipts. In this way, each commodity in final demand is found to have a unique requirement of primary inputs, given the assumptions of input-output analysis.⁷⁰ In the present Caribbean analysis, the primary inputs are taken to be: (1) wages and salaries (labour), (2) gross domestic profits (domestic capital) (3) government revenues, and (4) imports of goods and services (plus remitted profits of foreign enterprise).⁷¹

Basically then, the shadow pricing of four primary inputs requires consideration when examining the economic impact of tourism development. The wages and salaries of labour are seen to present a valuation problem, arising from the distortions which almost always exist between the market value of wages and salaries, and the social costs incurred and benefits derived. As with other industrial sectors,

the social significance of the employment of one "man" in tourism depends on where he comes from, how his departure effects the situation he leaves behind, how much he was paid, what he does with the money, and whether the earnings of others are affected by his arrival.

In cost-benefit analysis, it is fairly obvious that the valuation of such employment effects can be only partially

⁷⁰Ibid., pp.83-84.

⁷¹Ibid., p.84.

successful. The areas of possible impact are too diverse. Partial valuation is achieved through the use of the shadow wage rate, which reflects the effect of generated employment on both production elsewhere and, the commitment to consumption. In some cases, with more complex analysis, the shadow wage rate can even allow for different categories of skills, a consideration with many implications in the tourist industry.⁷²

The second primary input, gross domestic profit, arises because of the input-output assumption of constant input coefficients. If there is full capacity, expansion in output can only result from increased tourism investment. In this sense, benefits are seen to accrue to both foreign and domestic investors. However, as is argued by Little and Mirrlees, "such profits cannot be counted as benefit on distributional grounds, and to the extent that they are consumed they must be treated as pure cost".⁷³ If such is the case, the only part of gross profits which count as a benefit is "profits tax", which accrues to the government.⁷⁴

Valuation of the third primary input, government revenues, is relatively simple. Indirect and direct taxes, less collection and assessment costs, are viewed to be a net societal gain. The necessary promotional expenditure by government forms an additional cost.⁷⁵

⁷² Ibid., p.86.

⁷³ Ibid., p.85.

⁷⁴ Ibid., p.85.

⁷⁵ Ibid., pp.173-174.

The final primary input to be considered, importation of goods and services, is thought to represent little or no valuation problem because imports are already valued in terms of foreign-exchange. Thus, in the Caribbean analysis, prices are used without adjustment, for the dollar value of imports is simply the dollar value of domestic production lost, assuming the existence of excess domestic capacity or potential. Included here, and also valued in terms of foreign-exchange, are remitted profits to foreign investors, since they represent the cost to society of receiving the original investment.⁷⁶

Having thus computed the shadow prices of the primary inputs, the study then proceeds to compute social costs and benefits for the project, over the period chosen for the analysis. Utilizing the internal rate of return criteria, the analysis goes on to evaluate the complex of investments required by an expansion of the tourist sector, where, as previously discussed, there exists a great deal of divergence between social and private costs and benefits. However, for the most part, these are quantifiable.⁷⁷

Through the use of the cost-benefit framework, other pecuniary and non-pecuniary costs and benefits of tourism can be identified. These are generally seen to fall into one of four categories: (1) economies of scale, (2) external economies and diseconomies, (3) uncertainty and risk related to the costs of dependence, and (4) the social impact of

⁷⁶Ibid., pp.173-175.

⁷⁷Ibid., p.88.

tourism.⁷⁸ First, governments must inevitably assume responsibility for providing prospective entrepreneurs with reasonably accurate statistics concerning local industry conditions, providing tourists with promotional material, protection of visitors, infrastructure development, and very often, financial support of industry. In underdeveloped or developing countries or regions, where economies of scale can seldom be realized, governments must face a heavy burden as a result of growth in the tourist sector.⁷⁹

Second, certain external economies and diseconomies arise as a result of tourism development. By definition, such external effects merely refer to the side-benefits and costs arising out of the development of a tourist industry. As an example, the establishment of a permanent service sector through the development of a tourist industry enables the residents to enjoy "a higher standard of public transport, shopping and entertainment facilities than they would be able to support otherwise."⁸⁰ However, these external economies may only benefit the better-off members of society. Further, the provision of such amenities through tourism development may produce external diseconomies insofar as such things as the lack of access to amenities for nationals, and the effects of overcrowding are concerned. It is the view of Bryden, and perhaps others,

⁷⁸ Ibid., p.88.

⁷⁹ Clawson, M., Economics of Outdoor Recreation, (Baltimore: J. Hopkins, 1971), pp.247-248.

⁸⁰ Bürkart, A.J., et.al., Tourism: Past, Present and Future, (London: Heinemann, 1974), p.63.

that external economies and diseconomies should not be taken into account by the appropriate choice of shadow prices. According to the United States Bureau of Reclamation, they should be enumerated, but not valued in project reports.

Third, there may be a certain degree of risk and uncertainty related to economic dependence on the tourist industry. The tourist industry can be highly vulnerable to such things as fashion, fluctuations in the business cycle and thus, fluctuations in the incomes of developed countries or regions from which both the tourist and foreign investor originate, war or political disturbances, and the hazards of weather.^{8 1} As previously stated however, risk and uncertainty can be taken into account (as a cost) in the valuation of costs and benefits.

A final consideration is the social impact of tourism. An essential point is that, in contrast with other exporting activities, and indeed, most exchange relations, the tourist industry in developing countries and regions requires personal contact with the consumer of the tourism "product". As a result, by comparison, the social effects of the industry are almost always extensive. It may be contended that tourism brings about a mixing of people with different social and cultural backgrounds. This can have the effect of widening people's interests in non-local affairs and creating a new understanding of foreigners and foreign tastes.^{8 2}

^{8 1}Clawson, M., op.cit., p.243.

^{8 2}Peters, M., International Tourism: The Economics and

However, as the local residents come into contact with the superior goods and spending patterns of the tourists, new wants are created and their import propensities are raised. Further, social strains can be created due to excessive numbers of tourists. There is a relationship between tourist density and the growth of resentment towards tourists.

By and large, "the analysis of the social impact of tourism has been ignored by economists in spite of the fact that most of the attack on tourism in developing countries (and regions) has been leveled at its 'social' effect."⁸² Although such effects are difficult, if not impossible to quantify, they are very real, and their implications cannot be ignored by the planners of the tourist industry.

In summary, there are several important areas of cost which have to be compared with potential benefits. For the most part, these costs and benefits have tended to be ignored by studies of tourism. The mere attempt to enumerate them brings them to light, and it is in this capacity that cost-benefit analysis is held to be most useful.

D. Conclusion

In conclusion, cost-benefit analysis is seen to draw criticism at each step of the way. However, it at least forces those responsible for making investment decisions to

⁸²(cont'd)Development of International Tourist Trade, (London: Hutchinson and Co., Ltd., 1969), p.126.

⁸³Bryden, J., op.cit., p.91.

attempt to quantify them. If it were not for such a framework, public investment decisions would rest on vague qualitative judgements or personal hunches. Perhaps even more importantly, cost-benefit analysis forces the planner to realize that the benefits and costs of publicly sponsored projects are not necessarily the same things as the direct revenues generated, and the direct costs incurred. Societal preferences are regarded to be important and the traditional economic postulate of the need to maximize economic efficiency for the individual firm rather than society, becomes less prevalent.

Thus, the mere attempt to enumerate and value the many good and bad effects of tourism opens the planners mind to such effects. However rough the calculation may be, the case for cost-benefit analysis in making investment decisions is strengthened, not weakened, if the ensuing limitations are acknowledged and indeed emphasized. Limitations recognized then, cost-benefit analysis forms a helpful guide to the public investment decision.

IV. ECONOMIC BASE ANALYSIS

A. Introduction

In order that the impact of any public investment decision be maximized it is important to have some type of guide as to the localized effects of induced economic activities. As has been previously alluded to, these localized effects are comprised of a variety of benefits along with certain costs associated with the area in which they are located. Optimization of the benefits component of these effects through the active promotion of regional economic growth and development is the essence of governments' apparent commitments to fulfilling perceived economic and social objectives. Unfortunately, however, the means required to predict the impact of a variety of activities are as diverse as they are numerous.

In examining the impact of the tourist industry on a particular area or region, researchers and planners have had to go beyond the standard "Clawson-Knetsch"' type of approach which centres around consumer surplus and welfare functions, and employ a technique which investigates a much wider field of effects. Cost-benefit analysis is commonly used for this purpose. However, while this approach may have the virtue of at least pointing up the possible effects that an activity may have, the quantification necessary to allow decision-makers to weigh the merits of one project over

¹Clawson, M. Economics of Outdoor Recreation, (Baltimore: J. Hopkins, 1966), pp.209-229.

another is often lacking. Thus, to maximize the beneficial effects an activity is to have on a local area, planners are forced to employ more economic methodologies. Inasmuch as economic impact studies are designed to ascertain the extent of effects arising from the existence of, or changes in the size of a local economic unit, it appears to be standard practice to include objective estimates of the resulting local employment and/or income. A consideration of local multiplier effects is normally incorporated into such a study.²

In very simplified form, the majority of multiplier formulas which are used in impact analyses can be seen to have roots in certain fundamental Keynesian-type income relations. Basically, the multiplier process may be represented by the equation:

$$\Delta Y = \frac{1}{1 - MPC} \cdot E_{ex}$$

where ΔY is the total incremental income accruing to local residents, E_{ex} is some exogenous injection into the system (ie. investment flows, returns from the sale of exports, government spending, etc.) and MPC is the marginal propensity to consume. In this simplistic case, the MPC is equal to one minus the marginal propensity to save (assuming taxation, shifts in the investment schedule and corporate

²Wilson, J.H., "Impact Analysis and Multiplier Specification," Growth and Change, vol. 8, no. 3, 1977, pp.42-45.

saving are negligible). The multiplier can then be defined as the multiple by which national or regional income is changed due to some autonomous (exogenous) change in expenditure.³

The relevance of the multiplier approach to the field of regional development planning lies in the fact that it brings to light the mechanism by which growth in one sector of the economy (eg. exports) induces growth in another (eg. households). The value of the multiplier in policy formulation and implementation lies in the degree to which it provides an operational means of estimating the secondary effects of any given initial injection into the system. The key word here is "operational" for, if the multiplier approach is to be a valuable tool for regional development planners, it must be both explanatory in terms of consequential impact, and derivable within certain limited time and data input parameters.

The problem with the standard multiplier approach *per se* is that the multiplier value obtained is an average of all income circulation patterns and cannot easily be applied to situations involving only one or a few individual economic activities.⁴ For tasks above making general observations concerning the national or regional economy as a whole, a disaggregated multiplier model is more appropriate. However,

³Samuelson, P.A., Economics: An Introductory Analysis, (New York: McGraw-Hill, 1948), pp.231-234.

⁴Isard, W., Methods of Regional Analysis: An Introduction to Regional Science, (London: John Wiley and Sons, Inc., 1960), p.203.

it is unrealistic to attempt to study all aspects of a regional economy in detail. Some limited form of aggregation is necessary.

The most comprehensive type of regional multiplier analysis to yield quantitative results within a conceptually aggregative framework is "input-output analysis" in its interregional form. This technique (discussed at length in Appendix 1) can be briefly defined as an analytical methodology which utilizes a derived interindustry matrix to describe the flow of goods and services from one production sector to another, and from one region to another. It is widely accepted that the various sectoral multipliers which can be construed for a region by means of input-output analysis provide fairly accurate economic impact estimates. It is, however, unfortunate that the raw data required in defining interindustry relationships is vast in terms of quantity and usually obtainable only through the employment of direct-survey techniques. This means that the regional development planner who uses input-output analysis must continually devote large amounts of time and money to data collection. In the field of public policy formulation and implementation where timeliness and budget constraint are prime considerations, more simplistic methods of estimating economic impact are required.⁵

⁵Andrews, R.B., "Mechanics of the Urban Economic Base: General Problems of Base Identification," in Pfouts, R.W., ed., The Techniques of Urban Economic Analysis, (West Trenton: Chandler-David, 1960), p.90; Archer, B.H., "The Impact of Recreation on Local Economies," Planning Outlook: Special Issue, 1974, p.19; Nelson, P.E. Jr. and Perrin,

One of the most simplistic and straightforward types of regional multiplier analysis is that associated with "economic base studies." Economic base theory avoids, for the most part the interregional variables that form a major part of input-output analysis, and concentrates on a very gross industrial classification. The region is seen as having two mutually exclusive sectors to its economy: the basic sector and the service sector.⁶ The remainder of this chapter shall deal with the division between these two sectors, and discuss the derivation of regional multiplier estimates based on this division.

B. Economic Base Theory

The notion that "the reasons for the existence and growth of a region...lies in the goods and services it produces locally but sells beyond its borders" forms the foundation of economic base theory.⁷ In its simplest form then, economic base theory asserts that the growth rate of

⁵(cont'd)J.S., "A Short-cut for Computing Final Demand Multipliers: Some Empirical Results," Land Economics, vol. 54, no. 1, 1978, p.82; Wilson, J.H., op.cit., p.42.

⁶The names of these two sectors vary greatly in the literature. Although I prefer the term "basic sector," it is also referred to as the basic activities sector, the export-base sector, the economic base sector, the primary manufacturing sector, the basic employment sector, the town-building sector, the supporting activities sector, the primary or active employment sector, etc.. Similarly, although I prefer to call the economic complement of the basic sector, the "service sector", it is also referred to as the auxiliary manufacturing sector, the secondary service sector, the nonbasic service sector, the town-filling sector, the residentiary sector, the passive employment sector, and so on. The decision on which terminology is used is both a matter of personal preference and study needs.

⁷Isard, W., op.cit., p.189.

any region is a function of its export performance. This relationship can be represented by:

$$Y_i = f(X_i)$$

where Y_i is the growth rate of regional output, and X_i is the growth rate of regional exports.⁸ Intrinsic to this theory is the belief that the economic base of a region provides not only a means of payment for goods and services required in excess of that which the region itself can provide, but also support for those local activities for which effective demand is internal to the region itself. A multiplier effect is thus implicit in this theory.

In order to better understand the multiplier effect involved, it is a useful exercise to follow through the reasoning process of the economic base model. The theory asserts that an increase in the level of community exports leads to an increase in basic employment. This, in turn, leads to a increase in community income which as spent, serves to augment service employment in the community. Further, insofar as locally owned factors of production are applied to basic industries, an increase in the level of exports will lead to increased earnings, leading to additional community income and hence, to additional increases in service employment.⁹

⁸Richardson, H.W., Regional Growth Theory, (London: MacMillan, 1973), p.17.

⁹Hildebrand, G.H., and Mace, A., "The Employment Multiplier in an Expanding Industrial Market: L.A. County," The Review

The overall relationship between basic and service employment is a calculable one, and the coefficient involved represents the employment multiplier. In much the same way, an income multiplier is generated on the basis of the relationship between basic and service income.¹⁰

Certain assumptions must be made in the application of the economic base model. First, it is necessary to assume that the impact being studied occurs within certain predetermined geographic boundaries. Study area delineation is an important first step, for the numerical values of the various ratios, and the conclusions drawn from the study can be seen to be greatly affected by the base area chosen. The selection of area boundaries is dependent upon the purpose and the nature of the study conducted, as well as on such pragmatic issues as availability of data, the attempt to delimit labour and product market areas, keeping within areas of common administrative control, and so on.¹¹

Related to this whole question of study area delineation is the second basic assumption of economic base theory, which is to say the initial change in the system takes the form of an increase in the level of exogenous expenditure. This increase in exogenous expenditure is not

⁹(cont'd) of Economics and Statistics, vol. 32., 1950, p.242.

¹⁰Discussion of the economic effects is limited here to employment and income, for these are deemed to be of most importance. Alternative units of measurement will be presented later in this chapter.

¹¹Andrews, R.B., "Mechanics of the Urban Economic Base: The Problem of Base Area Delimitation," in Pfouts, R.W., op.cit., pp.118-138; Blumenfeld, H., "The Economic Base of the Metropolis," in Pfouts, R.W., op.cit., pp.238-240; Isard, W., op.cit., p.198.

limited to expanded export levels as the majority of economic base studies and the preceding introductory discussion would seem to suggest. Rather, the exogenous sector can be broadened as desired, by progressively transforming the model into one of a shorter-run nature. Thus, such traditionally endogenous activities as housing investment, local business investment, and local government investment come to be considered as part of the exogenous sector. This can be seen to broaden the degree of realism surrounding economic base theory, for exports are no longer treated as being the sole determinant of regional growth.^{1 2}

The final four assumptions to be considered are tied very closely to one another. It is assumed that the production function for basic activities remains unchanged in the face of expanding output to meet increased exogenous demand. In other words, there is a constant relationship between the inputs that an activity employs and the output it produces. This is also assumed to hold true for the service sector where output is expanded in response to increased community effective demand. In addition to constant production functions in both the basic and service sectors, many facets of the multiplier ties between the two are also assumed to be constant. Specifically, the MPC and the MPI are regarded as constant coefficients, and there is assumed to be no shift in "tastes" resulting in a greater

^{1 2}Richardson, H.W., "The State of Regional Economics: A Survey Article," International Regional Science Review, vol. 3., no.1, 1978, pp.11-12.

local consumption of basic goods. One last, very important assumption upon which the relevance of much of what has been discussed above rests, is that there exists some practicable means of expanding output in response to increased demand. This requires excess productive capacity, unemployed labour, or both. Under the assumption of constant production functions, technical coefficients of production remain fixed, and thus, both excess capacity and unemployed labour are required in expanding output.¹³

Up to this point economic base theory has been presented and discussed in fairly homogeneous terms. More precisely however, it can be seen to take on two fundamentally different forms. While both of these have actually been alluded to at an earlier point in this chapter, no attention was drawn to the division between them. In its "static" form, the economic base hypothesis states that service employment, income and population can be explained and predicted with reference to basic employment.¹⁴ For all intents and purposes, the static model can be viewed as operating in the "short-run," where all independent factors are assumed to be constant. It is this static, short-run form of the economic base model which is most preferred in impact analysis for, it can be seen to provide a fairly accurate theoretical explanation of the generation of community income and employment. Further, it

¹³Ferguson, C.E., "Statics Dynamics, and the Economic Base," in Pfouts, R.W., op.cit., p.332.

¹⁴Ibid., p.327.

is contended that the static economic base model may provide satisfactory short-run predictions of income and employment.¹⁵

Attempts to make long-run predictions of income and employment introduce the alternative form of the economic base model. This form is termed "dynamic," for it asserts that the rate of change in service employment, income and population is functionally dependent upon the level of basic employment.¹⁶ Under the dynamic model, the economic base multiplier is used to estimate the effects of future, long-run changes in the level of basic activities in a region. This is essentially an attempt at long-run prediction, and it is this use of the economic base model which is open to the most criticism. Long-run prediction must invariably be based on past or present data, and is commonly inaccurate and misleading because independent variables representing social, technological, and economic conditions cannot justifiably be held constant in the long-run. Further, many of these independent variables cannot be precisely, or even crudely estimated.¹⁷

In summary, economic base theory can be seen to provide a very simple form of regional multiplier analysis. Under this theory, the regional economy is divided into two sectors: the service sector and the basic sector. The

¹⁵Ibid., pp.329-330.

¹⁶Ibid., p.328.

¹⁷Isard, W., op.cit., pp.199-200.

multiplier itself is a product of the functional relationship between these two sectors. Its accuracy is dependent upon the assumption that certain variables within the regional economy are known and are stable over the period analyzed. In terms of efficacy, this period is the short-run. The uses of this form of regional multiplier analysis will be discussed in the next section.

C. Economic Base Theory and Regional Planning

Prior to examining the specific uses of the economic base model in regional development planning it is useful to outline what the regional planner's responsibilities are to the community at large. In this way, it is possible to comprehend the demands which are placed on the models he employs. First, the planner requires an understanding of the structure of the area's economy so as to maximize the effectiveness within the community of any initiated plans. Second, sufficient understanding allows him to estimate the direction and magnitude of secular trends within the structure. Third, with the above information "on tap," the planner has an obligation to protect the economic livelihood of the community. Finally, in total fulfillment of this obligation, the planner has a duty to promote improvement in the economic livelihood of the community.¹⁸

¹⁸ Andrews, R.B., "Mechanics of the Urban Economic Base: The Base Concept and the Planning Process," in Pfouts, R.W., op.cit., pp.156-157.

In meeting these responsibilities the regional planner can be seen to adopt two fundamentally different approaches to the use of economic data in the planning process.' It is the dominant view that the regional planner take on a relatively passive role, and merely employ economic data as a check on the appropriateness of specific plans. Plans are allowed to be guided by the present status and anticipated trends of the local economic structure. Design then becomes a product of the needs and demands of the community for such things as transportation and communication facilities, housing and zoning regulations, etc..

In the second approach to the use of economic data in regional development planning, the planner assumes a much more active role. Plans are drawn up which attempt to guide the economy towards certain perceived ideals. Design is dependent upon the planner having knowledge of optimal lines along which to steer development. This means being able to concentrate attention on those activities whose promotion will do the most good for the well-being of the community.

While these two approaches are obviously not mutually exclusive, they can be seen to differ in their analytical requirements. In assuming the passive role, the planner requires information on the region's local economic structure in aggregate. The requisite broad-scale analysis of the community's economy is referred to as an "economic survey." In taking a more active role, the planner requires

' Ibid., pp.155-156.

information on the various economic components of the local economy. In this way, he can promote those activities which may be expected to have the greatest influence on the future growth of the region. In examining these activities and the effects they have on the region, it is common for the planner to carry out a "base study". By definition, the term "base study," as opposed to "economic survey," refers to narrower terms of reference which are concerned with only one portion of the region's economic structure.²⁰

Digressing, many of the criticisms of economic base theory centre around the idea that the concept is inadequate because it fails to reckon with many facets of the local economic structure. In particular, the theory is criticised because it fails to consider important sources of income other than those exogenous to the region; it neglects, for the most part, interindustry and interregional ties (other than the broad category of exogenous injections into the system); and so on.²¹ By noting the definitional differences between base studies and economic surveys one can refute much of this criticism on the grounds that critics are expecting economic base studies to do the job of the more comprehensive "economic surveys." On its own merit, the economic base concept can be seen to be most helpful.

²⁰ Andrews, R.B., "Mechanics of the Urban Economic Base: The Problem of Terminology," in Pfouts, R.W., op.cit., p.48.

²¹ Weimer, A.M., and Hoyt, H., "Economic Base Analysis," in Pfouts, R.W., op.cit., p.31; Richardson, H.W., Regional Growth Theory, pp.20-21.

It can perhaps be generally agreed that an economic based study can "contribute" to the development of an overall, optimal plan for the region. However, care must be taken in the interpretation of results obtained from such a study. Multipliers derived from a highly aggregated study can be misleading when applied to individual economic activities. In order that the study be more meaningful, it is advisable to use a more disaggregated form of the economic base model.²² Unfortunately, multipliers of different types and different derivations are often set to inappropriate tasks or assigned to inappropriate uses.

As noted earlier, forecasting is a highly criticised use to which multipliers derived from economic base analysis are often assigned. On the assumption that the functional relationship between the service and basic sectors is stable, it is deemed possible to forecast future activity levels in the region as a whole by predicting future levels of exogenous activity. Empirical studies of the behaviour of the economic base model have, for the most part, ascertained that the key functional relationships indicated in this model are not sufficiently stable or do not follow sufficiently predictable paths when considered in the long-run. Thus, for projection and forecasting purposes, the model has a strictly limited degree of usefulness and validity.²³ To make matters worse for the regional

²²Garrison, G.B., "The Impact of New Industry: An Application of the Economic Base Multiplier to Small Rural Areas," Land Economics, vol. 48, no. 4, 1972, pp.329-337.

²³Isard, W., op.cit., pp.204-205.

development planner, the magnitude of positive government fiscal and monetary measures is difficult to forecast with much accuracy.²⁴ Hence, forecasting the effects of promoted activities is doomed before it "gets off the ground." As a result of all this, the planner must limit his use of the economic base model to essentially short-run analysis.

To summarize, regional development planners are seen to have a responsibility in insuring optimal growth and development for the region in question. In fulfillment of this responsibility the planner is often guided by a pressure for operationality which is largely a manifestation of the strong policy orientation of regional development planning. Models must be fairly simple in order to be able to move from theory to empirical testing as quickly as possible.²⁵ Economic base theory is such a model. However, it is important to keep in mind that the economic base model is essentially short-run in nature, and is really only applicable to regional development planning in the active sense. Long-run, passive applications are open to much criticism.

²⁴Wilson, T., "The Regional Multiplier: A Critique," Oxford Economic Papers: New Series, vol. 20, no. 3, 1968, p.376.

²⁵Richardson, H.W., Regional Growth Theory, p.14.

D. Methodology: Basic and Service Classification

The foundation of economic base theory is the division between those activities which can be classified as basic and those which can be classified as service. This division forms the basis of the "service-basic ratio," from which the economic base multiplier is derived. As a result, the manner in which activities are classified may have considerable effects on any results which come out of the analysis. This classification must form the first, and perhaps most important step in any economic base study.

1. Categories of Classification

A regional economy can be envisioned as consisting of hundreds of economic units all employed for the purpose of creating income. The initial problem is to consolidate these units into meaningful aggregates. In most of the actual economic base studies which have been made, the standard practice has been to categorize the economic units as either wholly basic, wholly service, or a mixture of the two.²⁶ Each of these categories will now be discussed in turn.

Economic units categorized as wholly basic "are those whose level of activity is not closely tied to the level of economic activity in the local community."²⁷ Exports are the biggest item in this group, especially when the time-frame of the study is the long-run. In the short-run however,

²⁶Isard, W., *op.cit.*, p.195.

²⁷Tiebout, C.M., The Community Economic Base Study, (New York: Committee for Economic Development, 1962), pp.74-75.

there are other income creating activities which are more or less independent of the level of community income. If such activities as residential housing investment, business investment, and local government expenditures are indeed independent of the level of local income in the short-run, then they can be viewed as functioning in the same capacity as true exports.²⁸ Thus, the production of a product for export is not the primary criterion upon which the assigning of an activity to the basic category is contingent.

For simplicity in a somewhat disaggregated analysis, economic units classified as wholly basic may be divided into the following groups: (1) manufacturing; (2) extractive industry; (3) wholesale and retail trade; (4) finance and banking; (5) political, educational, resort and amusement activities; and strictly in terms of income, (6) pensions, social insurance, relief payments, rents, royalties, and interest from elsewhere.²⁹ From the standpoint of the planner however, it may be more appropriate to introduce a more explicit geographic emphasis into this division. Regrouping can thus be carried out on the basis of the two principal space relationships of the consumer and producer. The resultant groups are: (1) basic activities which involve the movement of goods, services and capital to consumer-purchasers, and (2) basic activities which involve the movement of consumer-purchasers to the goods, services

²⁸Tiebout, C.M., "The Urban Economic Base Reconsidered," in Pfouts, R.W., op.cit., pp.284-285.

²⁹Blumenfeld, H., op.cit., p.267; Weimer, A.M. and Hoyt, H., op.cit., pp.23-24.

and capital.³⁰

The above discussion merely points out possible ways in which basic activities may be grouped. Actual grouping procedures used and the groups which are chosen must be left up to the planner's or researcher's own discretion. His decision will be dependent upon budget, time and data constraints, study needs, the region in question, and so on.

On the other side of the division question are those economic units which can be categorized as "wholly service." It is the assumption here that these activities have their level set by the level of economic activity in the local community. Included in this category are local services, retail trade, and professional as well as other services. The components of this non-basic group remain fairly stable in the short-run. They may even be looked upon as being predictable. Again however, it is the long-run where instability hampers an otherwise fairly straightforward categorization.

When analysis is over the long-run, "import substitution will play havoc with the parameters of the economic base model."³¹ By definition, import substitution implies the local production of some good or service which was previously imported. It can be seen to arise from two fundamentally different economic stimuli. First, production

³⁰For examples see: Andrews, C.B., "Mechanics of the Urban Economic Base: A Classification of Base Types," in Pfouts, R.W., op.cit., pp.54-58.

³¹Richardson, H.W., "The State of Regional Economics: A Survey Article," p.12.

of a previously imported good or service can begin when a certain minimum size of the market, or "threshold" level is reached. Local production then becomes feasible. Economic base studies can account for import substitution arising from such as case. They cannot however, account for import substitution which might occur as a result of changes in the level of technology.³² There is thus a danger that the service category may expand over the long-run, and this expansion is largely unpredictable.

Activities broadly classified as service can be aggregated into two sub-groups based on trade flows. This is in keeping with the regrouping procedure presented in the discussion of the "wholly basic" category. First, those service activities which import goods, services, and capital can be grouped together. Second, those service activities whose inputs have a local origin can be grouped together.³³ Again, this method of aggregation is but one way of regrouping economic activities into more meaningful units. The approach actually used is dependent upon the needs and constraints of the study.

The regrouping procedure presented above brings to light a third principal category of economic activities. These activities are appropriately referred to as "mixed

³²For example, a new process may make local production less costly. In much the same way, changes in transportation costs may make it more profitable to assemble durable goods locally instead of importing the finished products.

³³For examples see: Andrews, C.B., "Mechanics of the Urban Economic Base: A Classification of Base Types," in Pfouts, R.W., op.cit., pp.58-60.

activities," for they are viewed as being characterized by features of both the service and basic categories. This characterization is most often based upon the destination of the firm's output, whether this output be goods, services, or capital. Thus, manufacturers, merchants, and so on, may sell some of their output locally and some of their output elsewhere. Unfortunately, the maintaining of a category named "mixed activities" is unacceptable when it comes to the derivation of the economic base multiplier. The question is: How does one determine whether to categorize a mixed activity as basic or as service?

In point of fact, there are actually very few "pure" activities which can be identified as wholly service, or wholly basic.³⁴ These categories must thus be constructed so as to include those activities whose primary traits are either basic or service. The "wholly" prefix must be dropped in the name of practicability. The researcher or planner must then make a judgement on assigning mixed activities to the basic or service categories. This judgement will be based on the primary traits of the activity in question.

To summarize, economic activities can be grouped into three principal categories: wholly service, wholly basic and mixed. In terms of practicability in deriving an economic base multiplier, these categories are reduced to two:

³⁴Andrews, C.B., "Mechanics of the Urban Economic Base: General Problems of Base Identification," in Pfouts, R.W., op.cit., p.83.

service and basic. The actual techniques employed in assigning activities to these categories will be discussed in a later section.

In partial conclusion to the above theory, misclassification of activities to these categories, could be a problem if conclusions, and the resultant policies are different from those which would otherwise have been drawn and formulated. To at least partially compensate for this problem, accuracy in classifying can be improved by concentrating efforts on the few industries whose economic impact is expected to deviate materially from the community average. Further, if in taking an active role, as was previously discussed, the planner stresses uniformity of technique in classifying activities, the resultant multiplier can then be used as an accurate measure of the impact of various economic activities. To maintain such accuracy, suffice it to say that extreme care must be taken in classifying activities. If this care is maintained, short-run impact estimates can be a reliable guide to policy formulation. Long-run estimates have other problems.

2. Units of Measurement Used in Classification

Once the decision to consider an activity as service or basic has been made, both categories must be quantified in some way other than a mere statement of the numbers of activities contained in each. A unit of measurement must be introduced. Of prime concern in the selection of an

appropriate unit of measurement is what magnitude best represents the impact an activity, or group of activities, has on the study region. Six feasible measurement units are presented in the literature: (1) income and expenditure; (2) employment; (3) payroll; (4) value added; (5) value of production; and (6) physical production. The most important of these will now be discussed.

From a strictly economic point of view, the most desirable variable with which to quantify the economic base is some form of income measurement.³⁵ If a comprehensive approach to income measurement is taken, dollar income, outgo and internal circulation estimates for the entire community are to be considered. Included here are all monetary transactions of the community, both service and basic.³⁶ While this approach is perhaps desirable, its immensely diverse data input requirements make it too restrictive in terms of general applicability. If, as previously alluded to, the primary advantage of economic base theory over input-output analysis is its relatively relaxed data input requirements, then assuming the comprehensive approach to income measurement would be somewhat self-defeating.

³⁵Conceptually there is a problem in exactly what is meant by income. It can be measured in many ways, some of which are: income flows, income accruing to residents, factor income, value added in production, and so on.

³⁶Andrews, R.B., "Mechanics of the Urban Economic Base: The Problem of Base Measurement," in Pfouts, R.W., op.cit., pp.75-76.

An alternative to the comprehensive approach to income measurement is to simply consider income as it accrues to community residents. Required data is then limited to income reported for tax purposes. Included here are wages and salaries, dividends, interests, rents and so on.³⁷ This approach has the advantage of simplicity, without compromising the appropriateness of the final multiplier derivation.

As a result of the scarcity of regional income data, researchers must frequently turn to proxy indicators of the economic base. A brief examination of the various economic base studies portrayed in the literature reveals that employment is used as the primary unit of measurement in the majority of cases. Although income is thought to be a more sensitive and thus more desirable unit of measurement, difficulty in obtaining the necessary data has often prevented its use. This is at least partially responsible for researchers having turned instead to the more accessible employment data in quantifying the relationship between service and basic activities. An additional incentive is to be found in the fact that "total employment and its breakdown by occupation and industry are generally considered significant economic magnitudes with which planners and policy-makers must be concerned."³⁸

Thus, employment is a significant unit of measurement and is relatively easily obtainable. Data sources include

³⁷ Tiebout, C.M., The Community Economic Base Study, p.46.

³⁸ Isard, W., op.cit., p.194.

census statistics, employment services and their local branches, chambers of commerce, personnel departments of principal firms, local labour unions, etc..³ However, despite this apparent wealth of information, this approach is not without its shortcomings. First, the economic impact experienced in a community per person employed differs both between and within industrial groups as a result of wage differences. Impact measurement thus becomes more involved. Second, changes in physical productivity can have expansionary effects in associated industries, with little or no accompanying change in employment. Finally, employment measures may lead to neglect of certain identifiable economic activities involving dollar-flows. Transfer payments and capital exporting activities are cases in point.⁴

Some of the difficulties experienced when employment is used as a unit of measurement can be at least partially overcome through the use of payroll data. This data is available from census statistics, taxation bodies and similar sources. Payrolls can be used as a weighting factor in offsetting the problem of differing wages, or as a check on the accuracy of conclusions drawn from employment data. As a sole unit of measurement, however, the use of payrolls is undesirable, for it gives no indication of actual numbers

³Weimer, A.M., and Hoyt, H., op.cit., p.24.

⁴Andrews, R.B., "Mechanics of the Urban Economic Base: General Problems of Base identification," in Pfouts, R.W., op.cit., p.83; Garrison, C.B., op.cit., p.329; Isard, W., op.cit., p.194.

of job holders. In addition, perhaps the most significant drawback to the use of both employment and payrolls is "their failure to indicate either precisely or crudely the influence of "unearned" income"'' on the relationship between service and basic activities.

In summary, there are several indicators by which to measure the economic base. The most commonly used units of measure are income and employment. This is not to say, however, that the researcher must make a choice of one or the other of these, or even one of the six units of measurement previously listed. Rather, the increased accuracy and scope derived from the use of more than one unit of measurement may turn out to be worth the added cost. From a practical point of view, quantification of the relationship between service and basic activities by one or more of the above-mentioned measures must, in the final analysis, be dictated by data availability, time and budget constraints and the perceived relative merits of each of the measures.

3. Techniques Used in Classification

Perhaps the most controversial facet of economic base theory is the choosing of a technique which may be employed in identifying the service and basic components of the local economy. In general, the techniques used can be divided into

''Isard, W., op.cit., p.194.

two broad groups: those utilizing some sort of direct-survey methodology, and those utilizing some sort of indirect approach. Those techniques which are perceived as being the most important of each group will now be discussed.

a) **The Direct Approach**

Studies using some sort of direct-survey methodology obtain empirical information concerning many important aspects of economic activity through the employment of a "firm-by-firm" interview or questionnaire technique. The "sales-employment conversion method" is one such approach. In taking this approach, information regarding the proportional shares of local and export sales made by each firm is obtained through the use of personal interviews or questionnaires. The derived proportions are then applied to what Andrews calls the "working unit of measure" (eg. employment) in order to arrive at the service and basic components of the measurement factor.⁴²

The sales-employment conversion method is generally perceived as the direct-survey technique deserving the most attention. Its objectives, methodology and contrived results are straightforward and are discerned as being practicable. Its weaknesses come not from the method per se, but from the direct-survey, firm-by-firm approach itself.

⁴²Andrews, R.B., "Mechanics of the Urban Economic Base: General Problems of Base Identification," in Pfouts, R.W., op.cit., pp.89-90.

(1) Limitations to the Direct Approach

Although the direct-survey technique is generally preferred over indirect, deductive techniques due to the "freshness" of the data obtained, there are serious problems which the researcher and planner must consider. First, for anything larger than a small village community, the approach is both time consuming and expensive. Second, barring the effects of any time and budget constraints, accuracy of the approach is often diminished by both an unwillingness on the part of firms to disclose their market areas, and their frequent ignorance of the location of their customers.⁴³

Third, inaccuracy is promoted by the often indirect and linked nature of modern production. Through the employment of the direct-survey technique, firms which supply the raw materials for other firms in the area are classified as service because they sell their output locally. However, if the buyer is producing goods and services for external sale, the linked activity will be considered as basic. Thus, in the case of intermediate firms, it is not enough to simply know where the firm's output is being sold. One must also know where the buyers output is being sold. Clearly, some assumptions must be made.⁴⁴

The final problem to be considered can be visualized as being a further manifestation of fundamental weaknesses in the available source material. As previously discussed,

⁴³Blumenfeld, H., op.cit., p.248; Isard, W., op.cit., pp.196-197.

⁴⁴Isard, W., op.cit., p.197.

information derived through the employment of a direct-survey technique is often inaccurate and thus requires careful interpretation. In addition, because the number of firms engaged in supplying such things as merchandise, and personal and professional services is frequently very large, one must inevitably settle for estimates derived from some sort of sampling procedure. Accuracy then becomes a function of the reliability of the sample taken, the dependability of human judgement, and the availability of supportive data.⁴⁵

b) The Indirect Approach

In terms of overall analytical efficiency, the direct-survey technique is a most desirable tool for use in regional development planning, despite its apparent weaknesses. However, in instances where the size of the universe, speed of data collection and study cost come into play, an approach which is less desirable in terms of precision is often employed.⁴⁶ The techniques alluded to here can be generally categorized as indirect measures of the economic base. As a definitional point, the term "indirect" refers to those techniques for which the data input required is drawn from non-primary information sources (ie. pre-existing studies, statistical reports, public accounts, etc.). Several techniques which fall into this

⁴⁵Andrews, R.B., "Mechanics of the Urban Economic Base: General Problems of Base Identification," in Pfouts, R.W., op.cit., pp.92-93.

⁴⁶Ibid., p.90.

class will now be discussed.

(1) The Residual Technique

One of the first individuals to present a short-cut method of separating the local economy into its service and basic components was Homer Hoyt. In his early studies (prior to 1940) Hoyt made use of a technique which he called the "residual, or assumption method." Under this technique, basic enterprises are assumed to be all those firms whose predominant activities are basic in nature. Even those enterprises whose activities include a minor amount of local trade are considered basic. All basic activities identified in this way are then measured in terms of the number of people they employ. From those activities which are found to be predominantly service in nature are subtracted the number of employees "typically assumed to be necessary for the performance of the service functions of the community."⁴⁷ The size of this deduction is computed on the basis of an assumed ratio between service and basic employment of 1:1. The residual arising from this computation is then allocated to the basic category. Through the use of this methodology, mixed enterprises as well as those categorized as wholly basic, or wholly service are accounted for in the economic base calculation.

The weaknesses of this technique are obvious. First, and foremost, the assumption of a fixed ratio of 1:1 between

⁴⁷Ibid., p.84.

service and basic activities assumes away what would be one of the primary findings of an economic base study.⁴⁸ Second, the residual technique has been criticized because of its non-inclusiveness as a method of identifying the components of the economic base. Capital export, retirement incomes, commuter activity, and so on, are simply ignored. Finally, activities which are predominantly basic need no longer to be viewed as entirely basic, as this technique suggests. Rather, with the improvement in statistical data which has occurred over the past forty years, activities which are divided between service and basic can often be properly quantified. This is of course assuming that the time, money, and data constraints imposed are not too restrictive.⁴⁹

As a result of these weaknesses, the residual technique is no longer considered valid. Its oversimplification has lead researchers to view the approach as naive. In spite of this view, the ad hoc assignment technique incorporated into the residual approach, through which certain activities are assumed to be service, and certain activities are assumed to be basic, is frequently adopted. Necessity arising in the face of constraints generally dictates the employment of this portion of the residual approach.⁵⁰

⁴⁸ Ibid., p.85.

⁴⁹ Tiebout, C.M., The Community Economic Base Study, pp.46-47.

⁵⁰ Richardson, H.W., "The State of Regional Economics: A survey Article, " p.12.

(2) The Location Quotient Technique

A more recently devised method of assigning activities to the service and basic categories is the "location quotient" technique. The location quotient is a ratio of employment in a given industry as a percentage of total employment in one area (the "subject economy") to employment in the same industry as a percentage of total employment in another area (the "benchmark economy").⁵ The location quotient can formally be expressed as the equation:

$$L.Q. = \frac{S_i}{B_i} \cdot \frac{B_t}{S_t}$$

where S_i represents employment in industry i in the subject economy, B_i represents employment in industry i in the benchmark economy, B_t represents total employment for the benchmark economy, and S_t represents total employment for the subject economy. Employment here is only used as an example. Other units of measurement may be used instead. Which particular one is used will again be dependent upon time, budget, and data constraints.

For whichever unit of measurement is used, the inferences of the above equation remain the same. A location quotient of 1.00 infers that there is no greater relative specialization of the industry in question in the subject

⁵ Hildebrand, G.H., and Mace, A., op.cit., p.243.

economy than in the benchmark economy.⁵² In other words, the subject economy has its "fair share" of that particular industry. If the location quotient falls below 1.00, it is an indication that the subject economy has less than its fair share of the industry. If the location quotient theory is correct, this implies that the subject economy will be a "net" importer of the goods and services of that particular industry. The industry, as it exists in the subject economy, will then be thought of as "service" in nature. If, on the other hand, the location quotient for the industry in question exceeds 1.00 for the subject economy, then the area is assumed to have more than its fair share of that particular industry. This implies that the subject economy will be a net exporter of the goods and services of the industry. If this is the case, the industry may be thought of as "basic" in nature.

One of the primary criticisms of the location quotient technique can be seen to arise out of the above discussion. Simply stated, the location quotient fails to account for imports and exports in gross terms. Quantification is expressed in net terms only. As a result, there is a tendency to underestimate both imports and exports.⁵³

Much in keeping with the problem of net versus gross quantification of imports and exports under the location

⁵² Ibid., p.243.

⁵³ Isserman, A.M., "Regional Employment Multiplier: A New Approach: Comment", Land Economics, vol. 51, no. 3, 1975, p.290.

quotient technique is the fact that the export levels noted are seen to depend upon the level of aggregation employed. This then forms the second point of criticism to be considered here. When industrial categories are broadly aggregated, imports and exports which are concealed in finer sub-categories may tend to be overlooked because of cancelling each other out. If this occurs, the size of the base may be seriously understated.⁵⁴ In plain terms, inaccuracy increases with increasing aggregation.

A third main area of criticism involves the assumptions generally made under the location quotient technique. As a preliminary note, it is important to point out that in the majority of cases, the benchmark economy is one which contains the subject economy within its totality (eg. the "nation"). With this in mind, the three most common assumptions made when employing the location quotient technique are: (1) patterns of demand are not significantly different between the subject and benchmark economies; (2) productivity patterns between the subject and benchmark economies are similar; and (3) the benchmark economy is closed.⁵⁵ These underlying assumptions are thought to seriously weaken the reliability of the location quotient technique. They seldom hold true in reality, and making

⁵⁴Richardson, H.W., Elements of Regional Economics, (Markham, Ontario: Penguin Books Canada Ltd., 1969), p.30.

⁵⁵"If the L.Q.=1, this implies that the region supplies its own needs only if the nation supplies its own needs. If some national industries export, then this method understates the base by neglecting exports to other countries." Taken from Richardson, H.W., ibid., p.29.

allowance for this fact greatly complicates application of the technique.

The final area of criticism to be considered, involves the technical limitations which apply to the application of the location quotient technique. They are: (1) results vary with the size of the region chosen; (2) results vary with the type of base chosen; and (3) results vary with the industrial categories chosen. While these technical limitations are characteristic of descriptive regional economic tools in general, their implications must nevertheless be addressed in both the application of any such technique, and the interpretation of any derived results. Extreme care must be taken in these areas.

In retrospect, there are several criticisms of the location quotient technique which tend to reduce its value as a tool in categorizing activities as basic or service. However, these criticisms are not necessarily damning, and should not be overstressed. It is some consolation that the implications of the above criticisms will ultimately depend upon the requirements of the study. On the more positive side, the technique has the advantage of taking account of both direct and indirect exports. A region which has a large number of automobile manufacturing plants will no doubt also have a large number of iron and steel mills. Although the output of these mills is sold locally, it is tied indirectly to exports (the sale of automobiles). This fact is revealed

by the location quotient technique.⁵⁶ A further advantage of the location quotient technique is that it is inexpensive and can be used to reveal trends based on historical data. In summary, as long as its limitations are recognized, the location quotient technique will at least yield some reasonable estimate (perhaps on the low side) of the level of basic activity in the community.⁵⁷

(3) The Minimum Requirements Technique

An alternative technique for use is assigning activities to the service and basic categories is Ullman and Dacey's "minimum requirements" technique.⁵⁸ In essence, the minimum requirements technique is a variation of the location quotient technique. The technique is based upon the philosophy that if it is possible to determine the amount produced within any region, for consumption within that region, then it can be assumed that the remaining output is destined for export. In simple terms, the standard procedure is to first estimate the percentage of the total labour force employed in each industry for each of a number of similar communities. As a second step, the percentages for a given industry across all the communities are ranked in decreasing order of magnitude. It is then assumed that the

⁵⁶ Ibid., p.30; and Tiebout, C.M., The Community Economic Base Study, pp.48-49.

⁵⁷ Ibid.

⁵⁸ Ullman, E.L., and Dacey, M.F., "The Minimum Requirements Approach to the Urban Economic Base," Papers and Proceedings of the Regional Science Association, vol. 1, 1960, pp.175-194.

smallest percentage found for the industry in question is the minimum required by any one community to satisfy its own needs. Following from this, the remainder is considered to be basic employment. This process is repeated for all industries to yield an overall estimate of the economic base.

The contention by Ullman and Dacey that the minimum requirements technique is an improvement over the traditional location quotient method can be contested on the grounds of the criticism surrounding it. In the first place, the technique implies that every region is an exporter. Each community is viewed as supplying its own requirements in goods and services, and imports simply do not exist. Pratt argues that if this is acceptable, then the converse, a maximum requirements technique, can also be used.⁵ This approach differs insofar as it is assumed that the region with the maximum percentage employed in a particular industry meets exactly its own needs in terms of the output of that industry. Therefore, there are not exports. All regions with lower percentages are importers. A more realistic picture may be drawn if the two methods are used together, therefore allowing for the possibility of both imports and exports. In this way the parameters may be adjusted to obtain some sort of balance between imports and exports.

⁵Pratt, R.T. "An Appraisal of the Minimum Requirements Technique," Economic Geography, vol. 44, 1968, pp.17-24.

Second, Ullman and Dacey support their claim of the superiority of the minimum requirements technique by stating that averages, as used in the location quotient technique are "less meaningful and susceptible of definition than...minima."⁶⁰ Objectively, it would appear to be difficult to substantiate this assertion. As pointed out by Pratt, "intuitively it seems much more reasonable to use some measure of central tendency...as the basis of an apportionment ratio than to use a minimum measure."⁶¹

As a third point of criticism, the minimum requirements technique appears to be vulnerable to the problems of disaggregation of industrial categories in much the same way as is the location quotient technique. However, whereas the accuracy of the location quotient approach was found to decrease with increased aggregation, the minimum requirements technique is found to have just the opposite problem. Accuracy of the approach is seen to decrease with increasing disaggregation. If disaggregation is carried to its limit, the minimum requirement for almost all industrial categories would appear to be zero. This observation is based upon the fact that as disaggregation increases, and industrial categories become very small, there is a greater chance that at least one community in the size class will exhibit no participation in a particular category.⁶² Hypothetically then, the conclusion drawn from this would be

⁶⁰Ullman, E.L., and Dacey, M.F., op.cit., p.190.

⁶¹Pratt, R.T., op.cit., p.120.

⁶²Ibid., pp.122-123.

that the community has no internal needs and its entire output is for export.

At the other extreme, when aggregation is maximized, communities would vary by small amounts in terms of percentages of total employment. The needs of the community would appear to be very large, and the amount destined for export, very small. Analysis would be almost meaningless at this scale.⁶³ Between these two extremes the level of aggregation or disaggregation can be manipulated so as to yield almost any results requiring confirmation. Herein lies the principal danger of descriptive approaches in general. While it is possible to minimize inaccuracy by adopting some optimum level of aggregation for the approach used, it is difficult to confirm the appropriateness of the level adopted. As a result, extreme care must be taken in the application and interpretation of descriptive measures.

A final point of criticism to be considered in examining the minimum requirements technique deals with the assumptions made by the approach. The criticism made here is the same as that made with reference to the location quotient technique. Briefly stated, assuming away such important considerations as consumption patterns, productivity patterns, international trade, and so on can seriously undermine the accuracy and reliability of the study being carried out. Making the study more realistic by attempting to compensate for these restrictive assumptions

⁶³Ibid., p.122.

is complicated and generally not within the means of the study. Time and budget constraints are most often too restrictive.

Despite the criticism the minimum requirements technique has received, some still persist in pointing out its virtues as a basis for support of the claim that the technique remains a valuable tool for regional development planners. The technique is inexpensive, fast and reasonably accurate.‘‘ These are important considerations in the real-world application of the economic base approach.

(4) Limitations to the Indirect Approach

As noted earlier, the residual technique, the location quotient technique, and the minimum requirements technique can all be collectively categorized as indirect measures of the economic base. It is a widely held opinion that the limitations of this group of measures are sufficient to give pause. When there is adequate time, money, and data available, the division of the economic activities of the community into service and basic categories should be carried out using a more direct approach, such as those mentioned previously.

Regardless of the technique used, there are certain activities which defy any attempts at consistent classification over all studies. Perhaps the largest group

‘‘Moore, C.L., "A New Look at the Minimum Requirements Approach to Regional Economic Analysis," Economic Geography, vol. 51, no. 4, (October, 1975), p.350.

to cause problems are those activities which have been previously referred to as being "linked" in nature. The majority of firms in this category sell their output as raw materials to other firms in the area.⁵ If one considers this to be merely a local sale of local output, as does Blumenfeld, then the firm should be classified as service.⁶ However, if one considers this sale to be merely an intermediate step in some eventual export sale, as does Andrews, then the firm should belong to the basic category.⁷ The procedure adopted will depend upon the point of view of the researcher.

The linked industry question is not limited to firms which supply raw materials to local industry. Included in this area of problems are a wide variety of transportation and communication activities. For the most part, local transportation is considered to be a "service" to the community. Unfortunately, this is where agreement between studies ends. Some believe all other transportation to be basic. Others, such as Blumenfeld, believe that "only those transportation activities which serve movements between two outside points earn money from the outside" and thus, should be considered basic.⁸ All other forms of transportation are seen to be no different from the supply of electricity,

⁵As an example, consider suppliers to a local oil refinery or a local automobile manufacturer.

⁶ Blumenfeld, H., op.cit., pp. 256-257.

⁷Andrews, R.B., "Mechanics of the Urban Economic Base: General Problems of Base Identification," in Pfouts, R.W., op.cit., p.84.

⁸Blumenfeld, H., op.cit., pp.258-259.

water, sewage removal or any other local service.

Communications, for the most part, fall into the service category also.⁶ However, when local advertising is purchased by non-local firms to promote the sale of their products, the sale of broadcasting time, or newspaper space, is considered basic. While this may appear to be reasonably straightforward, there remains the question of what to do if the local media promotes the sale of local output to buyers outside the economic community, but within broadcasting or circulation range. Solutions to such an interpretation problem can be very confusing.

Another difficulty experienced when attempting to identify the economic base of the community concerns the classification of public employees. Basically, there are two schools of thought. The first attempts to make the division between service and basic on the basis of who benefits from the work performed.⁷ If government employees in a local area serve that area, they are thought to be service in nature. If they work to serve an outside population, then they are classified as basic. It is the opinion of the second school of thought that this does not make sense. Classification, in their minds, should be based upon the source of the income earned by the public employees.⁸ Thus,

⁶ Andrews, R.B., Mechanics of the Urban Economic Base: Special Problems of Base Identification," in Pfouts, R.W., op.cit., pp.110-111.

⁷ Ibid., pp.106-107.

⁸ Blumenfeld, H., op.cit., p.259; Mellor, I., and Ironside, R.G., "The Incidence Multiplier Impact of a Regional Development Program," The Canadian Geographer, vol. 22, no. 3, (Fall, 1978), p.234.

if the source of funding is outside the region they are classified as basic. Federal government employees within the region are an example here, for their income represents a net gain to the community. Alternatively, if the source of funding is within the region, public employees are classified as service. In cases where the income of public employees cannot be easily divided between sources within and sources outside the community, some sort of apportionment method must be employed. This is often the case when attempting to categorize provincial government employees that are concentrated within some urban centre which is a part of the delineated study area. Only a portion of their income originates from within the city. This portion can be assigned to the service category. The rest is basic. In cases such as this, categorization can be a very complex procedure.

Another problem which is often encountered when attempting to identify the local components of the service/basic dichotomy involves commuters. In many communities there are residents who commute to non-local jobs. Their income is paid by non-local sources and as a result, they are classified as basic. This much is clear. The problem lies in determining a suitable means of enumerating this "basic" entity.⁷² What is needed is some sort of local study into commuter patterns. If none exists, either such a study must be initiated, or some other source

⁷²Garrison, C.B., op.cit., p.332.

of information delved into. Unfortunately, this adds an additional step to the economic base analysis.

A further problem which a researcher or planner may come across in attempting to identify the economic base of a study region has to do with those activities which cater to tourists. As was pointed out in a previous chapter, the tourist "is an on the spot consumer of goods and services which the community has available to exchange for capital brought in from outside."³ Industries which deal almost exclusively with tourists are thus classified as basic. Even if local residents make up a small percentage of their business, firms which are tourist oriented such as filling stations, motels, hotels, souvenir shops, and so on, generally have no difficulty in making an estimate of the proportion of their business which can be attributed to tourists, and thus classified as basic. It is, however, unfortunate that this ease of classification is not universal among firms dealing with tourists to a lesser extent. Large department stores, personal service establishments, and other activities which deal primarily with local residents will frequently be unable to give even an approximate breakdown of their business on the basis of tourists and local customers.

One final area of difficulty to be discussed is the possible effects of absentee ownership of businesses on the

³ Andrews, R.B., "Mechanics of the Urban Economic Base: Special Problems of Base Identification," in Pfouts, R.W., op.cit., p.103.

economic base of the region. Some view this as a perplexing problem in identifying the economic base. However, the amount of importance placed on this difficulty would appear to be greatly exaggerated. In analyzing the economic base "it seems that the most important considerations are not the settling point of profits and the location of ultimate managerial control."⁴ Rather, it is more logical to think in terms of the number of employees of a firm and their place of residence, and in terms of the geographical distribution of its production processes. In this regard, the non-locally controlled firm should be considered in much the same way as is any other.

While there are many more such problems which may be encountered, they are all for the most part not extremely complex. All such difficulties are however, frequently disconcerting and usually somewhat confusing. If consideration is given to these problems, and some sort of adjustment or compensation made, there can be very little doubt that the study in question will benefit from a certain degree of increased accuracy. While this is generally a desired result, there is a tradeoff which must be made between the resulting increase in accuracy and the desired simplicity of the study being carried out. It must be kept in mind that there are more accurate methods of obtaining the economic picture of a community. However, when time,

⁴Ibid., p.113.

budget, and data constraints are imposed, a more simplistic study which maintains a certain level of accuracy must be implemented. The economic base model fits this requirement, but too much refinement can impinge upon its advantage in this regard. The entire case rests with the demands of the study in question.

c) Summary

In summary, one can perhaps see that economic base analysis is not a well defined tool. There are several options to consider in deciding upon the categories of classification to be used, the units of measurement to be employed in classification, and the technique to be used in identifying the components of the service/base dichotomy. Each option is viewed as having both advantages and disadvantages. The researcher or planner must weigh these while keeping in mind constraints which might apply and, the requirements of the study in question. The size and complexity of this task alone may certainly operate as a deterrent to the use of economic base analysis. However, in the opinion of this researcher, greater insight in defining the tool to be used may be gained by looking at the form of desired output from such a study. Discussion of this prospect will comprise the next two sections of this chapter.

E. Base Ratios

The principal output of any economic base analysis is the relationship which is found to exist between service and basic activities in a community. This relationship is expressed in ratio form. The "base ratio" as it is most commonly termed, is ultimately the single most important component in the derivation of the economic base multiplier. Other components are parameters which are added to the ratio so that a more realistic multiplier may be arrived at.

A complicating factor in the use of base ratios for deriving regional multipliers, is that they tend to vary within and between regions, and over time.⁷⁵ The causes of differences in base ratios are reasonably straightforward. In the first place, it is usually the case that different communities have different economic bases. There are no two which are identical. Second, differences in ratios may simply be due to regional economic cycles. Third, geographic location may contribute to ratio differences, especially within regions. Communities which are close to large urban centres, or the more highly developed areas of a region may tend to rely on the goods and services such neighbours provide. The service/basic ratio for that portion of the community will thus be smaller than it would be under relative geographic isolation. More isolated communities can be expected to have greater degrees of self-sufficiency.⁷⁶

⁷⁵Weimer, A.M., and Hoyt, H., op.cit., p.30.

⁷⁶Harvey, A.S., "Spatial Variation of Export Multipliers: A Cross Section Analysis," Land Economics, vol. 49, no. 4, 1973, pp.471-472.

Allied to this is a fourth cause of base ratio differences. Generally speaking, the larger the community, the higher the base ratio. Larger communities are usually more "complete" in terms of branches of production, and are thus relatively more self-sufficient.⁷⁷ Finally, the age, or developmental maturity of the area in question can have significant influence of the service/basic ratio which is found to exist. Characteristically, as a community matures it appears that the level of service activity increases at a faster rate than does the level of basic activity. Young regions tend to concentrate more on export. However, as the region grows, so does local demand. As a result, the level of service activity increases.⁷⁸

Differences in base ratios caused by factors such as those mentioned above do not always enter into the analysis of a region's economic base. The importance of the various factors giving rise to base ratio differences is largely dependent upon the size and make-up of the region under study. If the ratio of service to basic activities is constant across the specified study area, then any base ratio differences which may exist between regions are not relevant to static economic base analysis.

⁷⁷Blumenfeld, H., op.cit., p.263.

⁷⁸Andrews, R.B., "Mechanics of the Urban Economic Base: The Concept of Base Ratios," in Pfouts, R.W., op.cit., pp.145-146.

F. The Economic Base Multiplier

As alluded to in the introduction to this chapter, the relationship which is found to exist between service and basic activities in a region can be used in deriving regional multiplier estimates. If employment or income is used as a unit of measure in the analysis the economic base multiplier can be most simply represented by the equation:

$$\text{Economic Base Multiplier} = \frac{1}{1 - \frac{S}{T}} = 1 + \frac{S}{B} = \frac{T}{B}$$

where T is equal to total employment or income in the region under study, S is equal to that portion of total income or employment which is service and B is equal to that portion of total income or employment which is basic.⁷ The assumption here is that the service/basic ratio is constant. In this form, the economic base multiplier shows the employment or income generated in the regional economy by the creation of one employment or income unit in the base sector. The multiplier coefficient will thus be greater than one.

Implied but not plainly expressed in the economic base multiplier equation are certain propensities which affect its value. Theoretically, the economic base multiplier could

⁷Davis, H.C., "Economic Base and Input-Output Multipliers: A Comparison for Vancouver, B.C.," Annals of Regional Science, vol. 9, no. 3 (November, 1975), p.2; Harvey, A.S. op.cit., p.470.

be expressed as:

$$\text{Economic Base Multiplier} = 1 + \frac{c}{m + b}$$

where c is equal to the marginal propensity to consume locally produced goods and services, m is the marginal propensity to import, and b is the marginal propensity to lend abroad. However, in the static form of the economic base model this formulation does not add any new information to that already gained from the preceding multiplier equation. Rather, it only serves to direct attention towards certain magnitudes which are at least partially responsible for the observed size of the base ratio.*° Unfortunately, the added task of calculating these propensities is seldom seen to be worth the gain. It is therefore an advantage of the static form of the economic base model that these propensities are implicit, and as a result, need not be calculated.

Thus it is that the economic base multiplier, in its most accepted form, is based entirely upon the relationship which is found to exist between service and basic activities in a region. For the most part this relationship has been defined through the use of one of the three main techniques

 *°Sirkin, G. "The Theory of the Regional Economic Base," Review of Economics and Statistics, November, 1959, pp.426-427.

discussed above (the residual technique, the location quotient technique, or the minimum requirements technique). Some studies however, have used more complex regression methods in attempting to explain the service-basic relationship.

An early example is the study by Hildebrand and Mace, entitled "The Employment Multiplier in an Expanding Industrial Market: Los Angeles County, 1940-1947."¹ In this study, industries were first grouped as service or basic through the use of location quotients as an empirical index of the primary market location. Following from this, monthly employment statistics were used to calculate the economic base multiplier by a simple linear regression of the total service employment on basic employment.²

A more recent use of regression analysis in estimating the economic base multiplier involves econometrics. In their article entitled "Regional Employment Multiplier: A New Approach," Mathur and Rosen estimate the basic and service portions of regional employment in each industry from time series data.³ The statistical method used is ordinary least squares regression adjusted to eradicate serial correlation. A key assumption in the study is that the level of basic employment is a function of national production. On this assumption, regional employment in each industry is

¹ Hildebrand, G.H., and Mace, A., op.cit., pp.244-246.

² Ibid., p.244.

³ Mathur, V.K., and Rosen, H., "Regional Employment Multiplier: A New Approach," Land Economics, vol. 50, no. 1, 1974, pp.93-96.

regressed against total national employment to yield the service/basic division of regional economic activity.

Regardless of the technique used in determining the economic base of a community, the desired output from such a study is the economic base multiplier. The size and accuracy of this multiplier is largely dependent upon the thoroughness and uniformity of data collection procedures, as well as the reliability of data sources. What is clear from the literature on economic base analysis is that a great deal of caution must be observed in the application of derived multipliers. Given an accurate division of economic activities into the basic and service categories, the economic base multiplier is in essence only applicable to regional development planning in the active sense, and for a fixed point in time.

G. Conclusion

It is widely held that economic impact analysis can be an important factor in both public and private sector economic planning. However, these sectors frequently place certain demands on the analytical tool to be used. Time and budget constraints often make it necessary that the analysis be as quick, inexpensive and accurate as possible. Economic base analysis fits these requirements.

The value of the theory is that it provides objective estimates of the local economic impact that results from the

existence of (or changes in the size of) an exogenous input into the local economy. Further, it does this in a relatively simple, inexpensive and quick fashion. One must keep in mind however, that estimating the impact through the use of economic base analysis does not enable one to accurately predict future impacts on the local economy. To maintain both the reliability and the credibility of the approach, it is necessary to limit its use to the short-run. A great deal of the criticism surrounding the economic base model can be dismissed if this limitation is upheld.

V. THE CASE STUDY: HECLA PROVINCIAL PARK

A. Introduction

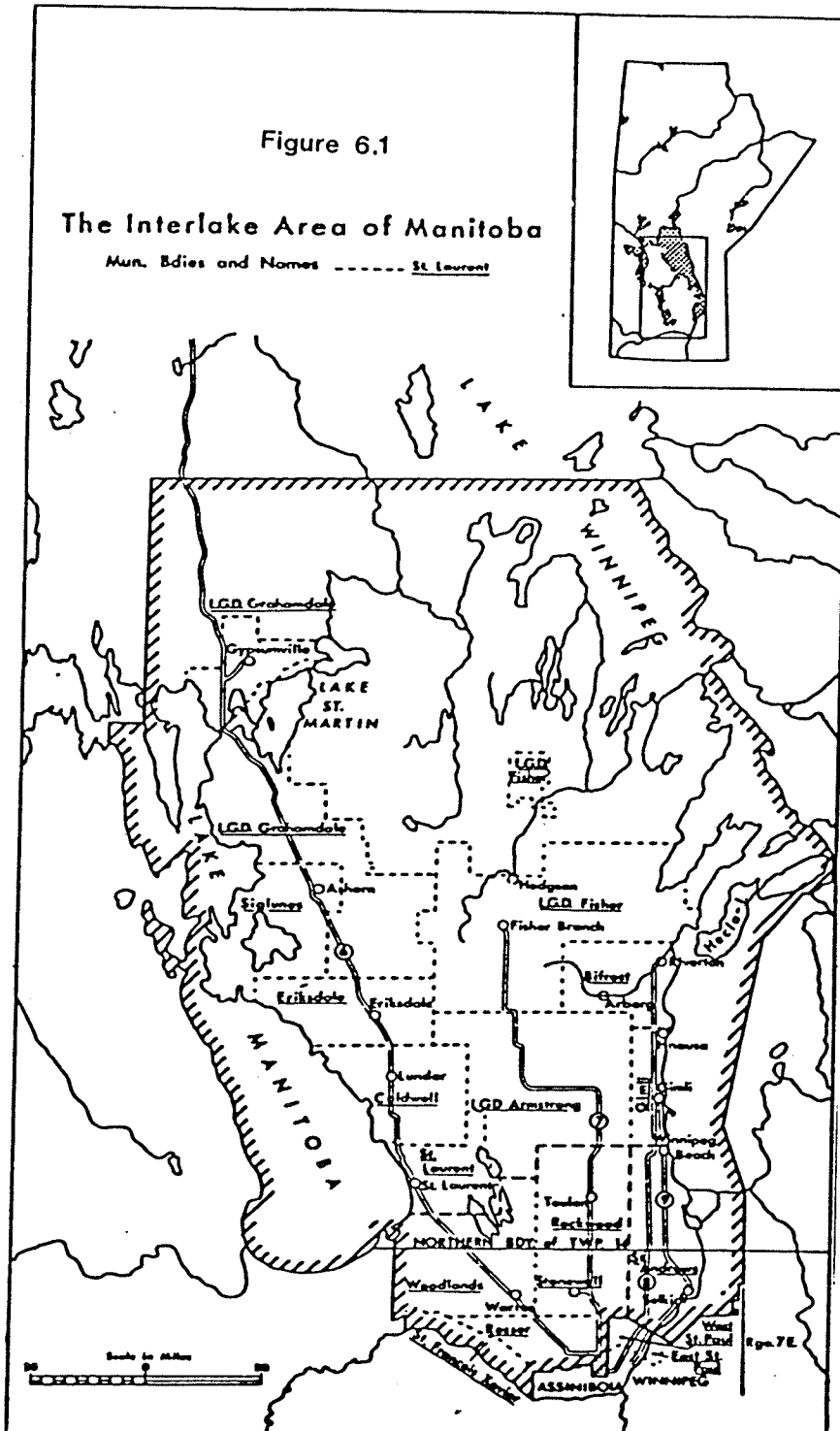
It has been suggested that, notwithstanding a number of reservations, the tourist industry may prove useful in inducing regional economic development. It has further been suggested that it is possible to provide a reasonable estimate of the regional economic impact of the tourist industry through economic base analysis. These two ideas form the stated hypotheses of this thesis.

The purpose of the following chapter is to present an empirical study of visitor expenditure in and around Hecla Provincial Park in the Interlake Area of Manitoba. It is felt that the particular case study chosen and subsequent analysis will provide the basic information necessary in drawing certain conclusions regarding both the regional economic impact of the tourist industry, and the merits of economic base analysis as a tool for measuring this impact.

B. The Interlake Region and Hecla Provincial Park

1. The Interlake Region

The Interlake Region of Manitoba is an area of approximately 26,800 square kilometres. The boundaries of the region follow the shores of Lakes Winnipeg and Manitoba on the east and west sides respectively (Fig. 5.1). In the south the region is bounded by a line running east along the Assiniboine River to Winnipeg, skirting the northern edge of



Source: Canada, Department of Regional Economic Expansion, Manitoba: Federal-Provincial Agreement (As amended October 12, 1972) Covering a Development Plan for the Interlake Area, (Ottawa: Queen's Printer, 1972), p. 17.

the city, and then ending east of the Red River. From this boundary, the region stretches north to the 36th township line at approximately 52°10'N latitude.'

The region is comprised of 10 Rural Municipalities and 3 Local Government Districts, the population altogether totalling more than 53,000.² Of this, 15,895 (30%) reside in settlements with a population of over 1,000. These include Selkirk (10,360), Stonewall (2,161) and Teulon (1,076). The remainder reside on farms or in centres with populations of less than 1,000.

Over one half of the regional workforce is employed in agriculture, in spite of the fact that the soils of the region appear to be only marginally supportive. Soils are characteristically poorly drained and contain unfavourable amounts of lime and rock. As a result, the region is thought to be unsuitable for grain farming, but satisfactory for livestock.³ Fishing was at one time a major industry, but because of over-fishing and mercury pollution the number of people employed in this industry has been rapidly decreasing. In terms of alternatives, prospects for developing or expanding mining, forestry or trapping appear poor.⁴

¹This is the Interlake Region as defined under FRED.(ie. Fund for Rural Economic Development program, as implemented during the period 1967 to 1977).

²Population as of December 1, 1978; source: Manitoba Health Services Commission.

³Howe, N.S., "A Simulation of Regional Development in the Interlake Region of Manitoba," (unpublished MNRM Practicum, University of Manitoba, 1980), p.7.

⁴Ibid., p.8.

The region's economic woes have traditionally been blamed on this lack of a quality resource base. The area has been characterized by low incomes, high unemployment and underemployment, low adult education levels, poor housing conditions and generally low standards of living.⁵ In addition, public and private services have been frequently high in cost, low in quality, and drawn from a limited range of options. Government intervention in the early 1960's set about to investigate these problems and attempted to formulate and implement solutions.⁶

2. ARDA and FRED

In 1961, the Agricultural Rehabilitation and Development ACT (ARDA) was passed by the Government of Canada. This act provided a basis for future financial agreements between the federal and provincial governments in two main subject areas. Specifically, funding was to be made available for both agricultural research and the development of income and employment opportunities in agricultural areas. The Interlake Area was chosen as a test case in Manitoba because of its obvious economic problems, and the fact that data collection and analysis is simplified by the

⁵Gillies, I., and Nickel, P., "Regional Development in Manitoba's Interlake: Designing, Managing and Evaluating a Regional Plan," in Nickel, P., and Gillies, I., ed., Regional Development in Manitoba's Interlake: Two Perspectives, (University of Manitoba: The Natural Resource Institute, 1977), p.27.

⁶Barnard, J.R., MacMillan, J.A., and Maki, W.R., "Evaluation Models for Regional Development Planning", Papers of the Regional Science Association, vol. XXIII, 1977, pp.117-118.

region's relatively small size and straightforward delineation. ARDA programs in the Interlake were valued at \$3 million.

Through the work of ARDA it was recognized that the problem in the Interlake was basically one of under-utilization of available resources. "The land, labour, water, and capital were sufficient but a bit of direction and stimulus was needed to get things moving."'⁷ Thus, in 1966 the Fund for Rural Economic Development (FRED) was created. This ten year fund (April 1967 to March 1977) was designed to actively utilize available resources in order to "promote economic development, increase income and employment opportunities, and raise the standard of living."⁸ Five slow-growth regions were singled-out across Canada, and it was hoped that FRED could help them realize their potential. Programs aimed at reaching this objective were to be implemented in the areas of education, manpower, communication and transportation, agriculture, fisheries, and recreation.'

The Interlake was chosen to be a recipient of FRED funds because of its particular problems and its potential for development. A total of \$85,085,000 was allocated to the Interlake Region. Under the cost-sharing arrangement, the

⁷Interlake Development Corporation Inc., Interlake Development, (Stonewall: Interlake Publishing Ltd.), p.1.

⁸Manitoba, Department of Tourism and Recreation, "FRED Recreation Program for the Interlake Area" (unpublished report, 1969), p.1.

⁹MacMillan, J., and Lyon, S., "The Interlake Experience: An Evaluation of Rural Development Programs, 1967-1977", in Nickel, P., and Gillies, I., ed., op.cit., p. v.

Government of Canada would provide \$49,562,000, while the Province of Manitoba would provide \$35,523,000. Amendments to total program allocation in 1972 resulted in an allocation of \$28.6 million to manpower training, \$26.7 million to education and schools, \$2.2 million to administration, and \$27.5 million to resource improvements. Eleven percent (\$2.96 million) of the money allocated to resource improvements was to be spent on the development of a major recreation area, and the development and improvement of property of high recreational capability along the west shore of Lake Winnipeg. Additional amendments in 1976 raised the amount of money originally budgeted for recreational development to \$4.26 million. By the end of year nine (March 31, 1976), \$3.94 million had been spent. The development of Hecla Provincial Park accounted for \$2.76 million (70%) of this expenditure. An additional \$2.4 million was supplied by the Manitoba government bringing the total amount of money spent on the Hecla Provincial Park development program to \$5.1 million (not counting \$440,073 on the first stage of the Gull Harbour Lodge).¹⁰

3. Hecla Provincial Park

Hecla Provincial Park is located 177 kilometres north of Winnipeg and was officially opened in June 1975. The park covers an area of approximately 863 square kilometres, over 50 percent of which is water. Several islands make up the

¹⁰Ibid., pp. 3-6, 87, 89, 119-158.

park (Fig. 5.2) and to date, recreational development has been limited to Hecla Island. Development includes hiking trails, beaches, docks, an amphitheatre, an 18-hole golf course, tennis courts, 213 campsites, approximately 130 picnic and/or overflow sites, 20 vacation cabins, and a 59 unit resort hotel. One hundred of the 213 campsites were not opened until the summer of 1979.

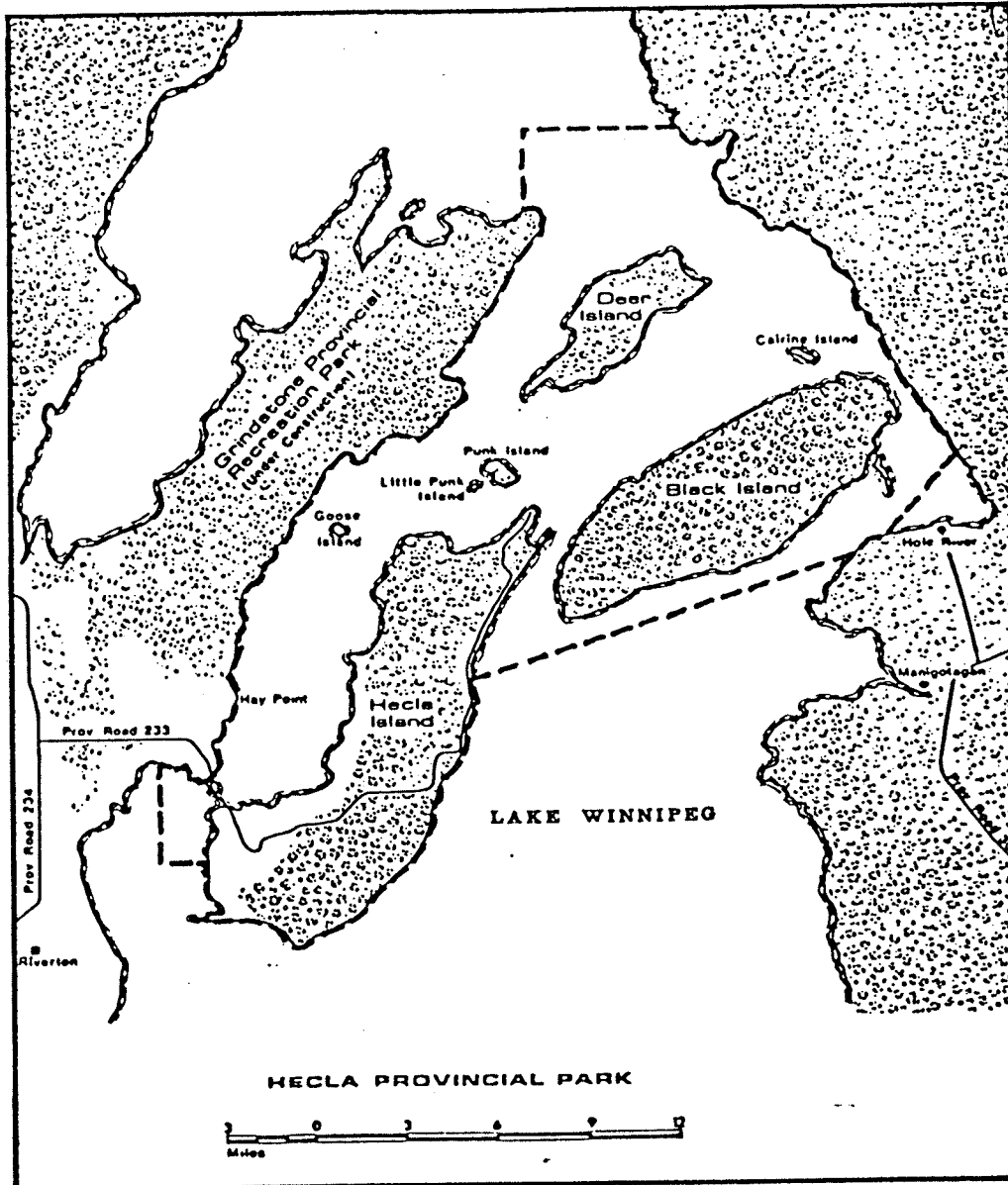
From the point of view of FRED, the primary goal in developing Hecla Provincial Park was to provide construction and service jobs in the operational stages. Estimates show that the construction of the park between 1969 and 1977 generated \$4.52 million in gross sales, increased household income by \$2.1 million, and generated 492 man-years of additional employment.¹¹ It was expected that the development of Hecla Provincial Park would have an on-going impact on the local area as visitation levels increased, but from the viewpoint of FRED, this was not considered an integral component in evaluating the effectiveness of recreation in the overall development plan.¹²

As previously alluded to, it is the intention of this thesis to examine the prospect of on-going impacts, and to do so using a methodology which is quick, inexpensive, and reasonably accurate. In fulfilling this objective, economic

¹¹Ibid., p.91.

¹²Ibid., and Manitoba, Department of Tourism and Recreation, op.cit., pp.1-2.

Figure 5.2
Hecla Provincial Park



Source: Manitoba, Department of Tourism, Recreation, and Cultural Affairs, Parks Branch, Hecla Provincial Park, (a published map), (Winnipeg: Queen's Printer, 1977).

base analysis is used to investigate the impact of visitor expenditures during the summer of 1978. It is assumed that the expenditure attributable to the park will be concentrated in the area immediately surrounding the park.¹³ For this reason, the analysis is only concerned with that portion of the Interlake Region close to the park.

4. The Study Area

The present study attempts to determine the value of total expenditures in the Interlake Region by visitors to Hecla Provincial Park, as a result of their visit to the park. While these expenditures are calculated for the entire Interlake Region, it is expected that the on-going impact in terms of the regional economy is limited almost entirely to the area immediately surrounding the park. To simplify data collection and analysis, the area is delineated by the boundaries of the Local Government Districts (LGDs) of Armstrong and Fisher, and the Rural Municipalities (MRs) of Bifrost and Gimli (Fig. 5.1). This area provides a significant portion of the labour and services required in park operations and maintenance, as well as services to park visitors.¹⁴

¹³Discussion with the many visitors interviewed during the study indicated that the majority of purchases associated with the visit to Hecla Provincial Park are actually made either at the point of origin or within the immediate vicinity of the park itself. This is understandable considering the relative isolation of the park from other areas providing spending opportunities.

¹⁴MacMillan, J., and Lyon, S., op.cit., p.92.

The next section of this chapter presents a discussion of the methodology employed in deriving multiplier estimates to be used in assessing the overall impact of visitor expenditures on regional income and employment. Multipliers are calculated for the area mentioned above.

C. Economic Base Analysis and Multiplier Derivation

As mentioned previously, the most comprehensive method of estimating multipliers is through the construction of an input-output model for the area of concern. However, as also noted, this type of analysis can be time-consuming and expensive and is clearly beyond the means of most "park-oriented" impact studies. As a result, the majority of these studies either ignore multiplier effects altogether, or simply adopt multiplier values from other studies. Brown's 1975 study of visitor expenditures at Hecla Provincial Park serves as an example here.¹⁵ This study, in its rather limited use of multipliers, adopts values from an input-output study of the Interlake Region in which calculations were derived from 1968 survey data.¹⁶

Without attempting to evaluate the accuracy of Brown's study in terms of the estimated multiplier impact of visitor

¹⁵Brown, W.A.N., "The Role of Outdoor Recreation in Regional Development: A Study of Hecla Provincial Park," (unpublished Ph.D. Dissertation, University of Manitoba, 1976).

¹⁶MacMillan, J.A., Lu, C., and Framingham, C.F., Manitoba Interlake Area: A Regional Development Evaluation, (Iowa, Ames: The Iowa State University Press, 1975).

expenditures, it would seem that there can be problems when multipliers are adopted from other studies. First, input-output tables are seldom available for the specific area under study. Researchers must thus attempt to alter multiplier estimates to more adequately reflect the economic situation in the region of immediate concern. In Brown's study, the multiplier estimates used were calculated for the entire Interlake Region, whereas one would suspect that the majority of the impact from visitor expenditure probably accrued to the locality adjoining Hecla. Therefore, the relevant multiplier should more appropriately be that obtained for the region immediately surrounding Hecla. An additional problem is that multiplier estimates adopted from input-output studies of previous years may prove inaccurate for use in more recent studies. Regional economic conditions can change rapidly, therefore changing the multipliers that apply. In Brown's study, the multiplier estimates adopted were seven years out of date. The resulting error could be large in view of the fact that in the interim period there were government programs at work aimed at bettering the regional economy.

The above observations point to the fact that multiplier estimates adopted from other studies are generally not adequate. In studying the economic impact of visitor expenditures it would be ideal to calculate new multiplier estimates for each case study. However, as mentioned, with conventional techniques in estimating

regional multipliers (ie. input-output analysis), this is more often than not impossible. Economic base analysis has the potential of filling this void. The following analysis will illustrate this use of the economic base technique.

1. The Analysis

a) Introduction

The first step in any economic base analysis involves the identification of the service and basic components of the local economy. As outlined in chapter four, there are several techniques which can be used for this purpose. All have advantages and disadvantages. For the purposes of this study, indirect techniques are favoured over those of a direct nature. If economic base analysis is to be more practicable than input-output analysis in estimating park-oriented, economic impact, then this philosophy must be carried through each stage of the analysis. Indirect approaches to determining the economic base are less expensive, less time consuming, and require less input data than the more direct approaches.

In view of the above analytical requirements, the Location Quotient Technique is the most appealing indirect technique of those presented in chapter four. The Location Quotient Technique is a tried approach for determining the regional economic base. It is generally contended that as

long as its limitations are recognized,¹⁷ and sufficient care is taken in its calculation, the Location Quotient will yeild a reasonably accurate estimate of the level of basic activity in a community.¹⁸

The Location Quotient is applied to specified economic categories to determine if each category can be best described as basic or service. The Location Quotient can be expressed in terms of either income or employment, depending upon time, budget, and data constraints. This particular study uses employment in calculating Location Quotients because the information is readily available. The Location Quotient can be formally expressed as the equation:

$$L.Q. = \frac{S_i}{B_i} \cdot \frac{B_t}{S_t}$$

where S_i represents employment in sector i in the subject economy, B_i represents employment in sector i in the benchmark economy, B_t represents total employment for the benchmark economy, and S_t represents total employment for the subject economy. If the Location Quotient for a particular industry is calculated to be greater than 1.00, the area is assumed to be a net exporter of the goods and services of that particular sector. The economic acitivity

¹⁷A description of these limitations is presented in chapter four.

¹⁸There is some indication that the Location Quotient may underestimate slightly the level of basic activity. However, underestimation is not necessarily "bad." In the opinion of this author, the technique may be more correctly termed "cautious."

is then thought to be "basic" in nature. If the Location Quotient for a particular sector is calculated to be less than 1.00, the area is assumed to be a net importer of the goods and services of that activity. The sector is then thought to be "service" in nature.

Once the sectors in the region have been classified as either basic or service, the "base ratio" can be calculated. The economic base multiplier is the quotient of this ratio. Actual calculation procedures for the Interlake example are outlined below.

b) Actual Calculation

As a word of caution, the calculations presented below are based on data which are the best available, given the constraints of the present study. Even so, it must be noted that the primary intent of presenting this information is to illustrate the methodology employed in calculating the economic base multiplier and so measurement accuracy is deemed to be of secondary importance.

The first stage in the calculation of the economic base multiplier involves dividing employment in the regional economy into industrial categories. Table 5.1 presents this information for Manitoba as a whole, and for the study area as previously specified.

TABLE 5.1

EMPLOYMENT: INDUSTRY DIVISIONS, 1971

Industry Divisions	Manitoba ¹	The Study Area ²				
		Total	Bifrost	Fisher	Armstrong	Gimli
agri- culture	47,065	1,560	385	690	390	95
forestry	710	24	5	15	2	2
fishing- trapping	395	11	5	2	2	2
mines, quarries & oil wells	7,805	19	2	5	2	10
manu- facturing	56,945	140	30	25	30	55
con- struction	22,320	315	85	75	95	60
trans- portation & commun- ication	40,015	145	20	45	60	20
trade	65,215	165	35	65	40	25
finance, insurance & real estate	15,810	8	2	2	2	2
community & personal services	94,525	155	20	50	30	55
public admin. & defence	34,010	475	50	55	40	330
unspecified	29,150	135	10	35	45	45
Total	413,920	3,160	650	1,065	740	705

¹Statistics Canada, catalogue number 94-741.

²Statistics Canada, unpublished information.

Note: Columns may not equal row total values because a random rounding system is employed by Statistics Canada.

Employment information for the year 1978 was not available for the study area. As a result, estimates were made based upon the provincial change for the 1971-1978 period. In deriving these estimates it was implicitly assumed that employment in the study area underwent changes similar to employment in the province as a whole. This may, or may not be a valid assumption, but investigation of this prospect is not within the scope of the study. The estimated figures are presented in Table 5.2.

The next stage in the analysis involves calculation of the Location Quotients. For the purposes of this calculation, Manitoba is considered to be the benchmark economy while the study area is considered to be the subject economy. The actual equation used in calculating the Location Quotient is:

$$L.Q. = \frac{\text{study area empl. in industry } i}{\text{Manitoba empl. in industry } i} \times \frac{\text{total Manitoba empl.}}{\text{total study area empl.}}$$

Calculated Location Quotients are presented in Table 5.3.

Location Quotients provide the functional basis for classifying each region's industrial categories as either basic or service. As mentioned previously, Location Quotients with values greater than one indicate a basic activity, while Location Quotients with values less than one indicate a service activity. Therefore, from Table 5.3 it

TABLE 5.2

EMPLOYMENT: INDUSTRY DIVISIONS, 1978

Industry Divisions	Manitoba ¹	The Study Area ²				
		Total	Bifrost	Fisher	Armstrong	Gimli
agri-- culture	44,000	1,459	360	645	365	89
forestry	1,100	37	8	23	3	3
fishing-- trapping	1,200	33	15	6	6	6
mines, quarries & oil wells	5,700	14	2	3	2	7
manu-- facturing	59,000	145	31	26	31	57
con-- struction	26,000	367	99	87	111	70
trans-- portation & commun- ication	48,000	174	24	54	72	24
trade	78,000	198	42	78	48	30
finance, insurance & real estate	23,000	12	3	3	3	3
community & personal service	124,000	203	26	66	39	72
public admin. & defence	31,000	153	46	50	36	21 ³
unspecified	-	-	-	-	-	-
Total	440,000	2,795	656	1,041	716	382

¹Statistics Canada, catalogue number 71-001; and Department of Labour and Manpower.

²Estimated on the basis of provincial labour force change between 1971 and 1978. It is speculated that noted sectoral increases in employment for the study area are high estimates given the fact that the Interlake has traditionally been a comparatively slow growth region.

³This figure had to be estimated because of the closure of Gimli Air Force Base in August of 1971. For the three other administrative units in the study area, employment in the public administration and defence category was expressed as

a percentage of employment in the remaining categories. The average of these percentages was calculated and applied to the R.M. of Gimli situation to obtain an estimate of the remaining employment in the public administration and defence category.

TABLE 5.3
LOCATION QUOTIENTS

Industry Divisions	Region		
	the total study area	Fisher and Bifrost	Fisher, Bifrost, and Gimli
agri-culture	5.22	5.91	6.24
forestry	5.29	7.30	6.54
fishing-trapping	4.32	4.53	4.76
mines, quarries & oil wells	.38	.23	.41
manu-facturing	.39	.25	.48
con-struction	2.22	1.85	2.47
trans-portation & commun-ication	.57	.42	.53
trade	.40	.40	.48
finance, insurance & real estate	.08	.07	.10
community & personal service	.26	.19	.33
public admin. & defence	.78	.80	.95
unspecified	-	-	-

can be seen that agriculture, forestry, fishing and trapping, and construction are all basic industries in the study area. The remaining industries are service.

The relationship which is found to exist between service and basic activities in a region is used in deriving economic base multiplier estimates. Different multipliers can be calculated for both the employment and income effects.

(1) Employment Multiplier

The employment version of the economic base multiplier is calculated by the formula:

$$\text{Employment Multiplier} = \frac{1}{1 - \frac{S}{T}} = 1 + \frac{S}{B} = \frac{T}{B}$$

where T is equal to total employment in the study area, S is equal to that portion of total employment which is service and, B is equal to that portion of total employment which is basic. The data used in deriving employment multiplier estimates are presented in Table 5.4. An employment multiplier of 1.47 for the total study area implies that one unit of basic employment (eg. in the tourist industry) supports an additional .47 units of non-basic employment.

TABLE 5.4

FIGURES USED IN EMPLOYMENT MULTIPLIER CALCULATION

Industry Divisions	Region		
	the total study area	Fisher and Bifrost	Fisher, Bifrost, and Gimli
Employment: total	2,795	1,697	2,079
basic	1,896	1,243	1,411
service	899	454	668
Employment Multiplier	1.47	1.36	1.47

(2) Income Multiplier

The first step in calculating the income version of the economic base multiplier involves the multiplication of employment figures (Table 5.2) by average income per economic category to yield an estimate of total income earned by workers engaged in each activity. These figures are presented in Table 5.5. It is assumed that regional employment earnings for each economic category are similar to those in Manitoba as a whole. Given this assumption, and the figures presented in Table 5.5, the income version of the economic base multiplier is calculated by the formula:

$$\text{Income Multiplier} = \frac{1}{1 - \frac{S}{T}} = 1 + \frac{S}{B} = \frac{T}{B}$$

where T is equal to total income in the study area, S is equal to that portion of total income which is service and,

B is equal to that portion of total income which is basic. The data used in deriving income multiplier estimates are presented in Table 5.6. An income multiplier of 1.53 for the total study area implies that each dollar of recreational expenditure creates an additional .53 dollars in gross income in the local economy. Total gross income attributable to recreational expenditure is therefore 1.53 times total recreational expenditure.

c) Summary and Evaluation of Derived Multipliers

Tables 5.4 and 5.5 present economic base multipliers calculated for the study area. Both employment and income multipliers have been calculated. The estimated values for the various employment multipliers appear to be of reasonable magnitude. However, no studies were found which could substantiate this assertion. Comparison of the derived values of the various income multipliers with those obtained from other studies indicates that the estimated values are within acceptable limits.''

'Income multiplier values from several North American studies range from 1.20 to 2.06. These multipliers are presented in: Canada, Department of Indian and Northern Affairs, Parks Canada. A Handbook of Coefficients and Variables Used in Parks Canada's Socio-economic Research, (Ottawa: Queen's Printer, 1979), and Canadian Outdoor Recreation Research Committee, The Economic Impact of Parks, (Toronto: Ontario Research Council on Leisure, 1975).

TABLE 5.5

ESTIMATED EMPLOYMENT EARNINGS BY INDUSTRY: 1978

Industry Divisions	Average Annual Income ¹	Total Annual Income ³ (thousands of dollars)				
		The Study Area				
		Total	Bifrost	Fisher	Armstrong	Gimli
agri- culture	\$9,097 ²	\$13,273	\$3,275	\$5,868	\$3,320	\$810
forestry	\$6,047 ²	224	48	139	18	18
fishing- trapping	\$5,577 ²	184	84	33	33	33
mines, quarries & oil	17,496	245	35	52	35	122
wells manu- facturing	12,694	1,841	394	330	394	724
con- struction	17,910	6,573	1,773	1,558	1,988	1,254
trans- portation & commu- nication	15,557	2,707	373	840	1,120	373
trade	9,924	1,965	417	774	476	298
finance, insurance & real estate	12,281	147	37	37	37	37
community & personal service	8,142	1,653	212	537	318	586
public admin. & defence	13,772 ²	2,107	634	689	496	289
unspecified	-	-	-	-	-	-

¹Statistics Canada, catalogue number 72-002.

²Revenue Canada, Taxation Branch, Taxation Statistics: 1978, 1980.

³estimated by multiplying the average income per industry for Manitoba, by regional employment.

TABLE 5.6
 FIGURES USED IN INCOME MULTIPLIER CALCULATION

Figures	Region		
	the total study area	Fisher and Bifrost	Fisher, Befrost and Gimli
Income: total	\$30,919	\$18,139	\$22,683
(thousands basic	20,254	12,778	14,893
of dollars) service	10,665	5,361	7,790
Income Multiplier	1.53	1.42	1.52

In estimating the local economic impact of the expenditure of visitors to Hecla Provincial Park, multipliers are applied to calculated total tourist expenditure to yield an estimate of the overall income and employment resulting from this expenditure. In the case of income, the appropriate multiplier is applied to total tourist expenditure to yield an estimate of the gross income effects accruing to the local economy. Household income is not calculable by way of the economic base multiplier. Available input-output multipliers must be used in obtaining an estimate of this figure.

The employment version of the economic base multiplier is not directly applicable to a total tourist expenditure figure. Rather, this multiplier reveals the employment generated in the regional economy by the creation of one

employment unit in the base sector. As a result, in using the economic base multiplier to calculate the total employment effects of tourist expenditure, it is first necessary to determine the number of people directly supported by whatever level of tourist expenditure is observed. This figure can be estimated through actual employment records, or through the application of estimates of the value of tourist expenditure which is seen to support one man-year in the tourist industry.²⁰ The number of man-years directly supported by tourist expenditure is then multiplied by the employment version of the economic base multiplier to yield an estimate of the total number of people both directly and indirectly supported by tourist expenditure.

The following section presents the methodology and actual calculations employed in deriving an estimate of total tourist expenditure. Income and employment multipliers are then applied to this value in estimating the local economic impact of total tourist expenditure in terms of both gross income and created employment.

D. The Economic Impact of Tourist Expenditure

The regional economic impact of tourist expenditure is calculated by combining income and employment multipliers, the actual numbers of tourists, and the size and pattern of

²⁰ "Man-year" is defined as the equivalent of one employment unit working for one full year.

tourist expenditure. Up to this point, only the different multipliers have been presented. The steps involved in gathering the remaining information are presented below.

1. Total Visitation

Total visitation is expressed as the total number of parties that visited Hecla Provincial Park during the 1978 summer season (May 12 to September 27). The four strata of campers, cottagers, hotel guests and day-users are each discussed separately.

a) Campers

A total of 5,092 camping permits were issued over the 1978 summer season.²¹ Of these permits, 1,083 were renewals. Assuming one camping permit per party, a total of 3,919 camping parties were recorded. These 3,919 camping parties stayed a total of 9,014 party-days, indicating an average length of stay of 2.3 days per party.²²

b) Cottagers

The Hecla Family Vacation Cabins were occupied for a total of 968 party-days during the 1978 summer season. The total number of parties to use these cabins during this time is estimated at 342, indicating an average length of stay of

²¹Manitoba, Department of Natural Resources, Parks Branch, Manitoba Park Statistics, 1979, (Winnipeg: Queen's Printer, 1979).

²²A "party-day" is defined as one visitor party visting the park for one day.

2.8 days per party.²³

c) Hotel Guests

The general manager of the Gull Harbour Resort Hotel was unable to "officially" release occupancy figures for the 1978 summer season. However, "unofficially" it was possible to obtain "very accurate guesses" concerning occupancy during the desired period. From the occupancy rates given, and the knowledge that the hotel contained 59 guest-rooms, it was estimated that the hotel was occupied for a total of 6,454 party-days during the 1978 summer season. Assuming that the average length of stay per party was approximately 3.1 days,²⁴ the total number of parties was estimated at 2,109.

d) Day-Users

The total number of day-user parties to visit Hecla Provincial Park in the 1978 summer season was estimated at 9,368. Day-users essentially form the residual strata. The total number of vehicles entering Hecla Provincial Park (25,526)²⁵ was adjusted downward to take into account multi-axled vehicles, non-recreational vehicles, and return

²³Manitoba, Department of Natural Resources, Parks Branch, "Year End Reconciliation: Hecla Family Vacation Cabins, 1978/79" (unpublished report, 1979).

²⁴Estimated from a survey of hotel guests. The methodology employed in this survey is presented in the next section.

²⁵Manitoba, Department of Natural Resources, Parks Branch, "1979 Vehicular Attendance in Manitoba's Provincial Parks System" (unpublished report, 1979), p.27.

campers.²⁶ The adjusted total vehicle figure was calculated as 15,738 vehicles. From this figure was subtracted the total number of parties from the other three strata (campers, cottagers, hotel guests). In this way, the total number of day-user parties was estimated at 9,368 parties.²⁷

Figures on visitation for Hecla Provincial Park during the 1978 summer season were presented in Table 5.7. In estimating total visitor expenditure for the entire season, visitation figures are multiplied by average party expenditure. The estimation of average party expenditure is an intermediate step and is discussed below.

2. Survey Design and Sampling Methodology

It was the original intention of this thesis to examine all possible impacts of Hecla Provincial Park in attempting to assess the appropriateness of the resultant tourist industry to regional economic development objectives. In fulfilling this intention it was determined that some sort of primary data collection was necessary to ascertain the characteristics and perceptions of visitors to Hecla Provincial Park. Brown utilized a self-administered

²⁶The total vehicle count (as estimated from traffic counts) was adjusted using Brown's traffic flow analysis. For further information, see Brown, W.A.N., op.cit..

²⁷This estimate assumes that there was only one vehicle per party. As a result, the total number of day-user parties may actually be over-estimated.

TABLE 5.7
VISITATION PER STRATA: HECLA PROVINCIAL PARK - 1978

Strata	Number of Parties	Number of Party-days
campers	3,919	9,014
cottagers	342	968
hotel-guests	2,109	6,454
day-users	9,368	9,368
Total	15,738	25,804

questionnaire in his 1975 study of visitors to Hecla Provincial Park.²⁸ Although the information collected by this questionnaire was similar, in part, to that required by the present study, there are problems arising from the fact that the survey was conducted at a time when the park was not yet fully operational. As Gull Harbour Resort Hotel was still under construction, the information required from hotel guests could not be obtained. In addition, Brown's survey failed to account for the characteristics and perceptions of rental-cottagers. It was therefore decided that a new study of park visitors was required to obtain the necessary information.

a) Survey design

Information was obtained through the use of personal interviews. An interviewing schedule was drawn up for the purpose of recording the information collected. Although

²⁸Brown, W.A.N., op.cit.

there are other methods of collecting data such as the self-administered questionnaire, certain constraints and advantages dictated the use of personal interviews. Firstly, personal interviews have a high response rate relative to cost. Interviewer's time, travel and stationery are generally the principal costs involved, and response rates usually exceed 70 percent.² It was therefore felt that personal interviews would yield the highest response given the restricted budget of the study.

Secondly, perhaps the greatest advantage of the interview technique is its flexibility.³ The interviewer can build up and maintain a rapport that will keep the respondent interested and responsive throughout the interview. In addition, the interviewer can clarify questions through discussion, and/or visual aides. Finally, the interviewer can probe respondents when particular answers are encountered.

Unfortunately, the personal interview technique is not without its problems. Besides the obvious costs involved, interviews can contain many possible sources of bias. The interviewer can influence respondent's answers through leading questions, voice inflection and even dress. Agreeing with the respondent to maintain rapport can also have a bearing on the answers given. Some of these biases can be

²Dixon, D.J., and Leach, B., Questionnaires and Interviews in Geographical Research, Concepts and Techniques in Modern Geography series, no.18 (Norwich: Geo. Abstracts, no date given), pp.9-11.

³Oppenheim, A.N., Questionnaire Design and Attitude Measurement, (New York: Basic Books Inc., 1966), p.31.

largely eliminated by a careful and conscientious interviewer. However, it is suspected that some "biases may remain and will influence the results to an unknown degree."³¹

In addition to possible interviewer biases, the questions themselves can influence the information obtained. As with any survey, the questions asked must be sufficiently simple and straightforward to facilitate ease of response without confusion over meaning. In order to meet this requirement, three initial checks were used to determine the appropriateness of the intended interview schedule. First, questions adopted from Brown's survey were altered slightly in an attempt to rectify problems that his study identified.³² In this way, Brown's study served as a "pretest" for some of the questions used in the interview schedule. Second, some of the faculty members and graduate students of the Department of Geography, University of Manitoba were given a copy of the intended interview schedule. They were asked to evaluate and comment on the format and the phrasing used for readability and comprehension. Comments were taken into consideration and minor revisions to the interview schedule were made. The final check on the appropriateness of the interview schedule was made by examining the responses of a small sample (10) of visitors to Hecla Provincial Park. Based upon their responses to the questions asked, minor modifications to the interview schedule were

³¹Ibid., pp.31-32.

³²Brown, W.A.N., op.cit., pp.36-43.

made to increase the clarity of the questions. Ultimately, a final draft of the interview schedule was produced.

b) The Interview Schedule

The interview schedule was designed to record park-user data in five main subject areas:

1. demographic and socio-economic characteristics of the party,
2. details of the trip to Hecla Provincial Park,
3. the local impact of Hecla Provincial Park as perceived by visitors who live in close proximity to the park,
4. details of that portion of the entire trip pertaining to Hecla Provincial Park itself,
5. visitor expenditure data.

The information obtained would provide the data necessary to assessing and interpreting the socio-economic impact of Hecla Provincial Park on the surrounding region.

c) Sampling Methodology

As mentioned earlier, the nature of the topic necessitated consideration of information from four key groups (campers, cottagers, hotel guests, and day-users). It was decided that interviews be conducted between August 1 and 26, 1978 as this would be a period of peak use and an adequate sample could be obtained within the cost and time-frame of the study. Optimal sample size was calculated to be between 96 and 384.³³

³³The sample size range was calculated assuming that a binary variable with a standard deviation of 50 and a

Budget constraints dictated that interviews be conducted by this researcher. To obtain the specified sample size in the time allotted, it was decided that availability sampling be used rather than attempt some sort of systematic random sampling. Although this could bias the sample taken in unknown directions it is thought that error arising from this source is not significant, given the scope of the present study.

The interviewing of park visitors was conducted in four main areas of the park (see Fig. 5.3): the designated day-use area, the campground, the family vacation cabins and, Gull Harbour Resort Hotel and its surrounding grounds. Visitors were sampled in such a way that no fewer than 30 parties were interviewed from each strata.³⁴ It was necessary to divert attention away from campers by mid-August so that adequate samples of the other three user-groups could be obtained. The relative difficulty experienced in collecting information from these groups was responsible for this shift in emphasis.

³³(cont'd)desired confidence limit of 95% and confidence interval of $\pm 10\%$ requires a sample size of 96 and, a binary variable with a standard deviation of 50 and a desired confidence limit of 95% and confidence interval of $\pm 5\%$ requires a sample size of 384. The equation used for this calculation is:

$$n = \left(\frac{z \cdot s}{c} \right)^2$$

where n is the sample size, z is the z-score associated with the confidence level specified, s is the standard deviation and c is the confidence interval.

³⁴"A sample of 30 is the smallest that can be expected to conform to the normal distribution on which sampling theory...is based." Dixon, C.J., and Leach, B., op.cit., p.7.

Figure 5.3
Interview Areas

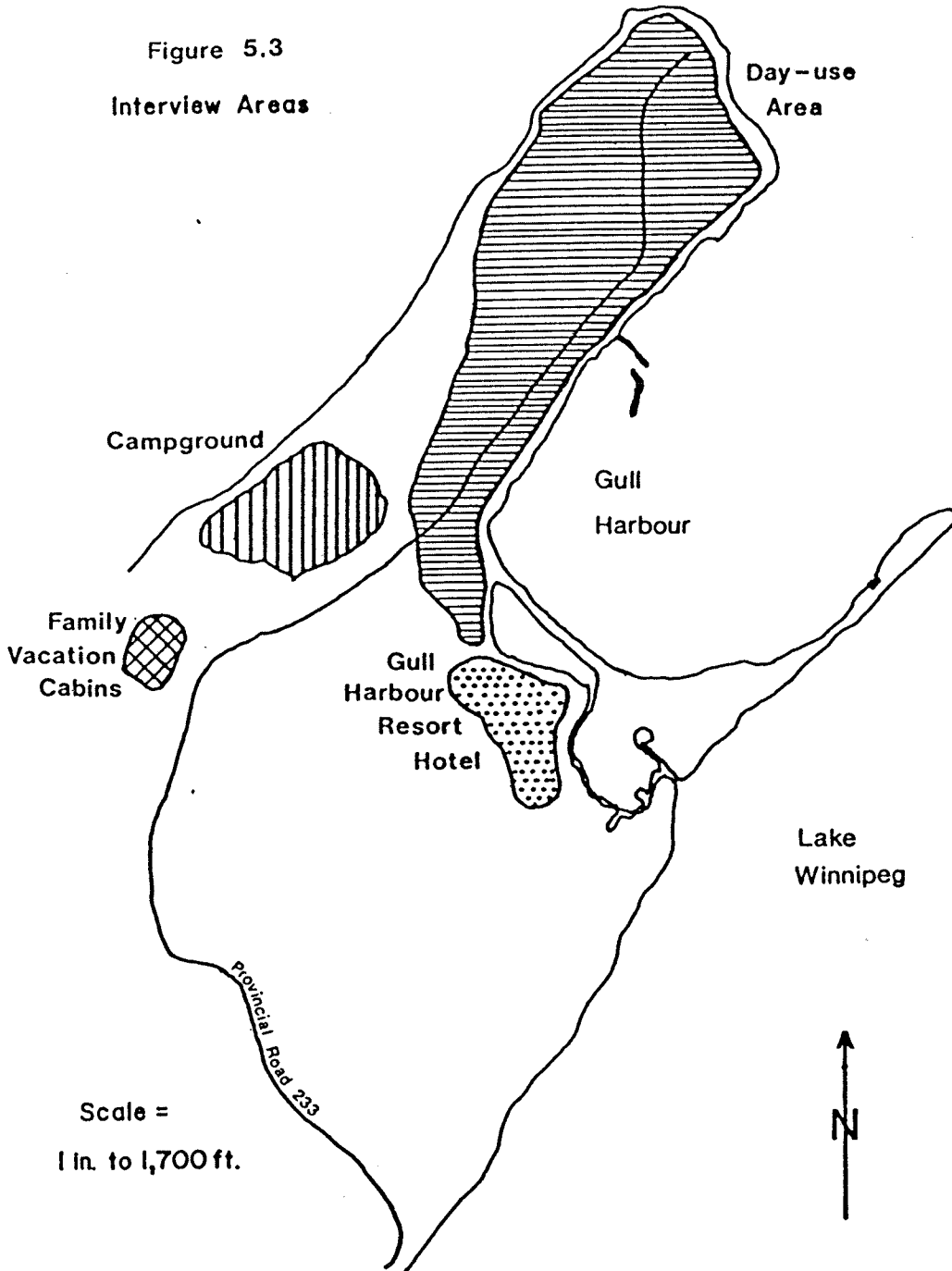


Table 5.8 presents tabulations of the interviews conducted each day. In total, 284 respondents were interviewed. Of these 107 (38%) were campers, 82 (29%) were hotel guests, 48 (17%) were cottagers, and 47 (17%) were day-users. It is felt that these sample sizes will yield an adequate representation of the characteristics of each user group. However, there are certain problems which may limit the accuracy of the results obtained.

The majority of methodological problems encountered in the present study stem from the sampling procedure chosen. While availability sampling is quick, inexpensive and methodologically simple, it has the disadvantage of increasing the likelihood of bias. For example, sample selection in the case of personal interviews may be subconsciously biased in favour of those types of people the interviewer feels most comfortable talking to (eg. the elderly). In addition, the time of day and week that the interviews are conducted may bias the sample in favour of certain groups (eg. interviews conducted in early afternoon will neglect those campers who are up and on the road early). Unfortunately, it is almost impossible to remove these types of bias from availability samples. What is worse, however, is that the influence of these types of bias on the results of a given sample is uncalculable.

The limitations that selection biases pose to the present study are worthy of note. However, because the scope of this study concerns the more methodological aspects of

TABLE 5.8
DAILY INTERVIEW TABULATION

Day	User-type	User-type				Total
		Camper	Hotel Guests	Cottager	Day- user	
August	1	23	-	-	1	24
	2	10	2	3	1	16
	3	6	5	2	5	18
	4	14	4	-	1	19
	5	-	-	-	-	-
	6	14	1	-	3	18
	7	2	6	9	3	20
	8	-	-	-	-	-
	9	6	9	1	2	18
	10	9	8	-	2	19
	11	12	3	1	2	18
	12	-	9	3	3	15
	13	-	-	6	1	7
	14	7	3	-	8	18
	15	-	-	-	-	-
	16	1	8	3	8	20
	17	-	-	-	-	-
	18	-	-	-	-	-
	19	1	10	5	4	20
	20	-	2	6	2	10
	21	-	-	-	-	-
	22	-	-	-	-	-
	23	-	5	4	1	10
	24	-	-	-	-	-
	25	-	-	-	-	-
	26	2	7	5	-	14
Total		107	82	48	47	284

examining the economic impact of visitors to a park, biases such as those discussed above need not affect the results to any great degree. It is a lesson well learned that probability sampling is a more desirable means of estimating the characteristics of a population. For the present study, however, it is necessary to assume that the sampling

methodology used was adequate for the stated purposes of the study. The results obtained from the sample taken are discussed below.

3. Survey Results

As mentioned earlier, a total of 284 respondents were interviewed. One return was discarded because of problems in the response to some questions. Of the remaining 283 respondents, 106 (37%) were campers, 82 (29%) were hotel guests, 48 (17%) were cottagers, and 47 (17%) were day-users.

While information was collected on a variety of subjects, it was subsequently decided that the interview schedule was perhaps "over-ambitious" in terms of scope. Only a portion of the information collected was directly relevant to the needs of the present study. This information is summarized below.

Of greatest importance to an economic impact study is the expenditure characteristics of park visitors. Table 5.9 presents visitor expenditure data tabulated from the survey. The expenditure figures listed represent respondent's expenditure in the total study area as a direct result of their present trip to Hecla Provincial Park. As expected, hotel guests reported the highest expenditure per party-day (\$82.14 per party day) while campers and day-users reported

TABLE 5.9
VISITOR EXPENDITURES FROM SAMPLE

Group Data	Campers	Hotel Guests	Cottagers	Day-users
Number of Party-Days Spent	556	251	163	47
Total Expenditure	\$7,997	\$20,618	\$5,795	\$962
Variance	118.72	3,225.91	498.22	234.69
Average Expenditure per Party-day	\$14.38	\$82.14	\$35.55	\$20.47
95% Confidence Interval	±14%	±15%	±17%	±21%
Sample Size	106	82	48	47

the lowest (\$14.38 per party-day and \$20.47 per party-day respectively). A percentage breakdown of visitor expenditures is presented in Table 5.10.

This breakdown is based on only those respondents who made 100 percent of their expenditures in the study area as a result of their visit to Hecla Provincial Park. It is not possible to calculate such a breakdown for those respondents who made a portion of their expenditure in the study area for reasons other than their trip to Hecla Provincial Park.

Table 5.10 illustrates that different user-groups apportion their expenditures differently. Hotel guests and cottagers spend most of their money on accommodation, restaurants and golfing. Campers spend most of their money on camping fees, groceries, golfing and gasoline. Day-users spend most of their money on restaurants, gasoline, and golfing. These expenditures appear to be in line with what

TABLE 5.10
VISITOR EXPENDITURE BREAKDOWN
(percentages)

Expenditure Group Type	Campers	Hotel Guests	Cottagers	Day-users
park entrance fees	1.6	0.4	1.5	3.7
camping fees	27.5	0.0	0.0	0.0
accommodation	0.0	45.8	54.7	0.0
restaurants	13.4	44.2	13.2	55.0
groceries	28.8	1.4	9.2	4.4
clothes	1.3	0.3	1.4	0.7
outdoor equipment	0.0	0.0	0.0	0.0
other merchandise	1.2	0.4	0.7	7.8
fuel, etc.	14.4	2.3	4.6	16.2
equipment rental	0.0	0.0	0.0	0.0
green fees	11.4	5.2	14.6	12.0
miscellaneous	0.2	0.1	0.0	0.0
Total	100.0	100.0	100.0	100.0
Base Sample Size	89	72	46	47

one would expect, given the results of other studies.³⁵

Table 5.11 presents visitor origin percentages.

Significantly, only 6.3 percent of the visitors sampled came from the Interlake Area. Only 7.0 percent were found to be from the study area per se. These were day-users. The majority of visitors (69.3%) originated from Winnipeg.

³⁵Canada, Department of Indian and Northern Affairs, Parks Canada, A Handbook of Coefficients and Variables in Parks Canada's Socio-economic Research, (Ottawa: Queen's Printer, 1979), pp.11-12.

Table 5.12 presents average party size figures for each user group. These figures are important from a conceptual point of view because they add a sense of perspective to party-expenditure figures. The figures calculated appear to be in line with those of other studies.³⁶

Table 5.13 presents average length of stay figures calculated from the information contained in Table 5.9 (number of party-days spent divided by sample size). For park visitors as a whole, the average length of stay is calculated as 3.6 days per party. This figure seems reasonable given the fact that average length of stay calculated in other studies ranges from 2.2 days to 5.9 days.³⁷ For campers and cottagers the figures presented in Table 5.13 are somewhat larger than those calculated from permit sales (2.3 days for campers and 2.8 days for cottagers). This is probably due to a higher survey response rate from longer stay parties. For hotel guests, no length of stay statistics were available for the entire population. The figure of 3.1 days obtained from the survey appears to be realistic. However, no studies could be found against which a comparison could be made.

³⁶Brown's study produced an average party size of 3.4 for campers and 3.5 for day-users (Brown, W.A.N., op.cit., p.34). Figures presented in other studies are seen to range from 2.6 to 3.4 (Canada, Department of Indian and Northern Affairs, Parks Canada, A Handbook of Coefficients and Variables Used in Parks Canada's Socio-economic Research, (Ottawa: Queen's Printer, 1979), pp.3-4.)).

³⁷Canada, Department of Indian and Northern Affairs, Parks Canada, A Handbook of Coefficients and Variables Used in Parks Canada's Socio-economic Research, (Ottawa: Queen's Printer, 1979), pp.13-14.

TABLE 5.11
VISITOR ORIGIN
(percentages)

Group Visitor Origin	Camper	Hotel Guests	Cottagers	Day- users	Total
Winnipeg	61.3	69.5	81.3	74.5	69.3
Study Area (Gimli and Armstrong)	-	-	-	2.1	0.4
Study Area (Fisher and Bifrost)	-	-	-	2.1	0.4
Interlake (other than study area)	8.5	1.2	2.1	10.6	5.7
Other Manitoba	21.7	12.2	8.3	4.3	13.8
Other Canada	6.6	14.6	6.3	6.4	8.8
Foreign	1.9	2.4	2.1	-	1.8
Total	100.0	100.0	100.0	100.0	100.0

Note: Figures may not equal 100 percent due to rounding.

TABLE 5.12
PARTY SIZE
(number of persons)

Group Data	Campers	Hotel Guests	Cottagers	Day- users	Total
Average Party Size	3.65	3.17	4.04	3.15	3.49

TABLE 5.13
 AVERAGE LENGTH OF STAY
 (in days)

Group Data	Campers	Hotel Guests	Cottagers	Day-users	Total
Average Length of Stay	5.3	3.1	3.4	1.0	3.6

To summarize, the information retrieved from the survey of visitors to Hecla Provincial Park was that which had direct relevance to the determination of total visitor expenditure in the study area as a result of the park. Other data collected was deemed to be not relevant given the decision to focus on the information needs of the two previously mentioned principal hypotheses of this thesis. As a result, no tabulation or analysis was performed on the remaining portions of the data.

The next section draws on the expenditure information presented above in estimating total visitor expenditure for the 1978 summer season. Economic base multipliers are applied to this figure in order to obtain a measure of the regional economic impact resulting from visitor expenditure.

4. The Regional Economic Impact of Visitor Expenditure

Total visitor expenditure for the 1978 summer season is estimated by combining total visitation figures (Table 5.7) and average expenditure figures obtained from the sample (section D.3 above). In making this estimate it is necessary to consider both the variance in expenditure within each strata as well as between each strata. This is accomplished by the equation:

$$E = (L \times N \times \bar{X}) \pm Z \times L \times N \times \sqrt{S^2}$$

Where E is equal to total visitor expenditure, L is equal to the average length of stay,³ N is equal to the total number of parties,³ \bar{X} is equal to the weighted mean of party expenditure per day⁴, Z is equal to the Z-score for the specified level of confidence,⁴ and S^2 is equal to the

³ Average length of stay is equal to the estimated number of party days spent by all groups, divided by the estimated total number of parties (from Table 5.7):

$$L = \frac{25,804}{15,738} = 1.64 \text{ days}$$

³ Presented in Table 5.7: N = 15,738.

⁴ The weighted mean of party expenditure per day is calculated by the equation:

$$\bar{X} = \frac{\sum N_s \times \bar{X}_s}{N}$$

where N_s is equal to the estimated number of party days spent per strata (from Table 5.7), \bar{X}_s is equal to the sample strata mean (from Table 5.9), and N is equal to the number of party days spent by all groups (from Table 5.7):

$\bar{X} = \$34.32$

⁴ The Z-score for the 95% confidence level is equal to 1.96.

variance of the weighted mean.⁴² Substituting the values into the equation produces a value for total visitor expenditure of:

$$E = (1.64 \times 15,738 \times \$34.32) \pm (1.96 \times 1.64 \times 15,738) \times 1.49$$

$$E = \$885,810.18 \pm 61,768.23$$

Therefore, for the 95% confidence level the estimated low, medium and high values for total visitor expenditure during the 1978 summer season are: \$824,041.95, \$885,810.18, and \$947,578.41. To put it another way, Hecla Provincial Park generated approximately \$885,810 in direct sales by study area businesses including government during the 1978 summer season.

a) Income Effects of Visitor Expenditure

Application of the appropriate economic base multiplier to the estimate of total visitor expenditure yields an estimate of the gross income effects accruing to the local economy as a result of this expenditure. Depending upon the probable areal extent of the effects of visitor expenditure, different multipliers are seen to apply. Table 5.14 presents

⁴²The variance of the weighted mean is calculated by the equation:

$$S^2 = \sum \left[\left(\frac{N_s}{N} \right)^2 \times \frac{S_s^2}{n_s} \right] - \sum \left[\left(\frac{N_s}{N} \right)^2 \times \frac{\bar{X}_s}{N} \right]$$

where N_s is equal to the estimated number of party days per strata (from Table 5.7), N is equal to the number of party days spent by all groups (from Table 5.7), S_s^2 is equal to strata variance, n_s is equal to the number of party days spent per sample strata (from Table 5.9), and \bar{X}_s is equal to the strata mean: $S^2 = 1.49$.

TABLE 5.14
MULTIPLIED LOCAL GROSS INCOME EFFECTS OF
VISITOR EXPENDITURE

The Study Area	Income Multiplier ¹	Total Visitor Expenditure ²	Total Income Effect ³
Total Study Area	1.53	\$885,810	\$1,355,289
Fisher and Bifrost	1.42	885,810	1,257,850
Fisher, Bifrost and Gimli	1.52	885,810	1,346,431

alternative estimates of the multiplied local gross income effects.

It is probable that the majority of sales by local businesses including government to visitors to Hecla Provincial Park take place either within the park, or within the immediate surrounding area. This would mean that the gross income effects arising from visitor expenditure are limited almost exclusively to the L.G.D. of Fisher and the R.M. of Bifrost. If this is assumed to be correct, the most appropriate income multiplier to apply to direct sales to visitors is 1.42. The corresponding estimate of the gross income effects resulting from visitor expenditure is \$1,257,850.

The majority of visitor expenditure (83.4%) accrues to the government sector. Only an estimated \$146,894 went to local businesses not including government by way of direct

sales to visitors to Hecla Provincial Park.⁴³ While this amount may seem low, it must be remembered that the majority of facilities on Hecla Island, including Gull Harbour Resort Hotel are government owned. Expenditure in the private sector by visitors to Hecla Provincial Park is limited largely to groceries, clothes, outdoor equipment purchase and rental, fuel, and other general merchandise. Assuming that a gross income multiplier of 1.42 is appropriate, visitor expenditure of \$146,894 in the private sector generates \$208,589 in total direct, indirect and induced sales due to multiplier effects.

Household income resulting from visitor expenditure is not calculable by way of the economic base multiplier. If one wishes to estimate this income measure based upon total visitor expenditure, it is necessary to adopt the relevant multiplier from available input-output studies. A household income multiplier from visitor expenditure of 0.17 was calculated in MacMillan's Interlake input-output study.

⁴³Visitor expenditure on park entrance fees, camping fees, accommodation, restaurants, green fees, and golfing equipment rental are considered as accruing totally to the government sector. Estimated percentage breakdowns of visitor expenditure from Table 5.10 are applied to the product of average expenditure per party-day (Table 5.9) and number of party-days per strata (Table 5.7) to yield an estimate of expenditure in the government sector. Subtracting this figure from total expenditure gives a minimum estimate of the amount actually accruing to the private sector as it is likely that a portion of the amount said to be spent in the government sector is actually spent in the private sector. Greater accuracy in the division of total tourist expenditure between these two sectors was not possible because of the way in which the visitor expenditure question was presented on the interview schedule.

Applying this multiplier to the estimated figure of \$885,810 in visitor expenditure accruing to local business including government yields an estimated resultant household income figure of \$150,588. If visitor expenditure in the private sector is considered separately, an estimated resultant household income figure of \$24,972 is obtained.

b) Employment Effects of Visitor Expenditure

As previously mentioned, employment effects attributable to visitor expenditure are not directly calculable by way of the economic base multiplier. As an intermediary step, it is necessary to determine the level of visitor expenditure which directly supports one man-year in the tourist industry. Estimates of this level are seen to range from \$45,500 to \$79,700 in 1978 dollars.⁴⁴ The lower limit of \$45,500 is chosen for the purposes of the present study, based on the findings of MacMillan's Interlake study.⁴⁵

⁴⁴Canada, Department of Indian and Northern Affairs, Parks Canada, A Handbook of Coefficients and Variables Used in Parks Canada's Socio-economic Research, (Ottawa: Queen's Printer, 1979), p.38. Figures were inflated to 1978 dollars using the Consumer Price Index.

⁴⁵MacMillan, J.A., Lu, C., and Framingham, C.F., op.cit., pp.83-97. Findings from this study indicate that total "traveller" expenditure (including that of salesmen, etc.) in 1968, of \$5,153,000 generated a total of 220 jobs. Stated another way, each job was supported by \$23,423 in traveller expenditure. Inflating this to 1978 dollars, it can be seen that traveller expenditure of \$45,600 would support one local job. However, as the expenditure of recreationists is a subset of total traveller expenditure, it is likely that the estimated relationship of one job to \$45,600 traveller expenditure overestimates (or at best is a maximum estimate of) the relationship between visitor (recreationist), expenditure and resultant direct employment in the Interlake

Applying this figure to estimated total visitor expenditure of \$885,810 yields an estimate of the direct employment effects accruing to the local economy as a result of this expenditure. It is estimated that 19.5 man-years are directly supported by the noted level of visitor expenditure.

Application of the economic base multiplier to the estimate of employment directly supported by visitor expenditure yields an estimate of the total resultant direct, indirect and induced employment arising from visitor expenditure. Table 5.15 presents these estimates for the study area. As discussed under income, it is assumed that the most appropriate multiplier to consider here is that calculated for the area immediately surrounding the park (Fisher and Bifrost). If this assumption is correct, the corresponding estimate of the total employment effects resulting from visitor expenditure to local businesses including government is 26.5 man-years ($19.5 \text{ man-years} \times 1.36$).

The employment effects of visitor expenditure in the private sector alone can be calculated in this same way. Estimated visitor expenditure to local businesses not including government of \$146,894 directly supports an estimated 3.2 man-years. Application of the employment multiplier yields an estimated total employment effect of 4.4 man-years.

*⁵(cont'd)Area.

TABLE 5.15
MULTIPLIED EMPLOYMENT EFFECTS
OF VISITOR EXPENDITURE

The Study Area	Employment	Employment Directly Supported ²	Total Employment Effect ³
Total Study Area	1.47	19.5	28.7
Fisher and Bifrost	1.36	19.5	26.5
Fisher, Bifrost and Gimli	1.47	19.5	28.7

¹From Table 5.4.

²Estimate is in man-years.

³Estimate is in man-years. Estimates provided are alternatives, and are seen to vary with the region assumed to be the principal recipient of visitor expenditure.

To summarize, the expenditure of visitors to Hecla Provincial Park during the 1978 summer season is estimated at approximately \$885,810. Application of calculated economic base multipliers indicates that this expenditure yields \$1,257,850 in total income and supports employment of 26.5 man-years. Through the use of a household income multiplier adopted from MacMillan's Interlake study, resultant household income is estimated at approximately \$150,588.

If expenditures accruing to local businesses are isolated out from those accruing to government, the visitor expenditure figure drops to \$146,894. This is seen to yield \$208,589 in total income and support employment of 4.4 man-years. Resultant household income is estimated at

\$24,972.

E. Conclusion

In conclusion, the preceding pages have presented a methodology which can be employed in estimating the economic impact of visitor expenditure in a regional setting. This methodology was presented by way of an empirical study of visitor expenditure in and around Hecla Provincial Park in the Interlake Area of Manitoba. The conducted survey gathered information concerning the expenditure characteristics of park visitors during the 1978 summer season. Application of economic analysis to these figures yielded estimates of the total income and employment effects accruing to the local economy as a result of visitor expenditure.

The output of economic base analysis was found to be variable in terms of its reliance on secondary statistics. Only resultant gross income (total direct, indirect and induced sales) was found to be calculable by directly applying the economic base multiplier to total visitor expenditure. Resultant household income must be calculated using coefficients derived from other studies. Estimation of the employment effects attributable to visitor expenditure required the intermediary use of a statistic representing the level of visitor expenditure which directly supports one man-year in the tourist industry.

It is important to note that the principal aim of the figures presented was to assist in explaining the methodological aspects of economic base analysis. Short-cuts taken in data collection and manipulation were due to the scope, and time and budget constraints of the present study. Relative magnitudes are therefore perceived to be a greater importance than are the actual figures presented. The relevance of the results obtained from the preceding analysis with regards to the stated hypotheses of this thesis are discussed in the following concluding chapter.

VI. CONCLUSION

It has been the intent of this thesis to provide the information necessary in drawing certain conclusions regarding two basic hypotheses. First, it was hypothesized that the active promotion of a tourist industry, by government, could have significant beneficial effects upon the economy of a region. It was hypothesized that tourism thus had merit as a tool in regional development planning. The second hypothesis to be addressed in this thesis concerned the usefulness of a technique for measuring the regional economic effects of the tourist industry. More specifically, it was hypothesized that Economic Base Analysis would prove useful in providing a reasonably accurate measure of the regional economic impact of the tourism resulting from an actual developmental project.

Compilation of the information required in drawing conclusions regarding the above hypotheses consisted of a review and synthesis of available literature concerning the various instruments of regional policy, the possible impacts of the tourist industry on a local area, and the role of cost-benefit analysis in public investment decision-making. In addition, Economic Base Analysis was reviewed and ultimately applied to the case of Hecla Provincial Park in the Interlake Area of Manitoba. Conclusions drawn from the information obtained are discussed below. Each hypothesis is discussed separately. Finally, suggested areas of further research are presented.

A. Tourism as a Tool In Regional Development Planning

If government is to play an active role in revitalizing economically and socially depressed regions, policies must be aimed at increasing aggregate income, increasing the quantity and diversity of available final goods and services, strengthening industrial structure, lowering levels of unemployment, and improving living standards through income and social services. It has been proposed that active promotion of the tourist industry through park development can assist government in reaching these traditional, broad objectives. Ideally, this goal is achieved through the introduction of "fresh" tourist dollars into the regional economy, and their circulation through consecutive rounds of spending. The resultant increases in income and employment are viewed as being the roots of all accruing benefits. Both income and employment rise as the demand for goods and services rises.

The real advantage of the tourist industry over the more traditional avenues of regional development policy is tourism's generally limited resource demands, low investment cost per job created and high employment to gross earning ratio owing to a high degree of labour intensiveness. For these reasons, tourism can bring dollars into a regional economy where resource and market constraints severely limit the potential for other, more traditional industries. Hecla Provincial Park in the Interlake Area of Manitoba serves as a case in point.

As illustrated in Chapter five, the local expenditure of visitors to Hecla Provincial park during the 1978 summer season (\$885,810) was responsible for an estimated \$1,257,850 in total gross income, and supported employment of approximately 26.5 man-years. It can be concluded therefore, that visitor expenditure does indeed generate a substantial local economic impact.' Further, to the extent that A.R.D.A.'s intent in promoting the development of Hecla Provincial Park was to stimulate economic development, increase income and employment opportunities, and therefore raise the standards of living, active promotion of the tourist industry would seem to have merit as a tool in regional development planning. Hecla Provincial Park served to divert a substantial part of Provincial visitor expenditure to a portion of the Interlake Area. However, in the particular case of Hecla Provincial Park it was observed that the degree to which tourism generated positive economic effects was seemingly limited by a number of factors. These factors can be divided into those which actually reduce the level of visitor expenditure in the area immediately surrounding the park, and those which limit the impact of the actual visitor expenditure which does take place.

Three factors were noted which together, work to limit visitor expenditure in the local area. First, lack of availability of the goods and services demanded by

'Although in this particular case study 83.4 percent of the visitor expenditure accrued to government. The implications of this are discussed further below.

recreationists can limit spending. On Hecla Island there is only one store (located 8 kilometers from the principal use area), a small concession, the Gull Harbour Resort Hotel, the campground, the Family Vacation Cabins and the golf course. In nearby Riverton (located approximately 60 kilometers from Gull Harbour), there is a limited number of gas stations, restaurants and dry goods stores, none of which cater to any great extent to the tourist. There are also two motels containing a total of 36 units. With this limited number of commercial establishments there is a perceived lack of spending opportunities. The tourist views the region as being ill-equipped to serve all his possible needs. As a result, he spends his money at home prior to departure. If the region is to realize the full benefits of a tourist industry, the provision of establishments to service the visitor population is essential. If government is to be successful in regional development planning it must, therefore, actively promote service activities catering to tourists.

The second factor limiting visitor expenditure concerns the proximity of the park to the market area it serves. As noted above, it is likely that the visitor will make preparatory expenditures at home in the absence of suitable spending opportunities in the region. The likelihood of this being the case is increased the closer the park is to the visitor's place of origin. In the case of Hecla Provincial Park, the principal market area (almost 70% of all visitors

come from Winnipeg) is located only 2 to 3 hours drive away. Therefore, unless spending opportunities are abundant and diverse, there is little incentive to make but unavoidable expenditures in the region.

Finally, the level of visitor expenditure is dependent upon the length of the operating season. In the case of Hecla Provincial Park, the campground and Family Vacation Cabins are closed for a significant portion of the year. As a result, the expenditure of visitors to these areas is limited to the summer months only. Fortunately, the lower level of expenditure created by the seasonality of these user groups is partially offset by the year-round operation of Gull Harbour Resort Hotel and day-users to the Park.

The interaction of the above three factors results in a limiting of the level of visitor expenditure which takes place in the study area as a consequence of Hecla Provincial Park. What are perhaps more damning are those factors which limit the impact of those expenditures which do take place. Again, three such factors can be noted.

The first factor limiting the impact of visitor-expenditure is the presence of substitutable sites or intervening opportunities in the region of concern. If new park development (ie. Hecla Provincial Park) merely duplicates existing facilities (ie. Gimli and Winnipeg Beach) visitor expenditure may be simply diverted from one area of the region to another. Insofar as the goal of regional development planning, in terms of park development,

is to attract "fresh" dollars into the regional economy, this goal will not be met. Similarly, if new park development merely duplicates existing facilities in other regions (ie. Whiteshell Provincial Park) serving the same market, such development may fail in attracting prospective visitors to the region. Therefore, for maximum impacts to be realized it is essential that new park development attract the maximum number of additional visitors to the region rather than simply providing similar facilities to those already available.

Second, the local economic impact of the visitor expenditure that does take place is limited because of the low "local content" of the goods and services purchased. In chapter five it was estimated that only 16.6 percent of the visitor expenditure made as a result of Hecla Provincial Park accrued to the private sector. The remainder went to government. If the local economy is to realize the full benefit of developments such as Hecla Provincial Park, it must realize a larger share of the visitor expenditure made. Although this view is limited because it ignores the effects of government purchasing labour and supplies in the region, the fact still remains that local impact can be increased by a higher level of visitor expenditure made directly to locals. This should be a priority of regional development planners.

The final factor limiting the local impact of visitor expenditure in the Hecla Provincial Park example concerns

the relatively small income and employment multipliers (1.42 and 1.36 respectively) calculated for the region. Generally speaking, economically depressed or underdeveloped regions are economically dependent upon other regions for support and must import a large portion of the goods and services consumed. As a result, these regions are characterized by relatively low multipliers. Low multipliers limit the indirect and induced local effects of visitor expenditure. This was observed to be the case in the Interlake example. Regional development policies aimed at making the region more economically self-sufficient will hopefully raise multipliers and therefore increase the impact resulting from "fresh" dollars being brought into the regional economy (ie. through tourism).

The above discussion leads to the conclusion that while tourism does have merit as a tool for use in regional development planning, there are a number of factors at work which could potentially reduce both the expected level of visitor expenditure and the local economic impact resulting from this expenditure. If government is to be successful in promoting regional development through park development it must attempt to reduce the hampering effect of these factors. Expected visitor expenditure can be increased by insuring the availability of the goods and services demanded by recreationists (possibly through initial subsidies to business), locating the park an appropriate distance from

the market area it serves, and planning for and promoting off-season use. Similarly, the expected local economic impact of visitor expenditure can be increased by avoiding duplication of existing facilities, increasing participation of the private sector in providing goods and services to the recreationist, and ultimately raising local economic multipliers by promoting increased economic self-sufficiency (perhaps the most difficult task). Thus, if tourism is to benefit the regional economy to any great extent, it must be part of an overall regional development plan aimed at revitalizing the economy as a whole.

B. Economic Base Analysis as a Tool for Measuring the Regional Economic Impact of Tourism

If regional development planning is to be successful, there is a need to know which projects are more economically beneficial and how benefits might be maximized. As a result of a common lack of assembled, relevant information, some sort of economic analysis is often necessary. In such cases, time and budget constraints frequently dictate that data collection and analysis be as quick, inexpensive and accurate as possible. It has been proposed that economic base analysis fits these requirements.

Chapter five illustrated how economic base analysis can be employed in calculating the ongoing regional economic impact of the tourism resulting from a park development project. Economic base analysis was applied to a derived

estimate of the expenditure of visitors to Hecla Provincial Park in the Interlake Area of Manitoba. It was intended that this analysis would yield estimates of the local income and employment resulting from this expenditure. It was also intended that the necessary analysis would represent a quick, inexpensive and reasonably accurate means of collecting at least a portion of the information necessary in making optimal public investment decisions concerning tourism development. In fulfilling these intentions economic base analysis was found to have mixed success.

On the one hand, the analysis presented in Chapter five resulted in the calculation of figures relevant to making investment choices. Comparison of these figures with those expected indicates a reasonable level of accuracy. Expenditures of different user groups appear to be in line with the results of other studies. Similarly, derived multipliers compare favourably with those obtained from other studies. It is unfortunate that comparison of the resultant income and employment figures to those obtained in Brown's 1975 input-output analysis is difficult owing to the subsequent inclusion of Family Vacation Cabin visitors, opening of the Gull Harbour Resort Hotel and inflation.² However, cursory comparison of the figures obtained in the two studies indicates seemingly appropriate magnitudes in light of the changes noted above.

²Brown, W.A.N., "The Role of Outdoor Recreation in Regional Development: A Study of Hecla Provincial Park," (unpublished Ph.D. Dissertation, University of Manitoba, 1976), p.134.

Again on the positive side, the information needs of economic base analysis were found to be obtainable both quickly and inexpensively. Expenditure information was gathered through a simple direct survey technique (see Appendix 2 for the interview schedule used). Estimates of visitor expenditure are also available from other sources.³ Economic multipliers were found to be calculable by applying the economic base methodology to regional employment and income information available from Statistics Canada. Estimated income and employment attributable to visitor expenditure were derived through reasonably simple manipulation of all the above data. Cost was minimal because of the availability of information and the relatively simple survey technique used.

A shortcoming of the economic base technique noted in its application to a study of the ongoing economic impact of Hecla Provincial Park in the Interlake area of Manitoba, was its failure to provide an estimate of the multiplied household income effects of visitor expenditure. The economic base technique was only able to provide an estimate of the "gross" income effects accruing to the local economy. In calculating the household income resulting from visitor expenditure it was necessary to adopt the relevant multiplier from available input-output studies. This then places an undesirable dependence upon a data source which is

³For example, Canada, Department of Indian and Northern Affairs, Parks Canada, A Handbook of Coefficients and Variables Used in Parks Canada's Socio-economic Research, (Ottawa: Queen's Printer, 1979).

not always immediately available. In light of the tasks to which economic base analysis might be put, this shortfall should not necessarily be considered prohibitive. For comparing alternative projects, a resultant gross income estimate is likely to be sufficient.

Unfortunately, application of economic base analysis in determining the impact of visitor expenditure on local household income, is not the only situation in which one must depend upon additional data sources. The local employment effects of visitor expenditure are also not directly calculable by way of the economic base multiplier. This multiplier reveals the employment generated in the regional economy by the creation of one employment unit in the base sector. As a result, in using the economic base multiplier in calculating the total employment effects of tourist expenditure, it is necessary to know the number of people directly supported by whatever level of tourist expenditure is observed. This requires either a study of actual employment records, or the application of an employment estimate adopted from external data sources.*

As indicated above, the principal weakness noted with regards to economic base analysis concerns its apparent reliance on secondary statistics. However, in the particular case study chosen, the availability of these statistics insured that the desired results were at least calculable. It is possible, therefore, to conclude that economic base

*For example, ibid., p.38.

analysis can have utility in estimating the regional economic impact of visitor expenditure.

To calculate the entire, ongoing regional economic impact of Hecla Provincial Park it would be necessary for a study to also include calculation of the wages of locals employed and the local purchases of the park in terms of supplies and services. Application of the economic base multiplier to these figures would yield an estimate of the direct, indirect and induced effects on the local economy. Combination of these figures with those obtained through an analysis of visitor expenditure would hopefully produce a more complete picture of the ongoing regional economic impact of Hecla Provincial Park.

In point of fact, there are a wide variety of both economic and social effects which must be considered in weighing the merits of one development project over another. It must frequently be determined if "park development" is indeed the optimal avenue of investment in terms of regional development objectives. For these purposes, a more global cost-benefit analysis seems to have relevance. However, as noted in Chapter three, accurate quantification of effects is frequently a problem in applying the cost-benefit analysis technique. Economic base analysis would seem to go a long way in quantifying the important benefits arising from the promotion of a tourist industry through park development. Thus, perhaps it is not on its own that economic base analysis makes its major contribution to

regional development planning, but rather, as an important part of the more all-encompassing cost-benefit analysis technique.

C. Closing Remarks

The particular case study chosen in this thesis seems to have enabled a conclusive evaluation of both the role of the tourist industry in regional development planning, and economic base analysis as a tool for measuring the regional economic impact of visitor expenditure. Tourism does have merit as a means of achieving regional development objectives (at least in the case of Hecla Provincial Park in the Interlake Area of Manitoba). The extent to which this is true depends largely upon the conditions under which regional development is promoted. Quantification of the regional economic benefits of tourism can be realized, at least in part, through application of the economic base technique. Optimally, this analysis should be part of a more "far-reaching" cost-benefit analysis.

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- Howe, N.S. "A Simulation of Regional Development in the Interlake Region of Manitoba." (unpublished MNRM Practicum, University of Manitoba, 1980).
- Manitoba, Department of Natural Resources, Parks Branch. "Year End Reconciliation: Hecla Family Vacation Cabins, 1978/79." (unpublished report, 1979).
- Manitoba, Department of Natural Resources, Parks Branch. "1979 Vehicular Attendance in Manitoba's Provincial Parks System." (unpublished report, 1979).
- Manitoba, Department of Tourism and Recreation. "FRED Recreation Program for the Interlake Area." (unpublished report, 1969).
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APPENDIX 1

Input Output Analysis:
A Brief Description of Methodology

Input-output analysis is commonly recognized as an empirical approach. to the study of economic phenomena of a sectoral or regional nature. The industrial breakdown provided by this method of analysis is viewed as being useful for tracing the effects of exogenous changes on the economy under study. It is in this capacity that input-output analysis makes its major contribution to the field of regional economics.

By definition, regional economics is essentially concerned with analyzing, explaining, and predicting the material and operational aspects of a commercial economy. To achieve these ends, regional economics requires the setting up of a framework enabling the description and analysis of interaction between the production, consumption and exchange elements of the economic system in question. Input-output analysis provides such a framework through a combination of balance and structure equations.

Prior to a brief description of the methodology employed in input-output analysis, it is important to note that the input-output model most commonly used in regional analysis of tourism impact is the 'static, open model.' The model is defined as static because it reflects transaction flows in the economy at a single point in time, and open because only flows between industrial sectors are determined endogenously, while all final markets are exogenous.' This model is based upon three fundamental assumptions. These are

'Cannon, J., Input-Output Models and Regional Forecasting, p. 10.

that:

1. each commodity or group of commodities is supplied by a single industry or sector of production,
2. inputs purchased by each sector are a unique function of the level of output of that sector,
3. There are no externalities.²

Since all other forms of input-output models can be treated as derivatives of this basic model, the brief discussion of methodology to follow will be limited to the static, open model.

The first step of input-output analysis is the arranging of data concerning the dollar value of gross flows in the economy under study, into a 'transactions table.' The standard format of such a table dictates that it be comprised of a processing sector, a payments sector and a final demand sector. The processing sector (X in Figure 1) of the table; located in the upper left hand corner, contains the dollar values of interindustry linkages. Each "industry" is represented by a row and a column and the entries record purchase of industries listed at the top from industries named at the left (purchase of j from i).³

²Miernyk, W.H. The elements of input-output analysis, p.147.

³Ibid. p.9.

FIGURE 1
TRANSACTIONS TABLE

		INDUSTRY PURCHASING		
		Processing Sector j	Final Demand	Total Gross Output
INDUSTRY PRODUCING	Processing Sector i	X	Y	
	Payments Sector	P		
	Total Gross Outlays			

The payments sector (P in Figure 1) of the table records the value of primary inputs used in production which are not produced within the system itself, plus the value of those primary inputs used directly by the various categories of final demand. It is frequently the case that the payments sector is represented by a single row corresponding to value added. However, if greater detail is desired, rows representing such categories as gross inventory depletion, imports, payments to government, depreciation allowances, and households could be included.⁴

The final demand sector (Y in figure 1) may be viewed as a single column sector made up of the various components of final demand. The standard convention in the drawing up of a transaction table is to include figures of final demand for personal consumption, for export, for business investment and for government purchase.⁵ Since final demand may be considered as the independent variable of the input-output system, disaggregation of the various components is necessary to insure accurate estimation of future levels of final demand, and thus, accuracy and relevance of the overall analysis.

Given a transactions table for some base time period as described above, the objective of input-output analysis is then to structure a model which will enable prediction of the total output requirements given any projected level of future final demand. This is achieved through the

⁴Cannon, J., op.cit., p.16.

⁵Ibid., pp.17&18.

construction of a technical coefficients table which gives the percentages of total economic inputs required by each industry from each industry. The mathematical mechanics of translating the transactions table into a technical coefficients table simply involves dividing each column entry of the processing sector by its respective column total.⁶

Assuming that the technical coefficients remain constant over time, input-output analysis, as it has been described up to this point, provides the framework for determining the effects of specified changes in final demand upon gross output. As such, input-output analysis at the regional level involves a direct application of some form of standard equation:

$$X = AX + Y$$

where 'X' and 'Y' are column vectors of gross regional output and final demand for the region's products respectively, and 'A' is a matrix of technical coefficients.⁷

Total effects can be determined through a 'long-hand' computation utilizing data obtained directly from the transactions table and the technical coefficients table (ISARD'S 'iterative' method). Alternatively, in order to

⁶Ibid., pp.21&22.

⁷Richardson, H.W., Input-Output and Regional Economics, pp. 28-30.

simplify the calculation of direct, indirect, and induced economic effects of exogenous disturbances (ie. changes in final demand), it is possible to algebraically invert the matrix of technical coefficients and thus express output as a function of exogenous final demand:

$$X = (I-A)^{-1}Y = RY$$

where 'I' is the identity matrix and 'R' is the inverse of the technical coefficients matrix. The elements of this inverse matrix represent industry multipliers, and as such, permit a 'round-by-round' computation of input requirements.* These input requirements represent the regional economic impact of the exogenous disturbance.

The main advantage of using input-output analysis in the enumeration and valuation of the possible economic impacts of tourism in a region is that it inherently implies that inter-industry linkages are specifically traced. In addition, and perhaps more importantly, input-output analysis "is highly flexible and the limited assumptions of the simple models can be relaxed and the theoretical 'realism' enhanced."

Unfortunately, the analysis is plagued by two major shortcomings. First, data requirements are very heavy and in the majority of cases, necessary data is obtainable only via

*Keeble, D.E., Models of Economic Development, p. 255.

'Brown, W.A.N., The Role of Outdoor Recreation in Regional Development: A Study of Hecla Provincial Park", pp. 37 & 38.

very costly industrial survey methods. Second, a major problem with the standard, static input-output analysis as discussed above, involves the assumption of constant input coefficients. Such an assumption renders the analysis unrealistic, for economies of scale or agglomeration economies may be realized as production increases, the relative prices of inputs may change, technological innovations may be introduced and diffused, and production functions may not be constant within any one sector due to varying technologies. The problems arising out of the assumption of constant input coefficients may be overcome through employment of a 'dynamic' regional input-output model. However, attempts to operationalize such a model are as yet at an experimental stage.¹⁰

¹⁰Richardson, H.W. Elements of Regional Economics, pp. 142 & 143.

APPENDIX 2
The Interview Schedule

HELP US PLAN YOUR PARKS
PLEASE FILL OUT THIS QUESTIONNAIRE

We would like to welcome you to one of Manitoba's new provincial recreation areas, and we hope you will enjoy your visit. So that we may continue to improve our park system and provide the activities you enjoy, we require certain information about park users and we ask your cooperation in filling out this short questionnaire. It will only take a few minutes to complete, and as the answers cannot identify you, the responses will be anonymous.

Please answer the questions carefully. It is important to complete all sections. The study is being conducted by the department of Geography at the University of Manitoba in cooperation with the Manitoba Department of Tourism, Recreation, and Cultural Affairs.

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please turn page

- #1. What is the number of people in your party (people in your vehicle on your trip to Hecla) in each age category.

Age Category	Males	Females
0 - 4		
5 - 9		
10 - 14		
15 - 19		
20 - 24		
25 - 29		
30 - 34		
35 - 39		
40 - 44		
45 - 49		
50 - 54		
55 - 59		
60 and over		

(write in numbers)

- #2. Which of the following best describes the make-up of your party?
Check one.

- one person alone two or more families with children
 one couple only group of friends
 two or more couples organized group (team, club, etc.)
 one family with children other _____
(write in)

Hecla Provincial Park is located within the INTERLAKE region of Manitoba. This region is the area to the north of Winnipeg between lakes Winnipeg and Manitoba. Some of the following questions refer to the INTERLAKE region. (refer to map)

- #3. Where is your present home? (exact street address is not required. If present home is a farm, please note nearest town.)

Name of Town or City _____ Name of Province or State _____
(write in) (write in)

- #4. What is the approximate driving distance from Hecla Provincial Park to your home?

_____ miles
 (write in)

- #5. How many days will you be away from home on this trip?

_____ day(s)
 (write in)

please turn page

How much of this time will you spend in the INTERLAKE region?
Check one.

all, or nearly all the time _____ days
(write in)

#6. On this trip have you visited, or will you visit any other locations than Hecla Provincial Park while in the INTERLAKE? Check one.

yes no

#7. What is the nature of your visit to Hecla Provincial Park? Check one.

the main destination of the trip
 a stopover on a vacation/pleasure trip
 a stopover on a combined business/pleasure trip

#8. If Hecla Provincial Park had not been developed as a recreation site, would you have...? Check one.

visited elsewhere in the INTERLAKE; probably at _____
(write in location)

visited elsewhere outside the INTERLAKE
 stayed at home

other _____
(please specify)

#9. What made you decide to visit Hecla Provincial Park rather than go elsewhere? Check any boxes which you feel apply.

<input type="checkbox"/> radio commercial	<input type="checkbox"/> looking for alternative recreation site
<input type="checkbox"/> T.V. report/ad	<input type="checkbox"/> friend's recommendation
<input type="checkbox"/> newspaper report/ad	<input type="checkbox"/> favourable previous visit
<input type="checkbox"/> travel brochure	<input type="checkbox"/> special event/attraction at Hecla
<input type="checkbox"/> outdoor magazine/guide	<input type="checkbox"/> simply to see what Hecla was like
<input type="checkbox"/> road sign/outdoor ad	
<input type="checkbox"/> no particular reason	
<input type="checkbox"/> other _____	

(please specify)

The following 5 questions are to be answered only by those people who are residents of the Rural Municipality of Bifrost or the Local Government District of Fisher. All non-residents are to proceed to question number 15.

#10. In your opinion, has the development of Hecla Provincial Park had the effect of increasing land values in the area immediately

please turn page

surrounding the Park? Check one.

yes no

If yes, do you feel the increased land values have...? Check any boxes which apply.

pushed residents to sell for large profits

If so, who do you feel has benefited the most from the sale? Check any boxes which apply.

- the original landowner
 "local" individuals who buy and sell land for profit
 "ncn-local" individuals who buy and sell land for profit
 "local" real estate agents
 "non-local" real estate agents
 "local" contractors and builders
 "ncn-local" contractors and builders
 other _____
 (please specify)

meant that less and less land is being left to the younger people

other _____
 (please comment)

#11. Which amenities (ie. physical improvements), if any, do you feel have been improved with the development of Hecla Provincial Park? Check any boxes which apply.

- none
 roads and highways
 service facilities (eg. restaurants, gas stations, etc.)
 shopping facilities
 entertainment facilities (eg. theatres, lounges, etc.)
 recreational facilities (eg. golf, beaches, etc.)
 other _____
 (write in)

If you did notice an improvement in any of the amenities listed above do you, as a resident of the area, feel you have access to all such facilities and services?

yes no

Do you feel that the expansion of the tourist industry has brought about an overcrowding of facilities?

yes no

If so, please specify _____

 (write in)

please turn page

- #12. Do you feel that the expansion of the tourist industry brought about by the development of Hecla Provincial Park has created....
Check any boxes which apply.

alternative sources of employment for some of the area's residents, catering directly to the tourists or providing the necessary goods and services to the tourist industry?

If so, do you feel this represents an opportunity to you or your family?

yes

no

The opportunity for some residents of the area to go into business for themselves, catering directly to the tourists or, providing the necessary goods and services to the tourist industry?

If so, do you feel this represents an opportunity to you or your family?

yes

no

- #13. Have you had some contact (personal interaction) with tourists to Hecla Provincial Park? Check one.

yes

no

If yes, do you feel this has widened your interest in non-local affairs and furthered your understanding of non-local people (ie. their tastes, ambitions, etc.)? Check one.

yes

no

Do you have any comments on non-local tourists? _____

(write in)

- #14. Do you feel that tourism has in any way disrupted your lifestyle or affected your local community culture? Check one.

yes

no

If yes, please explain _____

(write in)

please turn page

Do not fill in the remaining questions until just before you leave the Park. If the interviewer does not get back to you at this time, enjoy your visit and don't forget to leave the completed questionnaire in the box provided at the park exit.

The first set of 5 questions are to be answered by the driver of the vehicle. The relate to the usual "head of your family", whether he/she is now in your party or not.

- #15. What is the sex and age of the "head of your family"? Check the appropriate boxes.

SEX	<input type="checkbox"/> male	and AGE	<input type="checkbox"/> 15 - 19	<input type="checkbox"/> 40 - 44
	<input type="checkbox"/> female		<input type="checkbox"/> 20 - 24	<input type="checkbox"/> 45 - 49
			<input type="checkbox"/> 25 - 29	<input type="checkbox"/> 50 - 54
			<input type="checkbox"/> 30 - 34	<input type="checkbox"/> 55 - 59
			<input type="checkbox"/> 35 - 39	<input type="checkbox"/> 60 and over

- #16. To what ethnic or cultural group did the "head of your family" or his/her ancestor (on the male side) belong on coming to this continent? Check one.

<input type="checkbox"/> Asian	<input type="checkbox"/> Native Indian (non-band)
<input type="checkbox"/> British Isles	<input type="checkbox"/> Netherlands
<input type="checkbox"/> French	<input type="checkbox"/> Polish
<input type="checkbox"/> German	<input type="checkbox"/> Russian
<input type="checkbox"/> Hungarian	<input type="checkbox"/> Scandinavian
<input type="checkbox"/> Italian	<input type="checkbox"/> Ukrainian
<input type="checkbox"/> Native Indian (band)	<input type="checkbox"/> Other _____
	(write in)

- #17. What kind of business, industry, or service does the "head of your family" work for? Give a full description. (eg. paper box mfg., road construction, retail shoe store, etc.)

(write in)

(a) What kind of work does he/she do? (eg. selling shoes, civil engineering, motor vehicle repairing, metal machining, clerical work, etc.)

(write in)

(b) What are his/her most important duties? (eg. fitting shoes, designing bridges, auto body work, operation lathe, posting invoices, etc.)

(write in)

please turn page

| |

- 1. playing golf
- 2. picnicking
- 3. walking/hiking
- 4. swimming/sunbathing
- 5. birdwatching
- 6. other nature study
- 7. power boating
- 8. playing other game or team sports
- 9. watching tournaments, exhibitions, etc.
- 10. visiting museums and/or other park displays
- 11. other -----
- 12. pleasure driving/sightseeing
- 13. water skiing
- 14. skin or scuba diving
- 15. playing tennis
- 16. Shore fishing
- 17. boat fishing
- 18. canoeing/rowing/sailing

(write in)

In the space below, please write in the numbers of the four activities from those you noted above which your party spent the most time doing. Beside each number please note the average number of hours spent on each per day.

Activity Number	Average Time Spent Per Day
(i) -----	-----
(ii) -----	-----
(iii) -----	-----
(iv) -----	-----

#23. What additional recreational opportunity or facilities would you like to see added to this park?

 (write in)

#24. Please estimate the amounts your party will spend in the INTERLAKE region of Manitoba while on this trip.

park entrance and camping fees	\$ -----
motel, hotel, and other housing costs	\$ -----
restaurants: food and drink	\$ -----
retail: food and beverage	\$ -----
clothing and shoes	\$ -----
outdoor equipment purchase	\$ -----
other general merchandise	\$ -----
fuel and automobile services	\$ -----
outdoor equipment rental	\$ -----
other expenditures: (please write in)	\$ -----
-----	\$ -----
-----	\$ -----
-----	\$ -----

If no expenditure was made please check box

please turn page

- *25. How much of the above expenditure is a direct result of your visit to Hecla Provincial Park? (note \$ or %) (ie. if the only reason for your trip to the INTERLAKE is to visit Hecla Provincial Park, then 100% of the expenditure noted above is a direct result of your trip to Hecla Provincial Park).

\$ _____ OF _____ %
(write in) (write in)

THANK YOU FOR YOUR HELP. HAVE AN ENJOYABLE TRIP HOME!

If you have accidentally carried this card away from the Park, please mail to:

Hecla Research Study
Department of Geography
The University of Manitoba
Winnipeg, Manitoba
R3T 2N2