

THE ECONOMIC SIGNIFICANCE
OF TOURISM TO THE ECONOMY
OF NEWFOUNDLAND

CENTRE FOR NEWFOUNDLAND STUDIES

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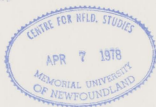
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THE ECONOMIC SIGNIFICANCE OF TOURISM
TO THE ECONOMY OF
NEWFOUNDLAND

by

Derek Willis James Banfield, B.A.

A Thesis submitted in partial fulfillment of the
requirements for the degree of
Master of Arts

Department of Economics

Memorial University of Newfoundland

January 1976

ABSTRACT

Tourism in Newfoundland has grown substantially over the years and is continuing to grow. As well, only limited efforts have been expended in developing a picture of tourism's economic significance to the people of Newfoundland. Hence, this paper has as its primary purpose the identification of the economic impact of tourist related spending on the Newfoundland economy. Secondary purposes of this thesis are to analyze previous writings related to the economics of tourism, and to examine the utility of income multipliers in the formulation of policy.

In attempting to attain these objectives/purposes the following approach is adopted. Firstly, the theory of the multiplier as it relates to tourism is presented. Secondly, a thorough literature review of tourism impact studies is undertaken. The review is in the form of critical analyses with a view to identifying theoretical and technical limitations. Thirdly, an analytical framework is developed to allow the most effective use of the limited empirical data within a conceptually sound approach. Fourthly, the data deemed necessary for the analytical framework is presented, and the model is applied. Fifthly, the overall impact (direct, indirect and induced effects) of tourist related spending is identified and applied to

determine the impact on, and tourism's share of, the total provincial personal income, employment and taxation revenue. Lastly, discussion of a sociological, cultural and ecological nature is presented. Based on this discussion and the economic analysis, factors which must be considered in the formulation of an industrial strategy for tourist development are cited.

The basic conclusions drawn are that tourism is indeed a multi-facet activity, and that the impact of tourism related spending is significant. Given the province's desire to alleviate chronic unemployment, underdevelopment and to have some degree of balanced growth in the sectors of its economy, tourism must be given the recognition it so rightly deserves as a necessary growth industry.

ACKNOWLEDGEMENTS

I wish to acknowledge my sincere appreciation and thanks to Professor D.L. Hull for his capable assistance and guidance in the preparation of this thesis.

I am also grateful to Professor G.E. Riser for his useful criticism, and to Professor W.E. Schrank for his having introduced me to this facet of Newfoundland's tourist industry.

As well, Mrs. Dallas Strange is to be commended on her transforming my writing into a proper form.

To my wife, Elizabeth, and son, Lloyd, I express my appreciation for their understanding and patience. There was always encouragement; if scholarship is lacking, I have only myself to blame.

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CHAPTER I

INTRODUCTION

Tourism forms an integral part of contemporary life. By reason of this fact, the possibility of taking part in tourism should be regarded as every individual's inalienable right.¹

Tourism has been defined as "the discretionary movement of persons from their normal domicile or place of work to some other country or destination for temporary purposes of holiday, business or other personal satisfaction."² It is spatial, social mobility. The fact that it is based on the movement of people rather than goods makes it an instrument of social as well as economic development, and a powerful agent for bridging the social, ideological, racial and general gaps that exists between people.

Importance of Tourism

The phenomenon of travel has given rise to a fast growing economic activity. As the former Minister of Industry, Trade and Commerce said, "Never before in history

¹Principles cited in the Vienna Charter as presented to the members of the International Bureau of Social Tourism during a meeting held in Vienna, October, 1972.

²Travel Industry Association of Canada, "Submission on a National Industrial Strategy for Tourism," A Compendium of Briefs: Industrial Strategy of Canada, a report prepared by the Canadian Chamber of Commerce (Montreal: Canadian Chamber of Commerce, 1973), p. 219.

has man had so much leisure time, and while the psychologists make wise pronouncements on what he should be doing with it, man has decided himself--he's hit the road."¹ In 1971, 720 million people enjoyed the experience of travel and spent \$79 billion doing it. In the last ten years of rapid industrial development, the international movement of goods more than doubled. The movement of people tripled.²

Tourism is Canada's second largest earner of foreign exchange, surpassed only by the export trade in vehicles and parts. One out of every twenty dollars in Canada's foreign earnings comes from travelling visitors. In 1971, \$1.3 billion was spent in Canada by non-Canadians.³ Canadians themselves spent \$2.5 billion on travel in Canada.

Traditionally, the place and relative importance of tourism in an economy was assessed with reference to its effects on the balance of payments. However, this criterion must be broadened because domestic tourism is in most cases a much greater source of income than international tourism (as evident above).

¹Spoken at a news conference on tourism by Jean-Luc Pepin, the former Minister of Industry, Trade and Commerce, August 14, 1972.

²Ibid.

³Canadian Government Office of Tourism, Department of Industry, Trade and Commerce, Canadian Travel Survey, 1971-Highlights (Ottawa: Queen's Printer, 1972).

A summary of tourist activity in Newfoundland for the decade 1961-1971 follows.¹

The volume of national and international tourism has greatly increased.² There has been a 425 per cent increase in inward passenger cars (ipc), and a 940 per cent increase in inward trailers (itt). The biggest jump came in 1966 when there was a 37 per cent increase in ipc's and a 99 per cent increase in itt's over the 1965 level.

National tourists greatly out-numbered those from other countries, and the vast majority of these live in Ontario and the eastern provinces. Only fourteen states of the United States of America sent a significant number of tourists to Newfoundland. There has been a 613 per cent increase in the number of national tourists entering the province, and an increase of 351 per cent in the number of American tourists. International tourists other than American's play a very minor role in Newfoundland's tourist industry. The provinces east of Manitoba accounted for 96 per cent of the total national travel into the province. The fourteen States listed in Table B-5, Appendix B, represented 74 per cent of the increase in ipc's and itt's from the United States for the years 1970 and 1971.

¹This is a summary of the tables presented in Appendix B.

²Refer to Appendix A for the definitions of national tourists and international tourists.

The peak months for the tourist industry are invariably June, July, August and September. A considerable number of Newfoundland's visitors are first-time visitors. In 1969, 41.5 per cent of the air passengers and 49.7 per cent of the Canadian National ferries' passengers indicated a first-time visit to the province. The main purposes for visiting were to visit friends or relatives and for general vacations. The average length of sojourns was two weeks. During the four months listed above, the movement of ipc's represent 75 per cent of the total yearly traffic of ipc's for both 1970 and 1971. The movement of itt's represented 88 per cent and 85 per cent of the total yearly traffic of itt's for 1970 and 1971 respectively.

Visitors included professionals, executives, craftsmen, mechanics and factory workers. Persons entering with children entered via ferry more often than via the airlines. However, those travelling by air contributed more in the form of expenditures per person while staying in the province.

The main places of stay were the homes of friends and relatives, hotels and motels. However, the provincial parks accommodated more and more tourists each year.

The provincial tourist office and the Canadian Government Office of Tourism (CGOT) combined to provide the main sources of promotional literature about the island.

Purpose of the Study

Having established that tourism in Newfoundland is a growing industry, this thesis will investigate the extent of the economic impact of tourist spending and spending induced by the tourist industry using the 1971 tourist figures. An attempt has been made to evaluate the impact of tourist expenditures by examining the determinants of this impact as expounded by B.H. Archer. The determinants are:

- (i) the volume of visitors;
- (ii) the extent of their expenditures; and
- (iii) the degree to which their spending recirculates within the province. Tourist related expenditures are those made by government and the private sector, not otherwise directly connected to tourist expenditures.¹

Volume of Visitors.--The volume of visitors and their origins are functions of the following:

- (i) promotional effort by private and public agencies;
- (ii) distance from the major populated areas;
- (iii) type of tourist facilities and their attractiveness to the general public; and
- (iv) income of the potential tourists.

¹B.H. Archer, Impact of Tourism Upon Regional Economics (Bangor: University College of North Wales, 1971), p. 183.

In order to maximize the benefits deriving from the effort expended in obtaining an ever increasing volume of visitors, the Department of Tourism has contracted the services of an advertising agency and a public relations and promotional agency.¹

Extent of Expenditures.--The extent of tourist expenditures is primarily a function of the number, variety and attractiveness of the expenditure outlets. Over the years, several studies have been undertaken by the former Tourist Development Office (now the Tourist Services Division, Department of Tourism) in co-operation with the Canadian Government Office of Tourism relating to volumes of visitors and their expenditures. The most recent study is the Air and Auto Exit Surveys, 1973.² As well, a picture of the supply side of the province's tourist industry was developed by the New Brunswick based consulting agency,

¹The advertising agency is McConnell Advertising Company Limited, Toronto, Ontario. The public relations and promotional agency is the McLean Group, Toronto, Ontario.

²Central Statistical Services, Auto Exit Survey - June 26 to August 6, 1973, Province of Newfoundland, Executive Council (St. John's: Queen's Printer, 1974); and Central Statistical Services, Air Exit Survey - June 28 to September 3, 1973, Province of Newfoundland, Executive Council (St. John's: Queen's Printer, 1974). These surveys were administered to non-resident tourists who departed from the island of Newfoundland via the Canadian National ferries (Auto Exit Survey), and the commercial airlines (Air Exit Survey). The surveys were undertaken to determine the number and the characteristics of tourists exiting from the province.

Research and Productivity Council, during the summer, 1973.¹

Recirculation of Expenditures.--The degree to which tourist spending recirculates within the province is primarily a function of the size of the province's economic base. The more goods and services that have to be imported, the more leakages there will be out of the region. Consequently, the lower will be the value of the local income multiplier. By the same token, the greater the proportion of expenditures made for goods and services produced in the province, the greater will be the increase in local income. Until now, there have been only limited efforts made to analyze the multiplier effect.² This study will strive to completely illustrate this property of the tourist industry.

Ideally, the model formulated will enable an accurate explanation of the movement of tourist expenditures through the Newfoundland economy. This will result in a quantification of the contribution of tourist expenditures to the local income of the people of Newfoundland. To

¹Research and Productivity Council, Newfoundland and Labrador Travel Industry Data Base (Fredericton, New Brunswick: Research and Productivity Council, 1973). This study documented the province's environment and support resources, presented an inventory of the province's travel plant and identified tourists' travel patterns.

²See: Atlantic Development Board, Tourism and Recreation in Nova Scotia, New Brunswick and Newfoundland (March, 1969); and Department of Regional Economic Expansion, Some Dimensions of the Tourist and Recreation Industry in the Atlantic Provinces in 1966, prepared for the (former) Atlantic Development Board, 1971.

complete the model developed, and to arrive at the full income effect of tourist related spending, investment and government expenditures induced by tourist spending are also considered. However, due to the great difficulty surrounding the accurate estimation of investment expenditures associated with tourism, as with government expenditures, these sources of expenditures are treated less rigorously than the direct spending of tourists.

After identifying the local income generated by tourism related expenditures, the levels of employment and taxation revenue supported by these expenditures can be estimated. Tools and measures emerge which can supplement the province's data base information on its existing tourist plant and the travel patterns of its tourists. The end result is that the provincial planners and the Department of Tourism officials ought to have a better idea of the economic impact of tourism and be so guided.

A subsidiary purpose of this study is to examine the question, "Of what use for policy and planning is the income multiplier?" The question will be discussed in Chapter IV. In any event, the answer will become evident as the primary purpose of this thesis is attempted via the systems analysis approach employed. By examining the nature of tourist multipliers and pointing out the weaknesses and limitations inherent in multiplier theory, methodology and data, the reader can compare his particular

objectives to what can be afforded by the income multiplier as expounded in this paper.

Study Approach

Scale replicas of ships and cars are termed models; they are merely simplified representations of a more complex entity. Globes are also models; they provide an intelligible picture of a complex planet. Taking this last phrase figuratively instead of literally, it is found that man's traditional reaction to the apparent complexity of the world around him has been to make for himself a simple and rational picture of the world. Thus a model is a simplified structuring of reality which presents significant features or relationships in a generalized form. Models must be kept simple to permit manipulation and understanding, but complex enough to represent that which is being studied. Therefore, they are necessary to constitute the bridge between observed facts and theoretical generalizations.

This study attempts to develop an algebraic model in order to determine the contribution made by tourist spending to the income of the people of Newfoundland. The following steps were taken to assure that the model developed is methodologically and theoretically sound. Firstly, the theory of the multiplier was examined to grasp the reiterating forces at work in an economy. Secondly, a search of the literature on tourism impact studies was undertaken. The literature so studied was grouped according

to method used (approach taken) and then examined critically for conceptual and technical limitations. The approach adopted was the one which proved most applicable to the province's tourist industry having regard for data considerations. This resulted in the formulation of an analytical framework to allow the most effective use of the limited empirical data within a conceptually sound approach. Thirdly, the data as deemed necessary by the analytical framework was gathered from printed survey material, studies and government publications. The sources of the information, how the data were applied, the calculations and qualifications undertaken and the limitations are made explicit in the text.

Description of the Chapters

Chapter II contains a discussion on multiplier theory, the methodological search and the conceptual framework of the model.

The data requirements, the application of the model to calculate the local income multiplier of tourist expenditures and the qualification of investment and government expenditures related to tourism are presented in Chapter III.

Chapter IV contains a discussion of the utility of the derived income multiplier. The total impact of tourist spending on the provincial income of the province,

the number of man-years of employment supported by the tourism industry and the taxation revenue accruing to the provincial treasury because of tourist spending are then computed.

Chapter V ties together the results of the previous chapters and introduces a discussion of a social, cultural and ecological nature which was excluded from the economic analyses of the previous chapters. These latter considerations must not be ignored in the planning and development of the tourism industry. The text is concluded with recognition being given to the most prominent factors that must be considered in the province's strategy for tourist development.

CHAPTER II

THE THEORY OF THE MULTIPLIER AND ITS APPLICATION TO TOURISM

In order to come to grips with a proper understanding of the principles behind the flow of tourist expenditures through the economy, a close examination of the multiplier principle and its application to tourism is necessary.

Multiplier Theory

A very straight forward definition of the multiplier is "the numerical coefficient showing how great an increase in income results from each increase in some component of aggregate demand such as, consumption, investment, government expenditures or exports."¹ Consider a situation where investment is allowed to vary. The multiplier may then be defined as the number by which increases (or decreases) in investment must be multiplied in order to give the increase (or decrease) in aggregate income associated with the change in investment. Given the saving function (the schedule of the economy's savings at various levels of income), the increased savings required to domestically finance the

¹P.A. Samuelson and A. Scott, Economics - An Introductory Analysis (Toronto: McGraw-Hill Company of Canada Limited, 1966), p. 252.

increased investment can come only out of an income enlarged by a multiple of the increment in investment. This enlargement comes about partly as a result of a primary (direct) effect and partly as a result of a secondary (indirect) effect of investment on income.

Assuming a simple, closed economy where fiscal and monetary policy and exports and imports are absent, the primary effect is that any additional investment automatically constitutes additional income, since income is always equal to the sum of consumption and investment. The secondary effect is that people increase their consumption expenditures when investment, and consequently also income, increase. But the additional expenditures of consumers also constitute additional income for those who sell the consumer goods. This additional income leads to further increases in consumer expenditures, and to further increases in income in a continuing process. How far will this process go? By how much in the final analysis will this economy's consumption and income increase as a result of an increase in investment? This depends on the marginal propensity to spend; that is, on the proportion of each additional dollar of income which the community devotes to additional consumption. The greater the additional consumption generated by an addition to income, the greater is the multiplier effect of an additional investment.

The multiplier process applies not only to increases in investment (or expenditures) leading to multiple increases in income, but operates in reverse also: a reduction in investment causes income to contract by a multiple of the reduction in investment. For example, assume investment declines, the primary effect is a reduction in income by an equal amount. As income falls, people save less and consumption declines. In turn, this reduces the income of others who react partly by curtailing their consumption. The end result is that income will have shrunk by a multiple of the reduction in investment (depending on the marginal propensity to spend).

A change in investment does not set off an endless expansion of income because some of the income-generating power of the additional expenditure leaks away. In a more complicated model, with a government sector and the export and import sectors, leakages may take the following form:

- (i) people want to save part of their additional income;
- (ii) corporations' savings increase by withholding corporate profits from stockholders;
- (iii) taxes; and
- (iv) leakages to foreign countries from which goods and services were bought.¹

¹L.A. Metzler and E.D. Domar, Income, Employment and Public Policy (New York: W. Norton and Company, Inc., 1964), p. 15.

Equilibrium in this model occurs when the total amount of the injections into the economy equals the total amount of leakages out of the economy. In other words, where investment, government expenditures and exports are balanced with savings, taxes and imports. The resulting multiplier applicable to changes in the level of investment, government expenditures and consumption is given in the following expression:

$$\frac{1}{1-c(1-x)+m}$$

where, c = marginal propensity to consume,

m = marginal propensity to import,

x = marginal propensity to collect taxes out of total income.¹

The deficiency of this analysis thus far is that the money supply and interest rates have been excluded. Worthy of note is the fact that the money stock of the economy and the rate of interest do affect the size of the multipliers.² There is an inverse relationship between the interest rate and the rate of investment. An example best facilitates the explanation of the effect of changes in the money supply. Assume that government expenditures increase. This causes the gross national product to rise, which in turn increases

¹W.L. Smith and R.L. Teigen, Readings in Money, National Income and Stabilization Policy (Homewood, Illinois: R.D. Irvin, 1970), Chapter 1.

²Ibid., p. 8.

the demand for money for transaction purposes. If the money supply remains the same, the money necessary for the increased transactions' balances must be obtained from asset balances. The interest rate will rise as the demand for transaction balances increases. This rise in the interest rate reduces investment expenditure, and thereby reduces the effect of the initial increase in government purchases. Subsequently, the size of the multiplier is not as large as it otherwise would have been.

Newfoundland's economy exerts only minor influence in the national economy. In 1972 the province's gross provincial product was only 1.44 per cent of Canada's gross national product.¹ As a result, Newfoundland's economy plays a very minor role in the determination of the interest rate and the money supply. Consequently, no further consideration will be given to changes in either.

With respect to the rapidity with which the full value of the multiplier is approached, there are three lags that must be considered:

- (i) the consumption lag;
- (ii) the output (production) lag; and
- (iii) the earnings lag.²

¹Atlantic Provinces Economic Council, Atlantic Report, Vol. III, No. 4, October, 1973, p. 7.

²L.A. Metzler, "Three Lags in the Circular Flow of Income," Income, Employment and Public Policy: Essays in Honour of Alvin Hansen (New York: Norton, 1948).

It is not possible to conceive of the whole multiplier process as being compressed into a single instant of time--having all the rounds occurring simultaneously. Only if consumers in the aggregate could know what the full effect on their incomes would be (not only the effect of the extra investment spending, but that of their own enlarged consumption spending, too), could the new equilibrium be imagined as being instantaneously established. Since this is absurd, the process is thought of as one which occurs over time. That is, as consumers repeatedly find their incomes have increased, they increase their expenditures; again finding their incomes higher, spending increases, and so on. The rounds in the model represent not merely analytical stages, but temporal stages as well.

The multiplier analysis is clearly a static--actually a comparative static--analysis.¹ It asks how different will be the equilibrium level of income that corresponds to different given levels of investment? However, it is difficult to conduct a discussion on multipliers in static terms.²

This study will consider a lag of two-three months for consumers to respond to increases in their income by

¹G. Ackley, Macroeconomic Theory (New York: The MacMillan Company, 1961), p. 313.

²Goodwin stated that instead of one long lag there is a type of distributed lag that is very long and certainly not negligible. See: R.M. Goodwin, "The Multiplier as a Matrix," Economic Journal, No. 59, 1949, pp. 537-555.

enlarging their consumption expenditures.¹ In other words, each successive round of increases in income and consumption represents a time span of two-three months; and it will take about a year for the main effect of the multiplier to have spent itself.

Kurihara pointed out that Keynes (who along with Kahn first introduced the principle of multipliers to help explain the consumption function, and upon whose ideas this study's discussion of the multiplier is based) failed to consider the "accelerator effect."² This effect should not be confused with the multiplier effect. The accelerator effect demonstrates what happens to investment as a result of a change in consumption. Keynes assumed that investment is independent of the level of income. When the two effects are combined (when consideration is given to the mutual effects which changes in consumption and investment have upon each other), a super-multiplier results as Kurihara denotes. This must always be greater than the simple income multiplier. It indicates that fluctuations in employment, output and income set off by changes in investment or consumption are even greater than would appear if only the multiplier and the accelerator effects

¹Metzler, *op. cit.*, p. 22; and Checchi and Company, The Future of Tourism in the Pacific and Far East (Washington, D.C.: United States Department of Commerce, 1961).

²Kurihara, Introduction to Keynesian Dynamics (London: Allen and Unwin, 1964), pp. 88-89.

were at work singularly. This study assumes that changes in income occur because of changes in investment or consumption, and it is not preoccupied with the reasons why investment or consumption changes.

Application of the Multiplier Concept to Tourism

Three types of multipliers are in common use in relation to the evaluation of the economic impact of the tourist industry:

- (i) the output, sales or transactions multiplier which measures the effect of tourist spending upon the economic activity levels in the economy;
- (ii) the employment multiplier which describes the ratio of primary, direct employment generated by tourist spending; and
- (iii) the income multiplier which shows the relationship between tourist spending and changes in the personal incomes of the people living within an area.¹

The three are intrinsically linked and are simply different ways of measuring the same impact.²

¹B.H. Archer, The Uses and Abuses of Multipliers (Bangor: University College of North Wales, August, 1973), p. 2.

²Clawson and Knetsch mentioned a fourth approach, the value added approach. This approach, as per their definition, was a measure of the sales of a firm less the cost of materials. As such it seems to have little applicability to the tourist industry, but rather to individual

This study will focus on the income multiplier for the following reasons:

- (i) the use of sales as a measure to record total transactions results in double counting;
- (ii) employment's unit of measure, the job, results in difficulty in determining how much of a job a person holds (for instance, an executive who works extra hours has only one job, as does a part-time employee); and
- (iii) this paper's main concern is the effect of tourist expenditures on the local income of Newfoundlanders.¹

With respect to the tourist industry, in the literature there have been three methods used to calculate the size of the regional income multiplier:

- (i) ad hoc models which are derived from the classical multiplier (called ad hoc models because the analytical framework developed depends upon data limitations, thus requiring assumptions about data);

firms. Where the term "value added" is written in this thesis, it means "increases or additions to local income." See: M. Clawson and J.L. Knetsch, Economics of Outdoor Recreation (Baltimore: John Hopkins Press, 1966), pp. 239-240.

¹The source of the reasons (i) and (ii) is C.M. Tiebout, The Community Economic Base Study (New York: Committee for Economic Development, December, 1962), pp. 45-46.

- (ii) the economic base theory multiplier, which is taken to be the change in total activity divided by the change in the relevant causal activity; and
- (iii) input-output analysis which presents the value of the flows of current transactions through an economy for a specific period of time.¹

Ad Hoc Models.--The classical multiplier $\frac{1}{1-mpc}$ is the basis of ad hoc models.² Charles Tiebout changed the form of the formula to read:

$$\text{Total Increase in Income} = A \times \frac{1}{1-BC}$$

where, A = tourist expenditures minus the payment for goods and services bought from outside the community;

B = the proportion of income that local people spend on local goods and services--the propensity to spend locally; and

C = the proportion of the expenditures of the local people that accrues as local income.

Using this format, more advanced models have been constructed for practical application. B.H. Archer applied the following formula to measure the income multiplier effect of tourist spending in Anglesey, North Wales.³

¹Archer, op. cit., pp. 3-10.

²Tiebout, op. cit., pp. 59-61.

³C. Owen and B.H. Archer, "Towards a Tourist Regional Multiplier," Journal of Travel Research, XI, No. 2, Fall, 1972.

The working model took the following form:

$$1 + \sum_{j=1}^N \sum_{i=1}^N Q_j K_{ij} V_i \left(\frac{1}{L} - \sum_{i=1}^n X_i Z_i V_i \right)$$

where, j = types of tourist accommodation = 1 ... n,

i = types of consumer outlets = 1 ... n,

Q = the proportion spent by each type of

accommodation user,

K = the proportion spent on each type of consumer
outlet by each category of tourist,

V = the income generated in each category of
expenditure,

L = the average propensity to consume,

X = the pattern of consumer spending,

Z = the proportion of income spent within the
region by the inhabitants.

The numerator of the model shows the proportion of the initial \$1.00 of tourist spending which results in actual income, A , to the people living in the region. The denominator is a more realistic expression of the symbols B and C . Separate formulae were developed to measure more accurately the V elements.

The use of an average propensity to consume (apc) rather than a marginal propensity to consume (mpc) deserves discussion. Although the apc can be determined with a minimum of effort, the rationale for actually preferring average to marginal relationships does not seem to

apply here.¹ Although it is typical of the tourist industry to hire more persons when tourist expenditures increase (the industry being service and labour oriented), the average income per worker actually declines. The new seasonal and part-time workers are for the most part women and students who accept lower wages than the permanent workers. Consequently, mpc is more appropriate.

The use of a family expenditure survey to determine the pattern of consumer spending, proportions of consumption expenditures and the subsequent assumptions leave room for thought. For example, expenditures on holidays were assumed entirely exogenous. Such an assumption may be acceptable for the small island of Anglesey, but not so for Newfoundland. A considerable amount of this province's tourist activity is the result of intra-provincial travel by Newfoundlanders.

The model is flexible enough to allow for the calculation of employment multipliers with only small adjustments having to be made. Because of the relatively large leakages out of the Anglesey economy, the multiplier proves insensitive to changes within the region. In conclusion, for a well defined region with a great deal of data available, this model has value. However, much of the information necessary to apply this model to Newfoundland is not

¹See: C.M. Tiebout, Markets for California Products (Sacramento: California Development Agency, 1962).

available. To secure it would require extensive and expensive research effort.

A somewhat different model was constructed by a team from Exeter University to measure the income multiplier in Devon and Cornwall.¹ The model took the following form:

$$\frac{1 - (1 - t_d - b)(c - t_{ic} - M_T)}{[1 - (1 - t_d - b)(c - t_{ic} - m)][1 - (1 - t_d - b)(c - t_{ic} - M_T) - M_{UK} M_{DC}(1 - t_d - b)^2]}$$

where, c = marginal propensity to consume,

t_d = marginal rate of personal income tax,

t_i = marginal rate of indirect tax,

b = marginal rate of government transfers to households,

m = marginal propensity to import,

M_T = the rest of the United Kingdom's total marginal propensity to import,

M_{UK} = marginal propensity of the rest of the United Kingdom to import goods and services from Devon and Cornwall,

M_{DC} = marginal propensity of Devon and Cornwall to import goods and services from the rest of the United Kingdom.

The assumptions made to obtain values for the various symbols are equally applicable to any tourist region in Great Britain.² Also, no empirical work was undertaken

¹Archer, *op. cit.*, pp. 5-6.

²*Ibid.*, p. 5.

to derive data specific to the region. Hence, there is little reason to accept the results as valid for Devon and Cornwall in particular. However, by varying the regional coefficients, the range of results obtained may be used as a guide to the probable limits of tourist multipliers in Great Britain.

Unlike the Anglesey model, the Exeter model does not reduce in its simplest form to $A \times \frac{1}{1} - BC$, but rather to $\frac{1}{1} - BC$. The Archer study considers only that portion of primary expenditures which is income to the region; while the Exeter study makes an allowance in the numerator of the expression for induced exports. If the Exeter and Anglesey models were applied to the same regional economy, the value of the multiplier derived with the Exeter model would be smaller. The import content of the initial transactions is not considered in the Exeter model; however, it is considered in the Anglesey model--the symbol A.

Professor G.C. Archibald developed a model to estimate the probable range of multipliers for the United Kingdom.¹ His initial expression is similar to the expression $y = C+I+G+X-M$. G, I and X are exogenous and are assumed to contain no import content. Induced expenditures are shown in the following functions:

¹G.C. Archibald, "Regional Multiplier Effects in the U.K.," Oxford Economic Papers, XIX, No. 1, March, 1967, pp. 22-45.

$$c = a + cY^d$$

$$m = b + mY^d.$$

Undistributed profits were assumed to be very small, and therefore ignored. The marginal tax rate (t) is given. The multiplier then takes the following form:

$$k = \frac{1}{1 - (c-m)(1-t)}.$$

There are three data requirements:

- (i) marginal tax rate (t),
- (ii) marginal propensity to consume (c),
- (iii) marginal propensity to import (m).

As stated above, t is assumed given and is equal to 0.2. The mpc is assumed equal to 0.9, and the mpm is assumed to be in the range of 0.4 to 0.25. The result is a range of multipliers between 1.2 to 1.7.

Upon examination of this approach, an obvious weakness becomes apparent. That is, the assumption that government expenditures (G), investment (I) and exports (E) contain no import content. Also, there is an attempt to fix a minimum value below which the value of β , which equals $(c-m)$, for any region could not lie. To do this a minimum series for the value added locally ($L = c-m$) by induced expenditure was calculated. The utility of this L-series is questioned. In the words of Professor Archibald, "the L-series, for what it is worth, was regressed on personal income. It will be clear that the use of the L-series, so constructed, for the estimation of multipliers demands

some rather strong assumptions about average and marginal value."¹

Because the results are not very tenable, this approach will not be given further consideration. However, Archibald's study does have merit in that it helped turn attention to models of the regional multiplier, thereby serving as a pioneering study of the regional multiplier in the United Kingdom.

Following along with the idea of local value added in terms of income, the most recent studies developing the local value added approach will be discussed.

The study The Future of Tourism in the Pacific and Far East built a series of models to show how, under varying conditions, expenditures by tourists flow through different types of economies.² The expenditures were categorized as either accommodation, food and beverages, purchases, sightseeing and amusement, and local transportation; then models tracing the path of each category of expenditures were developed. Worthy of note is the fact that the flow through effect has been traced for one year (five or six transactions). As stated previously, it has been accepted that the initial expenditures cease to have a really substantial impact on the economy after a twelve month period. Leakages determine this time period.

¹Ibid., pp. 29-30.

²Checchi and Company, loc. cit.

and they occur when money leaves the economy or when it does not move within the economy.

Various assumptions are made in the "Pacific Study" respecting the import coefficients. Based upon the Checchi and Company estimates and rules of thumb, percentage breakdowns of the expenditures into wages, rent, food and taxes are presented. The result is an estimated annual turnover, by category of tourist expenditures, as made explicit in Table II-1.

In Table II-1 it can be seen that after five transactions (approximately one year), the total amount of spending resulting from an initial tourist expenditure of \$1,000 was \$3,272 (the income multiplier being 3.27). However, the value 3.27 deserves comment. Looking at the table it can be seen that no leakages are allowed for in the first two transactions (four or five months) after the initial expenditure. If the model is to show a local income multiplier, it is necessary to allow for all leakages in all the transactions. If proper adjustments are made for the leakages of income away from the region's economy, the resulting spending figures in each round would be much lower, thereby resulting in an annual turnover per dollar of tourist expenditure figure of a much smaller magnitude than 3.27.

Although this approach avoids the technicalities of the L-series as in the Archibald study, it does necessitate

TABLE II-1

ESTIMATED ANNUAL TURNOVER, BY CATEGORY,
OF \$1,000 OF TOURIST EXPENDITURES

Category of Spending	Number of Transactions					Total Spending	Annual Turnover per Dollar
	One	Two	Three	Four	Five		
Accommodation	\$ 250	\$ 250	\$178.00	\$112.00	\$ 64.50	\$ 854.50	3.42
Food & Beverages	320	320	211.00	137.00	63.50	1,051.50	3.28
Purchases	250	250	149.00	89.50	48.50	787.00	3.15
Sightseeing & Amusement	100	100	70.50	41.00	25.00	336.50	3.365
Local Transportation	50	50	29.00	16.50	7.50	153.00	3.06
Other	30	30	16.50	9.00	4.50	90.00	3.00
Totals	\$1,000	\$1,000	\$654.00	\$405.00	\$213.50	\$3,272.50	3.27

Source: Checchi and Company, The Future of Tourism in the Pacific and Far East (Washington, D.C.: U.S. Department of Commerce, 1961), p. 24.

detailed knowledge of the expenditure breakdowns of wages, rent, food and taxes, the import coefficients, and the tax rates.

The study The Future of Tourism in the Eastern Caribbean, by Zinder and Associates, closely follows the procedure as laid down in the Checchi and Company study.¹ Zinder's approach follows. Firstly, the expenditures of the visitors in the Eastern Caribbean were categorized into accommodation, food and beverages, purchases and local transportation. The expenditures were then traced through the economy for the accommodation and food and beverage categories. Based upon the Zinder and Associates' findings, the money spent by tourists for purchases was found to move through the economy in roughly the same manner as money spent for food and beverages. Similarly, money spent for sightseeing and local transportation would move roughly the same as money spent for accommodation. The totals of the expenditures for each of the categories' four rounds of transactions were then added together. The estimated annual turnover was arrived at by dividing the estimated total spending figure by the original tourist expenditures.

According to the report, "Studies of this kind are based on an application of work done by Dr. Paul A. Samuelson (Interactions Between the Accelerating Principle

¹H. Zinder and Associates, Inc., The Future of Tourism in the Eastern Caribbean (Washington, D.C.: Agency for International Development, May, 1969).

and the Multiplier, 1939), in some cases by constructing models."¹ However, as used here the tourist multiplier differs considerably from the Samuelson multiplier. Samuelson, in 1939, was working with models of a closed economy.² Zinder is applying his model to an economy with an export-import sector.

As in the Checchi study, there is confusion between the gross total arrived at by adding together the nominal values of the different transactions (which should be nothing more than an arithmetic check) and any addition to national income. The actual value added is determined by adding the extra income generated in each transaction of the economic process. However, the two studies' approaches have resulted in a multiplying of the multiplier. This point is well made by Professor Kari Levitt and I. Gulati, as noted below.

Although the objections raised entirely invalidates the multiplier value derived by Zinder and Associates, they do not destroy the overall approach of the model. Bryden and Faber overcome the shortcomings of the Zinder report by applying Dr. O'Loughlin's transactions matrix for Antigua.³

¹Zinder and Associates, Inc., op. cit., p. 24.

²J. Bryden and M. Faber, "Multiplying the Tourist Multiplier," Journal of Social and Economic Studies, XX, Part I, 1971, p. 67.

³Ibid., p. 69. They applied the final demand vectors, the sectorial tourist receipts, to the inverted

The resulting input-output multiplier was 0.88 as compared to the Zinder multiplier of 2.3.

Professor K. Levitt and I. Gulati also discredited the Zinder report: "It greatly exaggerates the degree to which tourist expenditures can generate secondary and tertiary incomes by the operation of 'multipliers'."¹ Worthy of note, also, is the fact that the propensities to consume and import, the ratio of tax yield to national income, and the share of wages in national income were considered identical in each of the nine territories of the Eastern Caribbean. This is a very extreme assumption.

The Levitt and Gulati paper states that, "The basic fallacy of the report stems from the fact that the authors do not appear to understand the elements of the theory of income multipliers."² The remedial approach taken will be given much closer attention later.

The Multiplier Effect in the Tourist Industry in Prince Edward Island, by J.L. Herivault, also makes use of

transactions matrix. This resulted in an estimation of the impact on gross domestic product of the given pattern and level of tourist receipts during the particular year. Transaction matrixes are discussed in this chapter, sub-section Input-Output Analysis.

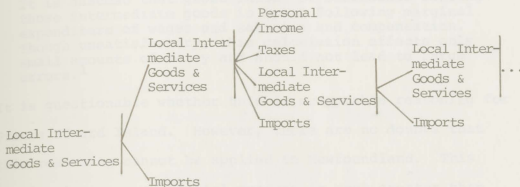
¹K. Levitt and I. Gulati, "Income Effect of Tourist Spending: Mystification Multiplied: A Critical Comment on the Zinder Report," Journal of Social and Economic Studies, XIX, No. 3, September, 1970, pp. 326-343.

²Ibid., p. 329.

the basic approach of local value added, as did the Checchi and Zinder studies.¹ Professor Herivault's methodology follows. The tourist expenditures were categorized into transportation, accommodation, restaurants, groceries, entertainment, souvenirs and crafts, miscellaneous and alcoholic beverages. The percentages of net profit and wages and salaries for the businesses in each category were determined from Statistics Canada publications. The difference of the percentages from 100 per cent was then divided into indirect taxes, intermediate goods and services, and imports. The indirect taxes were assumed to be the 7 per cent sales tax except for gas (37 per cent), amusements (10 per cent) and alcoholic beverages (50 per cent). The estimation of imports was determined by assuming that Prince Edward Island follows closely the import pattern of Nova Scotia. The expenditures on local goods and services were determined from Statistics Canada publications on the marginal expenditures for urban and farm families. It was then assumed that the indirect taxes were not respent immediately. As a result, the final multiplier effect depended upon the spending habits of the people receiving income from wages and salaries, owner compensation and the proportion of imports in local and intermediate goods in the second round of the multiplier.

¹J.L. Herivault, The Multiplier Effect in the Tourist Industry in Prince Edward Island (Charlottetown: University of Prince Edward Island, December, 1969).

Finally, using the marginal expenditure behaviors, the reiterating process as outlined below was followed through the economy.



Upon examination of this approach the following limitations and shortcomings become apparent. The import coefficients which are the most prominent factor in determining the local value of an expenditure in an economy were assumed to be similar to those of another economy, that is, Nova Scotia's economy. It appears that no serious effort was made to qualify these percentages--simply an interview with a local department store. The assumption that indirect taxes were not respent immediately is questionable. Governments spend according to their budgets and spending is an on-going process. Normally, governments do not spend only after taxes are collected and strictly according to the amount collected. The marginal expenditure patterns applied in this study were based on the years 1964 (for urban families) and 1958 (for farm families). No attempt of

qualification or revision of these figures was evident.

Professor Herivault's approach is even questioned by himself:

It is assumed that gross income of businesses selling those intermediate goods is split following marginal expenditure of wages and salaries and compensation. Though unsatisfactory, this calculation affects only small amounts of money and should not lead to large errors.¹

It is questionable whether this is acceptable reasoning for Prince Edward Island. However, there are no doubts that this reasoning cannot be applied to Newfoundland. This province's gross provincial product is much greater than that of Prince Edward Island. (In 1961, Newfoundland's gross provincial product was 4.26 times that of Prince Edward Island, and in 1971, 4.69 times).²

Economic Base Studies.--Although economic base studies use employment as the most common unit of measurement, it seems impossible to discuss the impact of tourist expenditures on an economy's income without examining the economic base approach.

An economic base multiplier for the tourist industry was used by R.R. Nathan Associates to calculate the secondary employment generated by tourist spending in each of the

¹Ibid., p. 12.

²Atlantic Provinces Economic Council, Atlantic Provinces Statistical Review (Halifax: APEC, January, 1974).

376 counties of Appalachia.¹ The derivation and specification of the local employment multiplier developed in this study follow:

$$Er = Erc + ErL + Erg + Erx$$

where, Er = total regional employment,

Erc = regional employment servicing local household consumption,

ErL = local employment servicing investment activity,

Erg = local employment servicing local, state and national government activities,

Erx = local employment servicing regional exports.

Investment, government and export activities were all treated as exogenous activities in the sense that the money was considered to have been injected into the regional economy from outside. From the equation

$$Er - Erc = ErL + Erg + Erx,$$

$$1 - Erc/Er = \frac{ErL + Erg + Erx}{Er} \quad \text{and therefore}$$

$$\alpha_{Er}/\alpha_{ErL} = \alpha_{Er}/\alpha_{Erg} = \alpha_{Er}/\alpha_{Erx} = 1/1 - \frac{Erc}{Er}.$$

This means simply that if α_{Erx} is the direct increase in employment created by tourist spending (an export activity), and α_{Er} is the resulting increase in total regional

¹R.R. Nathan Associates, Inc., and Resources Planning Associates, Recreation as an Industry (Washington: Appalachian Regional Commission, December, 1966).

employment, then

$$\frac{Er}{Er_x} = \frac{1}{1 - \frac{Er_c}{Er}}$$

gives the indirect employment increase (created by each unit of direct employment) in the form of a multiplier expression.

This adjusted economic base multiplier was applied to several counties in Appalachia for which recent input-output studies had been completed. The multipliers resulting from both the economic base model and from the input-output analyses were of similar magnitude.

In the paper Techniques for Estimating Local and Regional Multiplier Effects of Changes in the Level of Major Governmental Programs an attempt was made to make an observation on the state of local and regional impact analyses.¹ It was concluded that the different multiplier values will always be roughly comparable in magnitude. Therefore, if this is true, the approach taken matters little. The size of the multiplier effect derived and the justification for the use of one model as against another depends primarily upon the problem at hand, data available and the time and resources which the analyst can command.

¹W. Isard and S. Czamanski, "Techniques for Establishing Local and Regional Multipliers Effects of Changes in the Level of Major Governmental Programs," Peace Research Society Papers, III, 1965, p. 32.

Although the information provided by economic base studies is valuable, there are many difficulties inherent in the economic base approach. Among the benefits are the following:

- (i) an understanding of the amount and sources of income and employment are provided by base studies. For instance, in some communities seemingly small industries may be revealed as a major source of basic employment;
- (ii) weaknesses in the communities' economy can be determined. For instance, the amount of an export employment that is tied to one industry.¹

Among the difficulties are the following:

- (i) the classification of each activity as either wholly export or wholly service;
- (ii) alternatively, the division of any particular activity into that fraction which is either export or service;
- (iii) the practical application of the assumption that not only consumption patterns, but also production patterns, are identical when different areas or regions are compared;
- (iv) the failure to recognize and incorporate into the model imports as the counterpart of exports;

¹Tiebout, The Community . . ., op. cit., p. 15.

- (v) the failure to incorporate interregional transfers of funds without a corresponding flow of goods; and
- (vi) the dependence of the results upon the particular industrial breakdown used.¹

With the use of employment as the unit of measurement as in the Appalachia study, other technical difficulties become apparent:

- (i) the total significance for expansion because of the different wage levels in the regions' activities is not properly depicted. For instance, the same increase in employment for two industries paying significantly different wages leads to different multiplier effects;
- (ii) employment data does not reflect the expansionary effects which result over the years from changes in physical productivity.²

Discussion of these and many other problems of both a technical and conceptual nature is contained in the relevant literature.³

¹Isard and Czamanski, op. cit., p. 21.

²R.B. Andrews, "Mechanics of the Urban Economic Base," Land Economics, XXX, February, 1954, p. 53.

³See in particular: W. Isard, Methods of Regional Analysis (New York: John Wiley, 1960), pp. 189-205; J. Alexander, "The Basic-Nonbasic Concept of Urban Economic Functions," Economic Geography, XXX, 1954, pp. 246-261; R.B. Andrews, "Comments re: Criticisms of the Economic Base Theory," Journal of the American Institute of Planners, XXIV, 1958, pp. 37-40; H. Blumesfeld, "The

In conclusion, the economic base approach is weakened by its dependence upon two unrealistic assumptions:

- (i) all economic growth is treated as originating from exogenous sources; that is, it is assumed that growth is not possible in a "local" economy;
- (ii) all outside injections of money, whether by private investors, government projects or tourist spending are considered to have the same multiplier effect upon the regional economy.¹ (This assumption is shown to be palpably incorrect by other forms of economic analysis).²

Input-Output Analysis.--The third method used to calculate regional tourism income multipliers is input-output analysis. Several tourist input-output studies have been carried out. Floyd Harmston has analyzed the

Economic Base of the Metropolis," Journal of the American Institute of Planners, XXI, 1955, pp. 114-115; C. Levin, "Measuring the Economic Base," Papers and Proceedings of the Regional Science Associations, II, 1965, pp. 250-258; J.M. Matilla and W.R. Thompson, "Measurement of the Economic Base of the Metropolitan Area," Land Economics, XXXI, 1955, pp. 215-228; S. Czamanski, "A Model of Urban Growth," Papers and Proceedings of the Regional Science Association, XIII, 1963; C. Tiebout, "Exports and Regional Economic Growth," Journal of Political Economy, 64, 1956, pp. 160-164.

¹Archer, op. cit., p. 9.

²R.L. Kalter and W.B. Lord, "Measurement of the Impact of Recreational Investments on a Local Economy," American Journal of Agricultural Economics, Vol. 50, No. 2, May, 1968, pp. 243-257.

effects of tourist spending on the economies of south-western Wyoming and Missouri State.¹ Hays B. Gamble has derived tourist multipliers for Sullivan and Clinton counties in Pennsylvania.² William A. Strang has assessed the multiplier effect of tourism in Door County, Wisconsin.³ Other studies are the 1971 DREE study entitled Some Dimensions of the Tourist and Recreation Industry in the Atlantic Provinces in 1966, and the study, 1971 Non-Resident Tourist Expenditure Impact, prepared for the Nova Scotia Department of Tourism.⁴

Input-output tables show how the activities of the various sectors of an economy are interlinked and how they are related to the economic activity in the rest of the country. Many sectors of the economy are used, depending on the structure of the economy. With an increase of

¹F. Harmster, "The Importance of 1967 Tourism to Missouri," Business and Government Review, May-June, 1969, pp. 5-13.

²Hays B. Gamble, Community Income from Outdoor Recreation, a paper presented to the Governor's Conference on Recreation and Parks, May 19, 1965, Ocean City, Maryland.

³W.A. Strang, Recreation and the Local Economy, a Sea Grant Program paper (Madison: University of Wisconsin, 1970).

⁴Department of Regional Economic Expansion, Some Dimensions of the Tourist and Recreation Industry in the Atlantic Provinces in 1966, prepared for the (former) Atlantic Development Board, 1971; Statistics Branch, 1971 Non-Resident Tourist Expenditures Impact, Province of Nova Scotia, Department of Development (Halifax: Queen's Printer, August, 1972).

tourist expenditures in the service sector, the level of sales and, consequently, the level of the incomes of the people in that sector would rise. This indirectly affects the sales and incomes in other sectors as the service sector's level of purchases from the other sectors increase. The increased output of these sectors require additional inputs, resulting in still further rises in sales and incomes. The increase in regional incomes would enable the resident population to increase their consumption expenditures. Assuming that part of this increase is spent within the region, a further impetus to each sector to increase its level of output is created. The tables facilitate easy explanation of this reiterating process.

David G. Wells applied the techniques of input-output analysis to trace the probable impact of any new industry upon the Newfoundland economy.¹ Although his thesis was not a tourism impact study, it examines the interindustry transactions of the province's input-output table and, as such, is worthy of mention. The results of Wells' study will be compared with the multiplier values derived in this thesis and for other regions in other studies in Chapter III. The method applied allowed for

¹D.G. Wells, "Regional Economic Impact of Two Growth Centres in Newfoundland: An Application of Industrial Complex Analysis" (unpublished Master's dissertation, Department of Economics, Memorial University of Newfoundland, June, 1969).

tracing the probable impact of any new industry upon the province's entire economy. Wells states that input-output analysis is more suitable than any other method for this type of study, since the analysis is detailed enough to show effects at the level of the individual industry. The dangers of more aggregate methods to overstate the degree of substitution possible between inputs and outputs of different industries is avoided. Also, it is possible to analyze developments within each sector of the economy rather than having to consider only the effect upon the whole economy.

Input-output analysis, which underscores inter-industry relations and linkages and incorporates them into a regional analytical tool, has several limitations and weaknesses.¹ For example:

- (i) input-output tables require meaningful data and reliable information is very costly to obtain. Also, the number of social scientists capable of undertaking an input-output study is very small;
- (ii) the cost of periodically up-dating the information is as great as carrying out the original survey. This up-dating is necessary, otherwise the model will show only the regional economy as it was structured in the base year; and

¹Archer, op. cit., pp. 12-13.

(iii) it is assumed that as the output of a sector increases, further inputs of materials, services and factors of production are required in the same proportions and from the same sources as before. This assumption of linearity ignores the possible existence of economies of scale, or possible switches to different sources of supply.

Discussions of these and other problems of input-output tables is contained in the relevant literature.¹

Upon examination of the ad hoc (value added locally) approach, the economic base approach and the input-output approach, it becomes apparent that the latter is the most theoretically sound and acceptable approach. It is the approach which best detects the variation in the production and distribution characteristics of individual industries in different regions, and the nature of the inter-relationships within these industries and between these industries and other economic sectors.²

¹See in particular: W.W. Leontief, Input-Output Economics (New York: Oxford University Press, 1966); Scientific Conference on Statistical Problems, Input-Output Tables (Budapest: 1961); B. Cameron, Input-Output Analysis and Resources Allocation (Cambridge: University Press, 1968); W.J. Baumol, Economic Theory and Operations Analysis (New Jersey: Prentice-Hall, Inc., 1961), pp. 479-490.

²Isard and Czamanski, op. cit., p. 27.

However, one must not accept all input-output studies without close scrutiny. For example, the Nova Scotia study is very well founded, but it has several technical limitations:

- (i) the hotel-motel-restaurant vectors were applied to evaluate the accommodation and restaurant expenditure category. This choice of vectors is based on the statement, "It is probably true that the vast majority of accommodation expenditure is on the hotel-motel sectors."¹ The Canada Travel Survey for the same year, 1971, states that motels and hotels account for only 8.6 per cent of the total person-nights by type of accommodation in Nova Scotia (in relation to Canadian trips of 100 miles or more from the origin).² The vectors incorporating expenditures on camp grounds, friends and relatives, and forms of accommodation establishments other than hotels and motels should have been applied. Expenditures on the latter set of accommodation establishments do not have the same linkages in the economy as the hotel-motel expenditures;

¹Statistics Branch, op. cit., p. 16.

²Canadian Government Office of Tourism, Department of Industry, Trade and Commerce, Canadian Travel Survey, 1971-Highlights (Ottawa: Queen's Printer, 1972), p. 50.

(ii) with respect to the category of expenditures, recreation and entertainment, it is impossible to apply the proper vectors. The definition of entertainment and recreation is ambiguous. For instance, some tourists may travel by trailer and partake of a night of relaxation, swimming and fine food, calling this recreation and entertainment. While for other tourists it may mean a night on the town (nightclubbing, etc.). A subsequent problem arises in that tourists may have also taken account of the expenditures on the above under the accommodation expenditure category, thereby resulting in double counting.

It can be seen that each method has its limitations and advantages. And, it must be accepted that multiplier analysis is a powerful tool only if it is interpreted correctly, used realistically and the limitations are understood.

Based upon the discussion of the three methods, the following table is derived:

TABLE II-2

EVALUATION OF APPROACHES, COMPARATIVELY,
FOR APPLICATION TO NEWFOUNDLAND

Method	Theoretical Considerations	Data Considerations
Ad hoc	Strong	Strongest
Economic base	Weakest	Weak
Input-output	Strongest	Weakest

With respect to the ad hoc methods, two approaches prevail:

- (i) that which applies aggregated tourist expenditures to the aggregated propensities and coefficients of the region;
- (ii) that which applies disaggregated tourist expenditures to propensities and coefficients calculated according to expenditure categories on a regional basis.

Because approach (i) does not make allowance for the proper channelling of the different expenditure categories through the economy, approach (ii) is the more desirable.¹ As a result, the ad hoc method first used by Checchi and Company, applied by Zinder and Associates and modified by Bryden, Faber, Levitt and Gulati will be further modified and adopted. All the limitations of this local value added approach will be considered in an effort to make the application to the Newfoundland tourist industry as methodologically sound as possible.

The Analytical Framework

The change in income starts with a given change in the amount of expenditures, in this study the change is

¹See: Bryden and Faber, op. cit., p. 69. "By itself, the method of tracing the effects of a given structure of 'final demand', in this case a pattern of tourist receipts, through particular 'rounds of transactions' is perfectly legitimate and indeed preferable to assuming a single uniform marginal propensity to import."

equal to tourist spending (E_T). The induced increase in Newfoundland's income by E_T depends primarily upon the size of the province and its industrial structure; in other words, the economic base of the province. Because it is a small economic region within Canada and there is little industrial development, the local component of E_T is confined largely to the local manpower engaged in the industries serving the tourists.¹

Let m_T stand for the import content of the total goods and services necessary to meet the additional tourist expenditures, E_T . Let t_{iT} stand for the indirect taxes paid for the goods and services provided to meet the additional tourist expenditures. The increase in the local income will then be equivalent to

$$E_T(1-m_T-t_{iT}).$$

There are other leakages that must be considered before the actual value added locally can be determined. The share of profits (p_T) which accrue to the non-resident owners of the establishments catering to the tourists must be deducted. The fraction of income paid as direct taxes (t_{dT}) must also be deducted, as must the fractional decline of income paid as transfer payments (u_T). The rise in the province's disposable income--the local value added--will now be

$$E_T(1-m_T-t_{iT})(1-p_T-t_{dT}-u_T).$$

¹Atlantic Provinces Economic Council, loc. cit.

Assume that a rise in consumption expenditures is matched by a corresponding rise in the production of goods and services; and that all the coefficients for expenditure on goods and services by the residents of Newfoundland and the non-resident tourists are the same. With a propensity to consume equal to c , the following expressions of the change in real output results:

$$\frac{E_T(1-m_T)}{(1-m_T-t_{iT})(1-p_T-t_{dT}-u_T)(1-c)} \quad \text{and}$$

$$E_T(1-m_T) \left[\frac{1}{1-c(1-m_T-t_{iT})(1-p_T-t_{dT}-u_T)} \right].$$

This multiplier expression is representative of the direct and indirect income generated by the tourist spending. The imports at the initial stage are shown in the numerator of the expression (which is representative of A in the expression $A \times \frac{1}{1-BC}$, as on page 21). If the value of m_T is substantial, the total expression of the provincial income, including the effect of the multiplier will be less than the increase in the province's receipts from tourist expenditures.¹

There is an additional factor which is not in the expression and which will be ignored. The additional stimulus resulting from the province's increased imports

¹This means that if the import propensity is large enough to result in a multiplier expression less than one (1), then the local income generated will be less than the value of the initial expenditure.

which will increase the demand for its exports is very small, and there will be no attempt to quantify it.¹

The above results in an analytical framework for approach (i) of the ad hoc methods. It will be developed further into a framework which will allow for the proper channelling of the different categories of tourist spending through the economy approach (ii).

The total tourist expenditures/receipts (E_T) are disaggregated into the following categories: transportation (E_{T1}), food and beverages (E_{T2}), accommodation (E_{T3}), sight-seeing and entertainment (E_{T4}), preparation and purchases (E_{T5}), and miscellaneous (E_{T6}). Each of these categories are receipts of the operators of establishments catering to the tourists and are broken down according to the respective establishments' operating results based on Statistics Canada publications.² The operating results are then grouped under one or more of the following six expense categories: wages and salaries (H_1), profit, rent and interest (H_2), provincial and municipal taxes (H_3), depreciation (H_4), purchases (H_5)

¹ See: A.J. Brown, H. Lind, J. Bowers, "The 'Green Paper' on the Development Areas," National Institute of Economic Review, May, 1967. A multiplier effect without feedback effects of 1.28 was produced; after the feedback effects were taken into account this increased only to 1.29.

² Statistics Canada's operating results are profit and loss statistics presented mainly in the form of percentage of net sales. They are collected to provide averages or ratios on the different phases of businesses which firms in the same industry may use to make comparisons with their own results.

and imports (H_6).¹ A leakage coefficient is derived for each of the expense categories based upon the following expression:

$$1 - c(1 - m_T - t_{iT}) (1 - p_T - t_{dT} - u_T).$$

The disaggregated leakage coefficients (L_1, L_2, \dots, L_6) enable the calculation of the proper local value added.

Each expense category (H_1, H_2, \dots, H_6) is then totalled and the respective leakage coefficient (L_1, L_2, \dots, L_6) is applied. See Diagram II-1 for a picture of the categorization discussed in this paragraph.

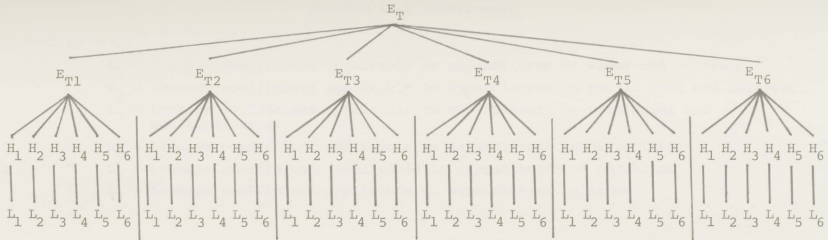
The resulting total real output is determined by the summation of the initial impact, the first round impact and the subsequent rounds' impact. Where e_{ij} refers to the j^{th} expense category of the i^{th} type of tourist expenditure/receipt, the following notations apply to the algebraic presentation of each impact:

$$\begin{aligned} \text{(i)} \quad E_{T1} &= e_{1j} \\ E_{T2} &= e_{2j} \\ E_{T3} &= e_{3j} \\ E_{T4} &= e_{4j} \\ E_{T5} &= e_{5j} \\ E_{T6} &= e_{6j} \end{aligned}$$

¹Federal taxes are treated as imports because they leave the region under study, and the applicable leakage coefficient is 100 per cent.

DIAGRAM II-1

CATEGORIZATION OF TOTAL TOURIST EXPENDITURES/RECEIPTS



E_T = Total tourist expenditures/receipts
 E_{T1} = Expenditures by tourists on transportation
 E_{T2} = Expenditures by tourists on food and beverages
 E_{T3} = Expenditures by tourists on accommodation
 E_{T4} = Expenditures by tourists on sightseeing and entertainment
 E_{T5} = Expenditures by tourists on preparation and purchases
 E_{T6} = Miscellaneous expenditures by tourists.

H_1 = Expenditures by establishment operators on wages and salaries
 H_2 = Expenditures by establishment operators on profit, rent and interest
 H_3 = Expenditures by establishment operators on provincial and municipal taxes
 H_4 = Expenditures by establishment operators on depreciation
 H_5 = Expenditures by establishment operators on purchases
 H_6 = Expenditures by establishment operators on imports.

DIAGRAM II-1 (Continued)

- L_1 = Leakage coefficient applicable to expenditures on wages and salaries
- L_2 = Leakage coefficient applicable to expenditures on profit rent and interest
- L_3 = Leakage coefficient applicable to expenditures on provincial and municipal taxes
- L_4 = Leakage coefficient applicable to expenditures on depreciation
- L_5 = Leakage coefficient applicable to expenditures on purchases
- L_6 = Leakage coefficient applicable to expenditures on imports.

$$(ii) \quad H_1 = e_{i1}$$

$$H_2 = e_{i2}$$

$$H_3 = e_{i3}$$

$$H_4 = e_{i4}$$

$$H_5 = e_{i5}$$

$$H_6 = e_{i6}$$

$$(iii) \quad L_1 = l_1$$

$$L_2 = l_2$$

$$L_3 = l_3$$

$$L_4 = l_4$$

$$L_5 = l_5$$

$$L_6 = l_6$$

Initial Impact.--The initial impact is equal to the following:

$$\sum_{i=1}^n e_{i1} + \sum_{i=1}^n e_{i2} + \sum_{i=1}^n e_{i4}$$

where, $i = 1, 2, 3, 4, 5, 6$.

In other words, the initial impact is equal to the initial expenses incurred by all the tourist establishment operators which result in immediate increases in local income. These expenses are wages and salaries (H_1), profit, rent and interest (H_2), and depreciation (H_4). Expenses incurred on municipal and provincial government taxes (H_3), purchases (H_5)

and imports (H_6) do not result in direct increases in local income and therefore do not constitute part of the initial impact.

First Round Impact.--The first round impact (y) is equivalent to the following:

$$\sum_{i=1}^n y_i$$

where, $i = 1, 2, \dots, 6$

$$y_1 = \sum_{j=1}^n e_{1j}(1-l_j) \quad \text{where } j = 1, 2, \dots, 6$$

$$y_2 = \sum_{j=1}^n e_{2j}(1-l_j) \quad \text{where } j = 1, 2, \dots, 6$$

.

.

$$y_6 = \sum_{j=1}^n e_{6j}(1-l_j) \quad \text{where } j = 1, 2, \dots, 6.$$

In other words, each category of tourist expenditure receipts ($E_{T1}, E_{T2}, \dots, E_{T6}$) has each of its expense categories (H_1, H_2, \dots, H_6) applied to the respective leakage coefficients (L_1, L_2, \dots, L_6). The results are totalled and representative of the value of the local income generated after the first complete round of transactions.

Subsequent Rounds' Impact.--The subsequent rounds' impact is equivalent to the following:

$$\sum_{i=1}^n y(1-ls)^{x-1}$$

where, y = first round impact

$i = 1, 2, \dots 6$

ls = leakage coefficient applicable to the subsequent rounds

$x = 1, 2, \dots 6$, and refers to the number of rounds of transactions.

In other words, the subsequent rounds' impact is equal to the summation of the income generated in the previous round multiplied by the leakage coefficient applicable to the subsequent rounds. Six rounds are considered because after twelve to eighteen months have passed from the date of the initial expenditure the rippling effect ceases to be significant.

The analytical framework developed herein will be applied in the next chapter to determine the effect of tourist expenditures on local income. Extreme data limitations rendered it impractical to develop analytical frameworks similar to the one above in the derivation of the income effects of investment and government spending related to tourism. As a result ad hoc approaches were defined to estimate the contribution to local income made by tourism induced investment and government expenditures. Explanations of the data constraints and the resulting methods employed are presented in Chapter III, sections entitled Investment and Government Expenditures.

CHAPTER III

NEWFOUNDLAND TOURISM MULTIPLIER

Data Requirements

The data requirements are those deemed necessary in a realistic application of the theoretical framework developed in the previous chapter.¹ A presentation of the requirements, the data sources and how the data will be used follows. All assumptions in relation to the estimation and qualifications of data will be stated where they apply in the model itself.

Tourist expenditures/receipts form the basis of the model. Ideally, the tourist expenditures applicable to each group of businesses (transportation group, food and beverage group, etc.) should be examined separately as outlined in the Analytical Framework, Chapter II. However, data limitations inhibit singular analysis of all but the transportation and food and beverage categories of tourist expenditures. Zinder and Associates, in their Eastern Caribbean study, found that the important components of the transportation expenditure category (E_{T1}) are quite similar to those of the accommodation (E_{T3}) and sightseeing and entertainment (E_{T4}) categories of expenditures, and that the important components of the food and beverage (E_{T2})

¹The data requirements for the investment and government expenditures are discussed later in this chapter under the respective headings of Investment and Government Expenditures.

expenditures move through the economy in a manner similar to the expenditures relating to the preparation and purchase (E_{T5}) expenditures.¹ Based on these findings and the fact that Bryden, Faber, Levitt and Gulati, who have critically analyzed the Zinder study, accepted the findings, only the transportation and food and beverage income multipliers will be calculated. The income multipliers calculated for the transportation category of expenditures will be applied to the accommodation and sightseeing and entertainment categories of expenditures. The income multiplier calculated for the food and beverage category of expenditures will be applied to the preparation and purchase group of establishments. To avoid any overstating of the overall multiplier value for tourist spending, the lower of the two calculated multiplier values will be assigned to the miscellaneous expenditure category (E_{T6}). To determine whether or not this approach is reasonable and if there would be any significant change in the overall multiplier effect, sensitivity analysis is conducted. The tables presented investigate the sensitivity of the overall tourist expenditures income multiplier to changes in the dispersion of the operating expenses of the accommodation, sightseeing and entertainment, and the purchase expenditures

¹See: H. Zinder and Associates, Inc., The Future of Tourism in the Eastern Caribbean (Washington, D.C.: Agency for International Development, May, 1969), p. 45.

through the economy. The drawing of a definitive conclusion regarding the gravity of accepting the approach is afforded.

The most recent operating results for the applicable transportation and food and beverage groups of businesses will be applied.¹ Because the Statistics Canada publications present the operating results by volume of gross annual sales for all of Canada, only the average volume of gross annual sales for the applicable Newfoundland businesses had to be calculated. The operating results (as per the Statistics Canada publications) relevant to each average volume of gross annual sales relating to the transportation and food and beverage groups of businesses in Newfoundland were then applied. See Appendix C.

As outlined in the analytical framework, the operating results were grouped into one or more of the following

¹Sources of the Operating Results: Statistics Canada, Food Chain Stores Operating Results, Statistics Canada Publication No. 63-403 (Ottawa: Queen's Printer, 1966), p. 6; Statistics Canada, Automobile Dealers, Accessories, Tire and Battery Shops, Service Stations, Garages and Paint and Body Shops (Independent) Operating Results, Statistics Canada Publication No. 63-408 (Ottawa: Queen's Printer, 1965), pp. 11-12, 14-20; Statistics Canada, Food Stores (Independent, including stores organized in Voluntary Chains) Operating Results, Statistics Canada Publication No. 63-409 (Ottawa: Queen's Printer, 1966), pp. 7-8, 10-11, 14, 17, 19, 22; Statistics Canada, Automobile Dealers, Accessories, Tire and Battery Shops and Service Stations (Chain) Operating Results, Statistics Canada Publication No. 63-426 (Ottawa: Queen's Printer, 1965), pp. 7-8.

These Operating Results series contain ratios of gross profit (percentage of net sales), operating expense items and net profit, as well as averages of sales and inventories and information on turnover.

six expense categories:

- (i) wages and salaries (H_1),
- (ii) profit, rent and interest (H_2),
- (iii) municipal and provincial government taxes (H_3),
- (iv) depreciation (H_4),
- (v) purchases (H_5),
- (vi) imports (H_6).

Ultimately, this resulted in the dispersion of the tourists' initial expenditures on transportation and food and beverages through the Newfoundland economy. Table III-11 and Table III-12, pages 77 and 80, respectively, depict these dispersions. Appendix C constitutes the work sheets of the calculations.

The grouping of the operating results into one or more of the expense categories (H_1, H_2, \dots, H_6) necessitated the derivation of separate leakage coefficients (L_1, L_2, \dots, L_6) to be applicable to each of the expense categories.¹ As discussed in Chapter II, each leakage coefficient is composed of and affected by the following:

- (i) propensity to save ($1-c$),
- (ii) propensity to import (m_T),
- (iii) propensity to tax directly (t_{dT}) and indirectly (t_{iT}),

¹ Leakage coefficient L_1 applies to expense category H_1 , and leakage coefficient L_2 applies to expense category H_2 , and so on.

(iv) undistributed profits (p_T),

(v) transfer payments (u_T).¹

When each or all of these factors change, there is a corresponding change in the leakage coefficient. The change is in the same direction, but it need not be of the same magnitude. For instance, if social assistance is decreased by 20 per cent because of the increased employment generated by tourist spending, the value of u_T will decrease by 20 per cent; however, the overall leakage coefficients will not increase by 20 points, but by a somewhat lower percentage. This effect and similar effects can be seen by referring to the expression on page 49.

The most desirable approach to have employed in the calculation of the leakage coefficients would have been to determine each of the leakage factors ($1-c$, m_T , t_{dT} , t_{iT} , p_T , u_T). However, data constraints inhibit any such undertaking. To overcome this problem the total based input-output study for the Atlantic Provinces is applied.² The result is leakage coefficients (L_1 , L_2 , . . . , L_6)

¹In Chapter II, p_T was defined as the profit going to owners and operators not residing in the region under study. It is therefore synonymous with undistributed profit.

²Department of Regional Economic Expansion, Some Dimensions of the Tourist and Recreation Industry in the Atlantic Provinces in 1966, prepared for the (former) Atlantic Development Board, 1971.

applicable to each expense category (H_1, H_2, \dots, H_6).¹

The derivation of the leakage coefficients follows.

The leakage coefficients are based upon the tourist and recreation demand sectors for use with the 1961 based input-output tables for the Atlantic provinces. These sectors represent the spending patterns of seven groups of travellers and two kinds of expenditures for private facilities and services as follows:

- (i) summer auto visitors from the rest of Canada and the United States in these subgroups:
 - 1. low income, reporting under \$5,000,
 - 2. high income, reporting over \$10,000,
 - 3. visitors who stayed with friends or relatives,
 - 4. visitors who camped,
 - 5. visitors who stayed at their own cottage;
- (ii) travellers by all modes through the year including:
 - 1. all visitors from outside the province,
 - 2. all residents within their own province;
- (iii) expenditures by any recreational traveller on:
 - 1. lodging service,
 - 2. restaurant meals.²

¹Although it was not possible to singularly identify the leakage factors ($l-c$, m_T , t_{dT} , etc.) the relationship each has upon the overall leakage coefficient (L_1, L_2, \dots, L_6) can be observed in the expression on page 49.

²Department of Regional Economic Expansion, op. cit., pp. 48-50.

The input-output tables incorporating the above sectors were applied to estimate the various tax, import and income flows required to satisfy the final demand sector. Because only Nova Scotia's primary inputs required for private facilities and services by one dollar of tourist expenditure are presented, it is possible to derive only Nova Scotia's coefficients directly from the source document. However, the relationship between the resident income generated by one dollar of tourist expenditures by type of traveller and expenditure for Nova Scotia and that for Newfoundland is also provided. This relationship facilitates the derivation of Newfoundland coefficients directly from those of Nova Scotia.

Table III-1 shows how one dollar spent for all types of goods and services from the private sector was ultimately disbursed. The expenditures relate to those of the average visitor to Nova Scotia, and the disbursement is in terms of primary inputs common to all production of goods and services in that province.

If the proportion of provincial and municipal government revenue that becomes income to residents (wages and salaries, transfer payments, etc.) are included along with the share of profits, rent and interest, and the income resulting from the reinvestment of depreciation funds, total resident income resulting from the original dollar is

TABLE III-1

DISPERSION OF VISITOR DOLLAR IN DIRECT AND
INDIRECT PRIMARY INPUTS, NOVA SCOTIA

Income to	Amount	
Local Governments		
Municipal	2.46¢	
Provincial	<u>8.48¢</u>	10.94¢
Persons and Businesses		
Wages and Salaries	32.68¢	
Unincorporated		
businesses (net)	1.95¢	
Profit	15.26¢	
Rent and Interest	<u>3.44¢</u>	53.33¢
Depreciation		7.75¢
Total		72.02¢*

*There are, in addition, indirect federal taxes of \$0.0159, federal subsidies of \$0.0067, non-competitive imports of \$0.1568 and competitive imports of \$0.1138. These are all leakages out of Nova Scotia, and therefore have no subsequent impact.

Source: Department of Regional Economic Expansion, Some Dimensions of the Tourist and Recreation Industry in the Atlantic Provinces in 1966, prepared for the (former) Atlantic Development Board, 1971, Table 40, p. 52.

46 cents.¹ Table III-2 sets out the various recipients of the 46 cents.

TABLE III-2

INITIAL INCREASE IN LOCAL INCOME FROM THE ONE DOLLAR OF TOURIST EXPENDITURES, NOVA SCOTIA*

Recipient	Local Income	% of Initial Expenditure
Wages and Salaries	32.68¢	100%
Net Unincorporated Income	1.95¢	100%
Profit, Rent and Interest	4.68¢	25%
Municipal and Provincial Taxes	3.66¢	33%
Depreciation	3.31¢	43%
Total	46.28¢	

*The initial expenditure of \$1.00 resulted in 72¢ remaining in Nova Scotia, with 46¢ going to local income.

Source: Department of Regional Economic Expansion, Some Dimensions of the Tourist and Recreation Industry in the Atlantic Provinces in 1966, prepared for the (former) Atlantic Development Board, 1971, p. 57.

Table III-3 presents the Nova Scotia leakage and income-generation coefficients for the first round effects. The coefficients are directly inferred from Table III-2 with the exception of those applicable to the purchases' expense category. Its coefficients are based on the input-output tables which reveal that 22 cents of additional

¹Ibid., pp. 53-54.

resident income is generated from the 46 cents of expenditures on goods and services.

TABLE III-3

LEAKAGE AND INCOME-GENERATION COEFFICIENTS FOR
FIRST ROUND EFFECTS, NOVA SCOTIA

Expense Category	Leakage Coefficient	Income-generation Coefficient
Wages and Salaries	0%	100%
Profit, Rent and Interest	75%	25%
Municipal and Provincial		
Taxes	67%	33%
Depreciation	57%	43%
Purchases	52%	48%
Imports	100%	0%

Successive rounds of spending and income generation result from the initial tourist expenditure of one dollar. The leakage coefficient applicable to the rounds of transactions after the first round is based upon the results of the input-output analysis--that 22 cents of additional resident income is generated from the 46 cents of income re-spent. This results in a total increase of 68 cents in resident income. The subsequent rounds' leakage coefficient is therefore 52.2 per cent.

In order to arrive at the Newfoundland coefficients, the relationship between the resident income generated by

one dollar of tourist expenditures by type of traveller and expenditure for Nova Scotia and that for Newfoundland is necessary. Table III-4 facilitates the identification of this relationship.

TABLE III-4

RESIDENT INCOME BY ONE DOLLAR OF TOURIST EXPENDITURES
BY TYPE OF TRAVELLER AND EXPENDITURE,
NOVA SCOTIA AND NEWFOUNDLAND

Traveller and Expenditure Type	Local Income Generated in	
	Nova Scotia	Newfoundland
Summer auto visitors		
Low income	65¢	61¢
High income	70¢	64¢
Stayed with friends/relatives	63¢	59¢
Campers	57¢	54¢
Cottages	73¢	70¢
Total visitors	68¢	63¢
Residents	65¢	59¢
Type of expenditure		
Lodging services	78¢	69¢
Restaurant meals	92¢	82¢
Total	631¢	581¢

Source: Department of Regional Economic Expansion, Some Dimensions of the Tourist and Recreation Industry in the Atlantic Provinces in 1966, prepared for the (former) Atlantic Development Board, 1971, Table 41, p. 56.

The percentage relationship of local income generated in Newfoundland to local income generated in Nova Scotia for the seven groups of travellers and two types of expenditures applicable to the tourist industry is equal to:

$$581¢ : 631¢ = 92.076\%.$$

Using this percentage as the adjustment factor to apply to the Nova Scotia coefficients, the coefficients for Newfoundland are derived. Table III-5 presents these coefficients.

TABLE III-5

LEAKAGE AND INCOME-GENERATING COEFFICIENTS FOR
FIRST ROUND EFFECTS, NEWFOUNDLAND

Expense Category	Leakage Coefficient	Income-generation Coefficient
Wages and Salaries	0%	100%
Profit, Rent and Interest	77%	23%
Municipal and Provincial Taxes	70%	30%
Depreciation	60%	40%
Purchases	56%	44%
Imports	100%	0%

The leakage coefficient applicable to the rounds of transactions after the first round in Newfoundland is equal to $1 - (47.8\% \times .92076) = 55.99\%$, where 47.8% equals the Nova Scotia income-generation coefficient and 0.92076 equals the reduction factor as per Table III-4.

Model Applied

Inherent in the framework of the model are the following assumptions:

- (i) that the lag in consumer expenditures behind income payments, and the lag in the increase of income payments to the factors of production when output increases combine to be approximately two to three months in length. This results in the five to six rounds in the model, after which the circulation of the original expenditure has very little effect;
- (ii) that a rise in consumption expenditures is matched by a corresponding rise in the production of goods and services (no production lag);
- (iii) that the coefficients for the expenditure on goods and services by residents and non-resident tourists are the same;
- (iv) that there is free availability of unused resources. In other words, there exists unused resources which can be mobilized the moment new demand appears through tourist spending. This assumption implies that prices do not increase. (If the opposite were assumed and prices increased, tourist expenditures and the secondary and tertiary expenditures would lead to a transfer of resources from other sectors to the tourist sector. This need not generate additional real incomes and may have a

regressive impact on income distribution within the local economy. This point is difficult to quantify. For further discussion on this effect, see The Regional Multiplier - A Critique, Thomas Wilson).¹

The impact of tourism on Newfoundland's economy derives, in the first instance, from the volume of tourist spending. As stated earlier, studies have shown that these expenditures tend to be concentrated on certain well-defined sectors of the economy. The following breakdown applies to the province, see Table III-6.

TABLE III-6

DISTRIBUTION OF TOURIST EXPENDITURES
IN NEWFOUNDLAND, 1971

Tourist Expenditure Category	% of Total Expenditures
Transportation	30.5
Food and Beverages	20.2
Accommodation	11.4
Sightseeing and Entertainment	5.8
Preparation - Purchases	9.8
Miscellaneous	22.3
Total	100.0

Source: Canadian Government Office of Tourism, Department of Industry, Trade and Commerce, Canadian Travel Survey, 1971-Highlights (Ottawa: Queen's Printer, 1972), p. 32.

¹T. Wilson, "The Regional Multiplier - A Critique," Oxford Economic Papers, XX, 1968, p. 380.

With respect to tourist spending in Newfoundland in 1971:

- (i) tourist expenditures/receipts from Newfoundlanders and other Canadians totalled \$58,606,000;¹
- (ii) tourist expenditures/receipts from foreign visitors totalled \$31,200,000. No provincial breakdown was given in the source document regarding foreign visitors' spending.² However, it does state that the province received 2.4 per cent of trips 100 miles or more from the origin.³ Applying this percentage to the \$1.3 billion spent in Canada by foreigners results in an estimate of the proportion received by Newfoundland.

The total receipts from travel in the province in 1971 was \$89,806,000. Table III-7 shows the allocation of the total tourist expenditures.

With respect to transportation, the automobile is by far the dominant mode of travel. See Table III-8.

Because more than three-quarters of all trips were taken via automobiles, the automotive group of operating

¹Canadian Government Office of Tourism, Department of Industry, Trade and Commerce, Canadian Travel Survey, 1971-Highlights (Ottawa: Queen's Printer, 1972), p. 27.

²In this case, foreign visitors are synonymous with non-Canadian visitors.

³Canadian Government Office of Tourism, op. cit. p. 10.

TABLE III-7

ALLOCATION OF TOTAL TOURIST RECEIPTS IN
NEWFOUNDLAND, 1971

Tourist Expenditure Category	Amount
Transportation	\$27,390,830
Food and Beverages	18,140,812
Accommodation	10,237,884
Sightseeing and Entertainment	5,208,748
Preparation - Purchases	8,800,988
Miscellaneous	20,026,738
Total	\$89,806,000

TABLE III-8

TOTAL TRIPS BY MODE OF TRANSPORTATION
IN NEWFOUNDLAND, 1971

Mode	Percentage
Car	76.3
Plane	12.9
Train	1.7
Bus	6.4
Other	2.7
Total	100.0

Source: Canadian Government Office of Tourism,
Department of Industry, Trade and Commerce, Canadian Travel
Survey, 1971-Highlights (Ottawa: Queen's Printer, 1972),
p. 33.

results were aggregated and averaged to result in the typical expenditure breakdown for the transportation expenditures. The automotive related establishments that were applied follow:

- (i) accessory, tire and battery shops;
- (ii) service stations;
- (iii) service stations with restaurants;
- (iv) retail garages;
- (v) service garages.

See Table III-9 for the breakdown of the transportation expenditures. See Appendix C for the work sheets relating to Table III-9. Worthy of note is that the nineteen sets of operating results relating to the establishments above are representative of Newfoundland automotive related businesses because only those operating results relating to the annual volume of net sales applicable to the Newfoundland businesses were applied.

There are two sub-categories of the food and beverages expenditures:

- (i) meals and beverages in restaurants which account for 13.29 per cent of the total tourist spending; and
- (ii) food and beverages from stores which account for 6.91 per cent of total tourist spending.

The following establishments' operating results were aggregated and averaged to result in the food and beverage expenditures' breakdown:

TABLE III-9
TRANSPORTATION EXPENDITURES' BREAKDOWN
FOR NEWFOUNDLAND*

Operating Expense**	% of Total Operating Expenses
Cost of Goods Sold	71.53
Salaries and Wages	12.89
Occupancy Expenses	5.42
Office and Store Supplies	0.58
Advertising	0.68
Delivery Expense	0.23
Other Expenses	3.15
Net Operating Profit	5.26
Total	99.74

*See Appendix C for the work sheets.

**See Appendix A for definitions of the operating expenses.

- (i) grocery stores,
- (ii) combination stores,
- (iii) meat markets,
- (iv) confectionery stores,
- (v) fruit and vegetable stores,
- (vi) delicatessen stores.

See Table III-10 for the breakdown of the food and beverage expenditures. See Appendix C for the work sheets relating to Table III-10. The fourteen sets of operating results relating to the establishments above are representative of Newfoundland food and beverage related businesses because only those operating results relating to the annual volume of net sales applicable to the Newfoundland businesses were applied.

The following groups of establishments under the food and beverage group were excluded from the calculations: independent restaurants, bakery product stores, candy, nut and confectionery stores, fish markets and dairy products stores. The reason for the omission of the restaurant group is that the only data available are for the year 1956. There are no data regarding the operating results for the others.

Having identified the operating expenses, the next step is to group these operating expenses into one or more of the expense categories (H_1, H_2, \dots, H_6 as per the analytical framework). Table III-11 and Table III-12

TABLE III-10
FOOD AND BEVERAGE EXPENDITURES' BREAKDOWN
FOR NEWFOUNDLAND*

Operating Expense**	% of Total Operating Expenses
Cost of Goods Sold	81.59
Salaries and Wages	4.31
Occupancy Expenses	4.98
Office and Store Supplies	0.67
Advertising	0.45
Delivery Expenses	1.26
Other Expenses	1.50
Net Operating Profit	5.24
Total	100.0

*See Appendix C for the work sheets.

**See Appendix A for definitions of the operating expenses.

TABLE III-11
OPERATING EXPENSES RELATING TO \$305 OF EXPENDITURES
ON TRANSPORTATION IN NEWFOUNDLAND

Operating Expense	Wages and Salaries	Profit Rent and Interest	Municipal and Provincial Taxes	Depreciation	Purchases	Imports	Totals
Cost of Goods Sold			\$15.27		\$202.90		\$218.17
Salaries and Wages	\$39.31						39.31
Occupancy Expense	1.65	\$3.31	2.69	\$3.80	5.08		16.53
Office & Store Supplies			0.12		1.65		1.77
Advertising			0.14		1.94		2.08
Delivery Expenses	0.35		0.02		0.33		0.70
Other Expenses	6.73	1.44	0.10		1.34		9.61
Net Operating Profit		12.99	1.37			\$1.68	16.04
Total	\$48.04	\$17.74	\$19.71	\$3.80	\$213.24	\$1.68	\$304.21*

*The difference between \$305 and \$304.21 (79¢) is the result of "rounding-off."

Notes to Table III-11:

- (i) With respect to Cost of Goods Sold, it is assumed that all goods were purchased through wholesalers in the province. The provincial sales tax is equal to 7 per cent;
- (ii) according to the source publications, the Occupancy Expense is composed of the following:
- taxes, 14 per cent (provincial and municipal taxes),
 - insurance, 12 per cent (treated as a purchase),
 - rent, 20 per cent (profit, rent and interest),
 - heat, light, power, 21 per cent (treated as a purchase),
 - repairs and maintenance, 10 per cent (totally wages and salaries),
 - depreciation, 23 per cent (depreciation);¹
- (iii) with respect to Office and Store Supplies, it is assumed that all purchases were made through provincial wholesalers;
- (iv) the Advertising Expense is the cost for displays, window dressing and promotional efforts (for example, billboards). Because practically 100 per cent of these expenses is for purchases, note (i) will apply.

¹The allocation of the occupancy expense was based directly on its definition (see Appendix A) and its proportioning in the operating results of the source publications.

- (v) the Delivery Expense includes salaries paid to delivery men, licenses and insurance. This expense is divided equally between wages and salaries and purchases;¹
- (vi) Other Expenses include telephone, postage, legal and auditing fees, etc. It was proportioned as follows:
- rent, 15 per cent,
 - purchases, 15 per cent,
 - wages and salaries, 70 per cent;²
- (vii) the following breakdown for Net Operating Profit was calculated based on the operating results presented in the source publications:
- profits, 81 per cent,
 - local taxes, 8.5 per cent (provincial and municipal taxes),
 - federal taxes, 10.5 per cent (treated as an import because these taxes leave the province).

¹The allocation of the Delivery Expense was based on its proportioning in the operating results of the source publications.

²The allocation of Other Expenses was based on its proportioning in the operating results of the source publications.

TABLE III-12

OPERATING EXPENSES RELATING TO \$202 OF EXPENDITURES
ON FOOD AND BEVERAGES IN NEWFOUNDLAND

Operating Expenses	Wages and Salaries	Profit Rent and Interest	Municipal and Provincial Taxes	Depreciation	Purchases	Imports	Totals
Cost of Goods Sold			\$11.54		\$153.27		\$164.81
Salaries and Wages	\$8.71						8.71
Occupancy Expenses	1.21	\$2.92	0.99	\$2.31	\$2.63		10.06
Office & Store Supplies			0.09		1.26		1.35
Advertising			0.06		0.85		0.91
Delivery Expenses	1.28	1.27					2.55
Other Expenses	2.12	0.45	0.03		0.43		3.03
Net Operating Profit		8.57	0.90			\$1.11	10.58
Totals	\$13.32	\$13.21	\$13.61	\$2.31	\$158.44	\$1.11	\$202.00

Notes to Table III-12:

- (i) All the notes to Table III-11 apply to Table III-12 with the exception of note (ii);
- (ii) the following breakdown for the Occupancy Expense was calculated based on the operating results presented in the source publications:
 - taxes, 8 per cent (provincial and municipal taxes),
 - insurance, 5 per cent (treated as a purchase),
 - rent, 29 per cent (profit, rent, interest),
 - heat, light, power, 23 per cent (treated as a purchase),
 - repairs and maintenance, 12 per cent (totally wages and salaries),
 - depreciation, 23 per cent (depreciation);
- (iii) because the average annual volume of net sales for the Newfoundland businesses under both the transportation and food and beverage categories of expenditures are for the most part in the \$50,000-\$99,999 range, the proportioning of the Net Operating Profit item is the same for both groups of businesses.

present the re-grouping of the transportation expenditures and food and beverage expenditures, respectively. The notes immediately following the tables serve as guides to the items in the tables. For explanatory purposes, total tourist expenditures will be assumed to equal \$1,000. The amount applicable to transportation is 30.5 per cent or \$305. The amount applicable to food and beverages is 20.2 per cent or \$202.

As defined in Chapter II, the initial impact is equal to the sum of wages and salaries, profit, rent and interest, and depreciation. The initial impact of \$304.21 on transportation equals \$69.58 of local income. The initial impact of \$202 on food and beverages equals \$28.84 of local income.

The first round impact is derived by applying the income-generation coefficients of Table III-5, Leakage and Income-Generation Coefficients for First Round Effects, Newfoundland, to the totals of each expense category of Table III-11 and Table III-12. For \$304.21 of expenditures on transportation in Newfoundland, the first round impact equals \$153.38 of local income:

- wages and salaries	\$ 48.04 x 100% =	\$ 48.04
- profit, rent and interest	17.74 x 23% =	4.08
- municipal and provincial taxes	19.71 x 30% =	5.91
- depreciation	3.80 x 40% =	1.52
- purchases	213.24 x 44% =	93.83
- imports	1.68 x 0% =	0
	<u>\$304.21</u>	<u>\$153.38</u>

The first round impact of \$202 of expenditures on food and beverages equals \$91.07 of local income:

- wages and salaries	\$13.32 x 100%	=	\$13.32
- profit, rent and interest	13.21 x 23%	=	3.04
- municipal and provincial taxes	13.61 x 30%	=	4.08
- depreciation	2.31 x 40%	=	0.92
- purchases	158.44 x 44%	=	69.71
- imports	1.11 x 0%	=	0
	<u>\$202.00</u>		<u>\$91.07</u>

The subsequent rounds' impact of the \$304.21 spent on transportation and the \$202 spent on food and beverages equals \$271.14 and \$161.47 of local income, respectively. See Table III-13 and Table III-14. The basis of these calculations is presented in Chapter II.

The total impact of the tourist expenditures is equal to the sum of the initial impact, the first round impact and the subsequent rounds' impact. The local value added (income generated) of \$304.21 on transportation is equal to \$341.54:

- initial impact	- \$ 69.58
- first round and subsequent rounds' impact	- 271.96
	<u>\$341.54</u>

TABLE III-13

LOCAL INCOME GENERATED WITH A
FIRST ROUND IMPACT OF \$153.38

Round of Transactions	Income Generated
1st	\$153.38
2nd ($\$153.38 \times 44.01\%$)	67.50
3rd ($\$153.38 \times (44.01\%)^2$)	29.71
4th ($\$153.38 \times (44.01\%)^3$)	13.08
5th ($\$153.38 \times (44.01\%)^4$)	5.76
6th ($\$153.38 \times (44.01\%)^5$)	2.53
Total	\$271.96

TABLE III-14

LOCAL INCOME GENERATED WITH A
FIRST ROUND IMPACT OF \$91.07

Round of Transactions	Income Generated
1st	\$ 91.07
2nd ($\$91.07 \times 44.01\%$)	40.08
3rd ($\$91.07 \times (44.01\%)^2$)	17.64
4th ($\$91.07 \times (44.01\%)^3$)	7.76
5th ($\$91.07 \times (44.01\%)^4$)	3.42
6th ($\$91.07 \times (44.01\%)^5$)	1.50
Total	\$161.47

The local income generated as a result of \$202 of expenditures on food and beverages equals \$190.31:

- initial impact	\$ 28.84
- first round and subsequent rounds' impact	- 161.47
	<u>\$190.31</u>

The resulting income multipliers for transportation and food and beverage expenditures are 1.12 and 0.94, respectively:

$$\$341.54 \div \$304.21 = \underline{1.12}$$

$$\$190.31 \div \$202.00 = \underline{0.94}$$

As explained in the first section of this chapter, the transportation income multiplier will be applied to the expenditures on sightseeing and entertainment, and accommodation. The food and beverage income multiplier will be applied to the expenditures on purchases. The miscellaneous expenditure category will be assigned the lower multiplier value to avoid any overstating of the overall income multiplier applicable to tourist expenditures.

In the first section of this chapter it is stated that sensitivity analysis is conducted to determine the significance of accepting:

- (i) the transportation multiplier as being representative of the accommodation and sightseeing and entertainment multipliers; and
- (ii) the food and beverage multiplier as being representative of the purchases' multiplier.

Appendix D contains this analysis. The results are summarized below:

- (i) with respect to the accommodation expenditures, changes in its H_1 of ± 15 per cent resulted in changes in its income multiplier of -4.27 per cent and $+4.09$ per cent and changes in the overall income multiplier equal to ± 0.48 per cent;
- (ii) with respect to the purchases' expenditures, changes in its H_1 of ± 15 per cent resulted in changes in its income multiplier of ± 2.12 per cent and the resulting changes in the overall income multiplier equal ± 0.2 per cent.

The conclusion drawn was that the overall income multiplier is not sensitive to significant changes in the dispersion of the accommodation, sightseeing and entertainment, and purchase expenditures from the dispersion assumed in the text.

The total local income generated in Newfoundland as a result of the 1971 tourist expenditures is presented in Table III-15. To perceive this study's tourism multiplier in proper perspective, a comparison between it and other tourism multiplier values calculated in other studies, for various regions, is afforded in Table III-16.

TABLE III-15

IMPACT OF THE 1971 TOURIST EXPENDITURES
ON INCOME IN NEWFOUNDLAND

Type of Expenditure	Amount of Expenditure	Multiplier	Local Income Generated
Transportation	\$27,390.830	1.12	\$30,677,729
Food and Beverages	18,140,812	0.94	17,052,363
Accommodation	10,237,884	1.12	11,466,430
Sightseeing and Entertainment	5,208,748	1.12	5,833,798
Purchases	8,800,988	0.94	8,272,929
Miscellaneous	20,026,738	0.94	18,825.133
Total	\$89,806,000	1.026	\$92,128,382

TABLE III-16

TOURISM MULTIPLIER VALUES, VARIOUS REGIONS AND STUDIES

Researcher(s)	Region	Multiplier Value
B. Archer, C. Owen (University College of North Wales)	Angelesey, North Wales	1.25
Exeter University Team (United Kingdom)	Devon and Cornwall	1.29
G.C. Archibald (Oxford Economic Papers)	United Kingdom	1.2-1.7
J.L. Herivault (University of Prince Edward Island)	Prince Edward Island	1.22-1.34
Nova Scotia Department of Tourism	Nova Scotia	1.23
P. Chau (Canadian Government Office of Tourism)	Canada	1.6-2.0
Checchi and Company (for U.S.Department of Commerce)	Pacific and Far East	3.27
P. Craig (University of Hawaii)	Hawaii	0.9-1.3
Linden and Associates (for Agency for International Development)	Eastern Caribbean	2.3
J. Bryden, M. Faber (Journal of Social and Economic Studies)	Eastern Caribbean	0.88
K. Levitt, I. Gulati (Journal of Social and Economic Studies)	Eastern Caribbean	1.27*

TABLE III-16 (Continued)

Researcher(s)	Region	Multiplier Value
Nathan Associates Inc., Resource Planning Associates (for Appalachia Regional Commission)	Appalachia Countries	1.67-2.21**
D. Wells (Memorial University of Newfoundland)	Newfoundland	1.0-1.464***

*Liberal assumptions were applied.

**These are employment multipliers applicable to tourism.

***Although Wells' multiplier is not a tourism multiplier, it is included because it was calculated for the geographic region under study in this thesis. These multipliers depict the direct and indirect expansions in output associated with ten different industries.

Investment

To arrive at the total income effect of tourism, investment and government spending related to tourism must be considered in addition to tourist expenditures. This section deals with investment.

It is important to note that the level of investment demand depicted in the figures that follow is not unique to the year under study. Investment in the tourist plant is on-going and has shown steady increases over the years. Appendix B, Historical Tourism Statistics, portrays a picture of constantly increasing levels of tourists and tourist demands. In order for the ever-rising levels of demand to be maintained over time, it follows naturally that supply must also constantly increase to facilitate demand. Capital expenditures by provincial parks has increased 240 per cent from 1966-67 (\$262,500) to 1974-75 (\$629,300).¹ Building permits issued by the Tourist Services Division (formerly the Tourist Development Office) numbered thirteen in the fiscal year 1966-67 and thirty in the fiscal year 1974-75 (231 per cent increase).² Given the fact that tourist development in the province is only in the early stages of development combined with the fact that the Department of Tourism forecasts

¹ Statistics were provided by Provincial Parks Division, Department of Tourism, Government of Newfoundland.

² Statistics were provided by Tourist Services Division, Department of Tourism, Government of Newfoundland.

continued growth in the volume of its non-resident tourists and overall tourism activity, the level of investment demand in the tourist plant will not likely decline (except cyclically) for many years to come.

The components of investment are the capital and repair expenditures for:

- (i) primary industries and construction;
- (ii) manufacturing;
- (iii) utilities;
- (iv) trade, finance and commercial services;
- (v) housing; and
- (vi) institutional services and government departments.¹

The most conceptually sound approach to arrive at the local income generated from investment induced by tourist expenditures is one similar to that developed for tourist expenditures. More explicitly, the amount of investment related to tourism would be segmented into construction expenditures. Then the operating results of the construction companies in the province would be analyzed as were the operating results for the transportation and food and beverage groups of businesses in the previous section. The percentage of machinery and equipment bought by the construction companies from wholesalers and retailers in Newfoundland

¹Statistics Canada, Private and Public Investment in Canada, Statistics Canada Publication No. 61-205 (Ottawa: Queen's Printer, 1971), Table 13, p. 26.

and the percentage directly from (off-island) manufacturers would have to be identified. This is particularly important to assure the proper channelling of income through the economy and the proper leaking of income from the economy. The expenditures on machinery and equipment directly from off-island manufacturers would not have any impact on local income. The expenditures on machinery and equipment bought in Newfoundland would have impacts that vary in magnitude, depending on whether or not the selling outlet were retail or wholesale establishments. To identify the magnitude of the impact, the operating results of the retail and wholesale shops catering to the construction companies would have to be examined as were the construction companies' operating results. The deriving of the initial impact, first round impact and subsequent rounds' impact is thereby facilitated.

Although an approach is identified, extreme data limitations respecting operating results for the establishments under study inhibit its being employed. Also, some rather bland assumptions would have to be made respecting the amount of expenditures on machinery and equipment which are made directly to wholesalers, retailers and (off-island) manufacturers. As well, lack of data restricts the calculation of proper leakage coefficients applicable to the direct and indirect inputs related to the capital and repair expenditures in Newfoundland.

These limitations make it impractical to develop an analytical framework for the calculating of an income multiplier for tourism induced investment based upon this approach. This in turn dictates that an ad hoc approach be adopted in the estimation of the contribution to local income by tourism induced investment.

An explanation of the ad hoc approach adopted follows: firstly, the amount of the province's total capital and repair expenditures for 1971 which were tourism induced were derived. Secondly, a range for the income multiplier applicable to the tourism induced investment was qualified based upon the tourist expenditures income multiplier calculated in the previous section. Thirdly, the income multiplier range was applied to the tourism related investment resulting in an estimation of the level of local income generated by the capital and repair expenditures made on the tourist plant in Newfoundland in 1971.

With respect to step one, the proportion of the total capital and repair expenditures in Newfoundland (for 1971) that relates to tourism is calculated in the following manner:

$$(i) \quad \frac{R_T}{GPP} \times I = I_{RT}$$

$$(ii) \quad I_{RT} \times \frac{T_E}{R_T} = I_{TE}$$

where, R_T = volume of retail trade in Newfoundland, 1971,
 I = total capital and repair expenditures in
 Newfoundland, 1971,
 GPP = gross provincial product in Newfoundland, 1971,
 I_{RT} = investment related to retail trade,
 T_E = tourist expenditures in Newfoundland, 1971,
 I_{TE} = investment related to tourist expenditures.

The figures are:

R_T	=	\$	528,088,000
I	=	\$	701,400,000
GPP	=	\$	1,378,000,000
I_{RT}	=	\$	268,776,480
T_E	=	\$	89,806,000
I_{TE}	=	\$	45,718,879. ¹

To arrive at an estimate of the value of tourism induced investment and to avoid double counting, the amount of the initial tourist expenditures which go to depreciation expense must be excluded from I_{TE} . This figure is \$1,071,890.² As well, the amount of the initial tourist

¹The sources for the figures are: Ibid.; Statistics Canada, Retail Trade, Statistics Canada Publication No. 63-005 (Ottawa: Queen's Printer, 1972), Table 2A, p. 9; Canadian Government Office of Tourism, op. cit.; Central Statistical Services, Government of Newfoundland and Labrador, Supplement to the Historical Statistics of Newfoundland and Labrador, published under the authority of the President, Treasury Board, November, 1973, Table F-1.

²With respect to the transportation expenditures, \$3.80 out of \$304.21 went to depreciation (see Table

expenditures which went in provincial and municipal government taxes and which was subsequently spent in government capital account expenditures must also be deducted.

This figure is \$1,819,302.¹ The net I_{TE} now equals \$42,827,687.

III-13). This equals 1.249%. With respect to the food and beverage expenditures, \$2.31 out of \$202 went to depreciation (see Table III-14). This equals 1.143%. Applying the 1.249% to the transportation, accommodation and sightseeing and entertainment expenditures, and applying the 1.143% to the food and beverage, preparation and purchase and miscellaneous expenditures results in the estimation of the amount of the initial tourist expenditures which went to depreciation. This amount equals \$1,071,890.29.

¹Step 1

Gross current account expenditures, Newfoundland, 1971-72	- \$367,214,000 (69.38%)
Gross capital account expenditures, Newfoundland, 1971-72	- \$162,066,000 (30.62%)
	<u>\$529,280,000</u>

Source: Central Statistical Services, Government of Newfoundland and Labrador, Supplement to the Historical Statistics of Newfoundland and Labrador, published under the authority of the President, Treasury Board, November, 1973, Table G-2.

Step 2

Initial tourist expenditures on Transportation which went to taxes	- $\frac{\$ 19.71}{\$304.21}$ (6.48%)
Initial tourist expenditures on Food and Beverages which went to taxes	- $\frac{\$ 13.61}{\$202.00}$ (6.74%)

Source: Chapter III, Table II-11 and Table III-12.

With respect to step 2, the following factors must be considered in the estimation of the local income multiplier range:

- (i) that the tourist expenditure income multiplier was calculated to be 1.03 and tourist expenditures have fewer leakages from wages and salaries, profit, rent and interest, depreciation and purchases than do expenditures on construction activity and machinery and equipment;
- (ii) that higher leakages are chiefly a result of greater amounts of undistributed profit, a smaller proportion of total expenditures on wages and salaries and a greater proportion of total expenditures on goods which are imported.

Step 3

Total amount of initial tourist expenditures which went to taxes - \$5,941,546.84

E_{T1}	$(\$27,390,830 \times 6.48\%)$	- \$1,774,925.70
E_{T2}	$(\$18,140,812 \times 6.74\%)$	- \$1,222,690.70
E_{T3}	$(\$10,237,884 \times 6.48\%)$	- \$ 663,414.88
E_{T4}	$(\$ 5,208,748 \times 6.48\%)$	- \$ 337,526.87
E_{T5}	$(\$ 8,800,988 \times 6.74\%)$	- \$ 593,186.59
E_{T6}	$(\$20,026,738 \times 6.74\%)$	- \$1,349,802.10

Step 4

Total amount of initial tourist expenditures which went to taxes and subsequently spent in government:

- current account expenditures - $(\$5,941,547 \times 69.38\%)$ - \$4,122,245
- capital account expenditures - $(\$5,941,547 \times 30.62\%)$ - \$1,819,302.

After consideration of these points it becomes obvious that the multiplier applicable to the induced investment will be lower than the tourist expenditures' multiplier. The question now is, "How much lower?" Because it is impossible to quantify the exact induced investment multiplier, its value will be approximated. To avoid a significant overstatement or understatement, a probable range into which the multiplier value should fall is assumed. Given the higher leakage components related to the capital and repair expenditures, a range of from 0.85 to 0.55 appears reasonable. The range is in line with what the Atlantic Provinces Economic Council estimates to be the tourism related investment multiplier for Newfoundland.¹

With respect to step three, the local income generated from tourism induced investment in 1971 is within the following range:

(i) upper limit - $\$42,827,687 \times 0.85 = \$36,403,533$

(ii) lower limit - $\$42,827,687 \times 0.55 = \$23,555,227$.

The \$42.8 million of tourism induced investment generated between \$36.4 million and \$23.6 million of personal income in Newfoundland.

It is impossible to identify exactly where, within this range, the proper level of the local income generated

¹According to Mr. B. Benton, Economist, APEC, Research Centre, Fredericton, \$1.00 of tourism related investment results in 50¢ to 70¢ subsequently going into local income. The basis for APEC's calculations is Professor K. Levitt's input-output tables.

lies. Therefore, in the application of the figures in Chapter IV the value that is used is the average of the extremes of the range. The average is \$29,979,380.

Government Expenditures

The government expenditures applied in this section are current account expenditures as opposed to capital account expenditures. The capital and repair expenditures of institutional service and government departments were applied as part of the total capital and repair expenditures in the previous section. The means of financing the government expenditures is discussed later. It will first be assumed that these expenditures are financed by borrowing.

The approach adopted to estimate the income effect of tourism associated government expenditures follows: firstly, the amount of the province's total government expenditures on current accounts which were tourism induced is derived. Secondly, a range for the income multiplier applicable to the tourism associated government expenditures is qualified based upon the tourist expenditure income multiplier calculated in a previous section. Thirdly, the income multiplier range of step two is applied to the tourism induced government expenditure of step one.

With respect to step one, the proportion of the total government current account expenditures in Newfoundland, 1971, that relates to tourism is calculated in the following

manner.¹

$$(i) \quad \frac{R_T}{GPP} \times G = G_{RT}$$

$$(ii) \quad G_{RT} \times \frac{T_E}{R_T} = G_{TE}$$

where, R_T = volume of retail trade in Newfoundland, 1971;

G = total government current account expenditures
in Newfoundland, 1971;

GPP = gross provincial product in Newfoundland, 1971;

G_{RT} = government expenditures related to retail trade;

T_E = tourist expenditures in Newfoundland, 1971;

G_{TE} = government expenditures related to tourist
expenditures.

The figures are:

R_T = \$ 528,088,000

G = \$ 367,214,000

GPP = \$1,378,000,000

G_{RT} = \$ 140,716,400

T_E = \$ 89,806,000

G_{TE} = \$ 23,935,859.²

¹ It is acknowledged that this is a first approximation of tourism induced government expenditures, and that the functional relationship between R_T and G is not defined. In this light, the writer recognizes this approach as being a basis for further discussion.

² The sources for the figures are: Central Statistical Services, Government of Newfoundland and Labrador, Supplement to the Historical Statistics of Newfoundland and Labrador, published under the authority of the President, Treasury Board, November, 1973, Tables G-2 and F-1; Statistics Canada, Retail Trade, Statistics Canada Publication No. 63-005 (Ottawa: Queen's Printer, 1972), Table 2A, p. 9; Canadian Government Office of Tourism, op. cit.

To arrive at an estimate of tourism associated government expenditure and to avoid double counting, the amount of the initial tourist expenditures which went in provincial and municipal taxes, and which was subsequently spent in government current account expenditures must be deducted from G_{TE} . This figure is \$4,122,245.¹ The net G_{TE} now equals \$19,813,614.

With respect to step two, in qualifying the tourist expenditures' income multiplier of 1.03, the following factors must be properly weighed:

- (i) that a great deal more of the public expenditures are allocated to salaries and wages than are the tourist expenditures to salaries and wages. For example, the Tourist Development Office and the Provincial Parks Service spent 24.2 per cent and 57.4 per cent of their budgets, respectively, on wages and salaries.² Comparable figures for the transportation and food and beverage groups of businesses were 12.9 per cent and 4.3 per cent of their operating results, respectively;
- (ii) that wages and salaries have the greatest income generating coefficient.

It follows, then, that there is a major discrepancy in the disbursement through the economy of the tourist expenditures

¹See Footnote 1, page 95.

²The sources for the percentages are: Provincial Parks Division, Department of Tourism, Government of Newfoundland; Interview (by phone) with Mr. Porter, Atlantic Regional Office, Parks Canada, Government of Canada, Halifax, Nova Scotia, February 10, 1975.

and the tourism induced government expenditures. The question now becomes, "By how much will the increased proportion of the government expenditures spent on wages and salaries raise the income multiplier?" Because it is impossible to quantify the exact induced government expenditures' multiplier, its value will be approximated. As in the induced investment multiplier case, to avoid a significant overstatement or understatement, a probable range into which the tourism induced government expenditures' multiplier is most likely to fall is assumed. Given the higher income generating components of the public expenditures as presented above, a range of from 1.25 to 1.55 appears reasonable.¹

With respect to step three, the local income generated from tourism induced government expenditures in 1971 is within the following range:

$$(i) \text{ upper limit} - \$19,813,614 \times 1.55 = \$30,711,101$$

$$(ii) \text{ lower limit} - \$19,813,614 \times 1.25 = \$24,767,017.$$

The \$19.8 million of tourism induced government expenditures generated between \$30.7 million and \$24.8 million of personal income in Newfoundland. These values must be considered the extreme upper and lower values of the range if these expenditures are financed by borrowing.

Having established the upper range for the tourist related government expenditures, some likely values for the lower range should be given. The value of the multiplier

¹A supporting argument for the assumed value of this range is contained in Appendix E, Tourist Multiplier Related to Direct Government Expenditures.

depends a good deal on the source of financing the expenditures. The extreme alternative to the source discussed above would be financing through taxes. Since the government budgets for all of its expected expenditures, at least part of its expenditures relating to tourism must be financed out of general tax revenue. To the extent that it is not, the difference could be attributed to borrowing.

It would be foolhardy to attempt to earmark that part of the tax budget which could be imputed to tourist related expenditure since the government always have the option of substituting borrowing for taxes and vice versa. The lower limit of the multiplier then will be the value calculated when all tourist related expenditures are financed out of taxes. It may therefore be concluded, given that a considerable proportion of the government expenditures being considered here go primarily into wages and salaries, that it is unlikely that this lower limit value of the multiplier would be less than one.

In the light of the above considerations, the lower and upper values for this government related tourist multiplier could be 1 and 1.55, respectively. Given that it is impossible to identify exactly where, within this range, the proper level of the local income generated lies, the level that is considered most appropriate to use in the application of the figures in Chapter IV is the average of the extremes of the range. The average is \$25,262,358.

CHAPTER IV

ESTIMATES USING THE NEWFOUNDLAND TOURISM MULTIPLIER

Several questions have to be considered before an attempt is made to apply the tourism associated multiplier values derived in the previous chapter. They deal with the validity of the tourist expenditure multiplier value, its operationality (the preconditions necessary for the multiplier value to be operational) and the utility of income multipliers.

Validity of the Tourist Expenditure Multiplier

With respect to validity, the dominating question is how well does the multiplier value reflect reality. No precise answer can be given; however, a careful review of the analytical framework can help determine whether the gap between the theoretical generalizations and the observed facts is bridged. As expounded in Chapter II, a comprehensive search was made to obtain the most suitable technique to achieve the primary objective of this thesis--the calculation of the income effect of tourist expenditures in Newfoundland.

The use of Statistics Canada operating results allowed for sufficient detail to permit tracing the path of the expenditures through the respective industry structures.

The model developed allowed for the application of disaggregated leakage coefficients and the calculation of income multipliers for the various types of tourist expenditures. The actual data applied in the model is representative of Newfoundland data. The tourist spending figures were gathered from a survey undertaken by the Canadian Government Office of Tourism in 1971. The operating results were taken from Statistics Canada publications for the sales volumes which are representative of the Newfoundland businesses. The leakage coefficients were qualified for the province using comparable figures of the Newfoundland and Nova Scotia tourist sectors.

Operationality of the Tourist Expenditure Multiplier

With respect to operationality, two preconditions must be met in order for the derived income multiplier to gain utility:

- (i) that there be unemployment of resources sufficient so that the activation of direct employment will in turn take up some of the slack in the local economy in terms of indirect employment; and
- (ii) that the availability of the unemployed be related to the pay scales that dominate the activities in a tourist complex and the endogenous sector, largely consisting of relatively low paid service personnel.¹

¹R.R. Nathan Associates, Inc. and Resource Planning Associates, Recreation as an Industry (Washington: Appalachian Regional Commission, December, 1966), pp. 111-112.

An assumption of the model was that there exists unused resources which can be mobilized the moment new demand is created by the successive rounds of expenditures. This implies that there are unemployed employables available to satisfy increased demand, rather than the non-existence of slack implying price inflation in vain bidding for unavailable resources. This assumption is reasonable because the province has a history of high unemployment, chiefly of semi-skilled and unskilled workers.

With respect to the second precondition, it is reasonable to say that the extra demand created by tourist spending can be handled by an increase in personnel of the businesses affected.¹ The increase in staff will come out of the unemployment ranks. As stated above, these ranks are composed of persons with limited qualifications and work for low wages if they are to work at all. Because the tourist industry is distinctly seasonal--summer months--the required personnel can be partially offset by student help. Because the nature of this work is temporary or part-time, the workers are not unionized and low wages prevail.

An additional factor which spans both validity and operationality concerns the choice of geographic unit. In

¹There is an available supply of labour willing to undertake the relatively lower paid occupations in both the tourist and endogenous service sectors in the province.

this thesis, the province was chosen because data deficiencies exist on the sub-provincial level, thereby dictating the province as the analytical unit.

Utility of the Tourist Expenditure Multiplier

With respect to usefulness, this depends in the first instance upon its validity and operationality. Having established that the tourist expenditure multiplier value calculated is both valid and operational, it provides an effective means of estimating the secondary consequences of an increase in tourist expenditures. Given the regional multiplier and sufficient details of particular kinds of policies so that the first round effects can be calculated, then a built-in tool for determining the effects of policies is provided. The impact of pouring public money into the region can be forecast. If it is weak, public investment can be imagined as pouring through a sieve, the higher the multiplier the smaller the number of holes in the sieve.

Because the economic welfare of local people increases with increases in the value of the income multiplier, it would seem a sensible inference from multiplier theory that policy should be so designed as to result in a higher regional income multiplier. This may be accomplished by raising the marginal propensity to consume, and/or by lowering the region's propensity to import. All other things being equal, the promoting of labour intensive industries which results in a larger share of payments to labour

rather than to capital ownership results in a higher propensity to consume. More of the income thus generated is directed toward consumption expenditures rather than capital formation and undistributed profit. The size of the marginal propensity to import varies not only with the industrial composition of the region relative to the patterns of expenditures, but also with the size of the region's economy. All other things being equal, the marginal propensity to import will be smaller and the multiplier larger in an area big enough to sustain a reasonably diversified mixture of industries.

However, industries which are likely to have a larger multiplier effect should not be preferred on that criteria alone. Development policy in a region, as in an underdeveloped country, is as much concerned with changes in products and in production functions as with effective demand.¹ Although a high tourist multiplier value might dictate, at first sight, sufficient reason for investing in tourism, tourism need not be the best investment for a particular economy at a particular time. Other parameters must also be considered when determining the economic policy that will maximize human welfare. To determine the combination of the factors of production which will result in the greatest possible benefit for a given cost, each program and project must be examined in detail before it is judged

¹Thomas Wilson, "The Regional Multiplier - A Critique," Oxford Economic Papers, Vol. 20, 1968, p. 392.

against its alternatives. Although the size of the multiplier is an important consideration, the following factors must as well be given appropriate consideration:

- (i) economies of scale;
- (ii) price trends;
- (iii) interest levels;
- (iv) generation of employment;
- (v) balance of payment effects;
- (vi) environmental impact (physical and social);
- (vii) the amount of potential new industries that may be attracted by the establishment of some industry that supplies their input;
- (viii) changes in the multiplier over time and whether the change is positive or negative;
- (ix) the limit to the degree an industry can expand; and
- (x) the degree of interdependence an industry has within the economy (an industry with a small multiplier may be a strategic link and by developing the smaller multiplier overall development of the economy may proceed faster).

Only then, can industries, programs and projects be ranked against each other. And only then, can it be said that investment in and the development of a given sector of the economy will be the most desirable alternative.

The author recognizes these points and notes that multipliers are only one set of tools to be used in

evaluating economic, social and environment growth, and development of an economy.¹ Also, these restrictions on the multiplier do not mean it can not be used for development planning. It merely implies that more information is needed before they can be applied. Together with additional information as per the previous paragraph, they can be used to rationally plan economic development.

A direct benefit from the regional income multiplier is its provision of an accurate estimate of secondary increases in expenditure as a guide for short-run stabilization policy. The feedback effects are far from insignificant and should not be ignored. These secondary effects can take various forms with consequences that may conceivably be more important than the primary effect of the monetary expenditure. Close attention will be given to these secondary effects to determine the overall significance of tourist spending in Newfoundland.

Provincial Income

The income generated by the tourist expenditures of residents, national and international tourists in Newfoundland in 1971 is depicted in Table IV-1.² The spending of

¹ A systematic approach to evaluating and selecting resource development programs and projects is afforded by: W. Sewell, J. David, A. Scott, D. Ross, Guide to Benefit Cost Analysis (Ottawa: Queen's Printer, 1965).

² Worthy of note is that tourist spending in 1971 results in the generation of income in the subsequent

TABLE IV-1

INCOME GENERATED THROUGH TOURIST SPENDING
IN NEWFOUNDLAND BY TOURIST GROUP, 1971

Group	Spending	Local Income Generated
Residents and National Tourists	\$58,606,000	\$60,121,551
International Tourists	31,200,000	32,006,831
Total	\$89,806,000	\$92,128,382

national and international tourists represents new money injected into the economy. These receipts have effects similar to those of money generated by exports. The spending of the province's residents while travelling represents a spreading of the provincial income. With the spending by non-residents and the dispersion of provincial income by resident tourists throughout the rural areas, tourism helps to achieve some degree of economic equality. This equalizing takes the form of cutting down the differences in wealth and production between the rural and urban economies. The greater the distribution of tourist expenditures, the greater is the real impact. If only a few operators receive increased returns from the tourist trade, there is a lesser impact on the local economy than if many people share in it.¹ With many operators active in the industry all the profits are not accrued by only a few. Subsequently, there will be fewer leakages through savings and the purchase of items which would have to be imported (i.e. personal luxury items).

In 1971, the expenditures of tourists generated \$92.13 million of personal income. This represents 8.07 per cent of the total provincial personal income in 1971. The

months, and the rippling effect of these spendings will disappear approximately twelve to eighteen months after the initial spending. However, for explanation purposes the discussion of the multiplier effects which follow is in relatively static terms. For further discussion of this, refer to Chapter II, Multiplier Theory.

¹ University of Missouri, Contribution of Tourist Trade to Incomes of People in Missouri Ozarks (Columbia, Missouri: March 7, 1962), p. 17.

expenditures made by residents while travelling outside the province totalled \$6.25 million in 1971.¹ If these expenditures had been spent on travel within the province, an additional \$6.41 million of local income would have been generated. Subtracting the \$6.41 million from the \$92.13 million, an obvious conclusion becomes evident: that tourism is definitely a plus factor on the provincial balance of payments.

When the amount of local income that was generated by investment and government expenditures in tourism is considered, tourism's impact on the economy is amplified. The local income generated by expenditures on capital and repairs in the tourist plant and by governments in the administering and promotion of tourism was estimated in Chapter III as being \$29,979,380 and \$25,262,358, respectively. The total local income generated by direct, indirect and induced tourist related expenditures was \$147.37 million. The resulting multiplier was 0.97. The \$147.37 million of personal income represents 12.90 per cent of the total personal income in Newfoundland in 1971.

In conclusion, it is important to note that the tourists themselves did not spend \$147.37 million in 1971; rather, the money that the tourists did spend supported a

¹Canadian Government Office of Tourism, Department of Industry, Trade and Commerce, Canadian Travel Survey, 1971-Highlights (Ottawa: Queen's Printer, 1972), p. 9.

range of different kinds of activities that produced the impact on the economy represented by the \$147.37 million of income generated.

Another factor to be considered when calculating the level of the provincial income that is supported by tourism is federal equalization payments. The federal-provincial equalization formula was designed to provide fiscal support for those provinces which have a restricted economic base. As the provincial economies are able to expand, the degree of fiscal support would diminish. Tourist expenditures increase economic activity and the amount of taxation revenue going to the provincial treasury. As a result of the higher levels of taxation revenue, equalization payments to the province decrease, other things remaining equal. Further explanation of the relationship between tourist activity and equalization revenue is afforded in the latter section of this chapter, Taxation Revenue.

Employment and Wages

Tourism offers a means of livelihood for proprietors and managers and it creates jobs for employees. The number of proprietors engaged in the tourist industry is inversely related to the size and scale of the establishments.

The manager-proprietor occupations constitute the hard core and main source of family earnings in the tourist industry. Tourism is seasonal and fluctuating tourist activity poses serious problems for owners-operators whose

entire life savings are invested in the business.

The six months between October and May are ones of relatively low or total inactivity.¹ These conditions are serious barriers to new investment in the tourist industry. Only in those establishments located along the major routes of trade and commerce are the operations at full-scale the year round. In Newfoundland this means only those establishments which serve travellers in transit the year round provide opportunities for permanent employment of service personnel. All other establishments are forced to close or operate with skeleton staffs during the off-season. When demand is increased with the advent of the tourist season, activity is increased and additional staff is hired once again.² In the final analysis, the tourist industry supports few jobs which provide primary family income. Most of the jobs represent, in varying degrees, supplementary incomes. It is not surprising, then, that the overwhelming number of these jobs are filled by women and in peak periods by students.

¹Based on the tables in Appendix B, in 1971, 84.6 per cent of the total (inward) passengers entering Newfoundland via Canadian National Ferry Service entered during May to October.

²In areas of low unemployment it may be desirable to keep all staff hired even during slack period to avoid annual recruitment problems.

The measurement of impact does not end with the number of jobs created. It is the wage level, as well as duration of employment which determines the income going to local spending. Compared to wages in manufacturing and other organized sectors of the economy, the wages in the service industries are low. Most of the occupations require simple skills and little training. Because of this, and because the province experiences high unemployment, the operators can find sufficient employees who accept remuneration at the minimum wage level.

The number of jobs supported by tourist expenditures converted to a man-year basis is calculated below. Firstly, the average wage level in Newfoundland in 1971 is calculated. The application of the average wage for the total labour force is appropriate because the jobs supported by tourism do not refer only to those in tourist establishments. Because tourist expenditures support a range of different activities, all sectors of the economy are affected. The average wage of the labour force in the economy is most appropriate.

Secondly, the local income generated by the spending of tourists in Newfoundland is multiplied by the ratio of wages, salaries and supplementary labour income to total personal income.

Thirdly, the portion of the local income generated by tourist spending that is wages and salaries is divided

by the average wage level. This results in the calculation of the number of man-year jobs that is supported by the expenditures of tourists. The figures follow:

(i) wages, salaries, supplementary labour income, 1971	- \$747,000,000.00
(ii) average number of persons employed, 1971	- 139,000
(iii) average annual wage, 1971	- \$5,374.10
(iv) local income generated by the actual spending of tourists, 1971	- \$92,128,382.00
(v) personal income, 1971	- \$1,142,000,000.00
(vi) proportion of personal income that is wages, salaries, supplementary labour income, 1971	- 65.41%
(vii) $\$92,128,382.00 \times (65.41\%)$	- \$60,261,174.00
(viii) $(\$60,261,174.00) \div (\$5,374.10)$	- 11,213.3 ¹

The term, man-year job, implies that the job is full-time. However, because employment in tourist establishments (hotels, motels, tuna boats, etc.) is seasonal, the figure

¹Central Statistical Services, Government of Newfoundland and Labrador, Supplement to the Historical Statistics of Newfoundland and Labrador, published under the authority of the President, Treasury Board, November, 1972, Table F-3.

Unless otherwise noted all data on the provincial economy are taken from this source document.

depicted by man-year jobs is an understatement since the majority of persons employed are casual, part-time or temporary. Still, the term, man-year jobs, does provide a most comprehensible means of expressing the relationship between tourism expenditures and employment.

The 11,213.3 man-year jobs represents 7.48 per cent of the total 1971 labour force in the province and 8.07 per cent of the average number of persons employed in 1971.¹ When tourist associated capital, repair expenditures and government expenditures are considered in addition to the spending of tourists, the whole realm of direct, indirect and induced tourism expenditures is found to support 17,936.9 man-year jobs.² This represents 11.97 per cent of the total provincial labour force in 1971, and 12.90 per cent of the average number of persons employed in 1971.

These percentages may seem impressive at first sight; however, the two factors of seasonality and adequate family income associated with employment in the tourist establishments must be considered to place the number of jobs supported by tourism, and tourism related spending in proper perspective.

¹The total labour force in Newfoundland in 1971 was 150,000 persons. The average number employed in 1971 was 139,000.

² $(\$147,370,040 \times 65.41\%) \div (\$5,374.10) = 17,936.9$; refer to page 112 for the derivation of \$147,370,040.

Taxation Revenue

Just as it is possible to measure the economic importance of tourism by the business generated from the money that tourists spend, it is also possible to measure tax revenues from tourism. Without the spending by tourists, the business that depends on tourism would not be generated; hence, there would be a proportionately lower level of tax revenues.

In order to examine the effect of revenue from taxes accruing to the provincial government because of the spending of tourists, the following formula will be applied:¹

$$TR = E_T \times k_T \times t$$

where, TR = taxation revenue from tourist expenditures,

E_T = tourist expenditures,

k_T = income multiplier applicable to tourist expenditures,

t = propensity to tax out of personal income.

The propensity to tax out of personal income is calculated by dividing the provincial government's total personal income less government transfer payments. All the components of the province's taxation revenue are included because all sectors of the economy are affected by tourist

¹The concept of this formula was derived from the following study: Checchi and Company, The Future of Tourism in the Pacific and Far East (Washington, D.C.: United States Department of Commerce, 1961), p. 28.

expenditures as they channel through the economy. Government transfer payments are deducted from the total personal income because by their very nature they are excluded from the local income generated figures. This approach depicts aggregated taxes and is not intended to identify and examine the different tax structures.

The total provincial taxation revenue for the 1971/72 fiscal year is \$117,358,000.¹ Total provincial personal income, less government transfer payments, is \$876,000,000. The calculation of taxation revenue resulting from tourist expenditures in Newfoundland in 1971 follows:

$$TR = (E_T \times k_T) \times t$$

$$TR = (\$92,128,382) \times 13.39\%$$

$$TR = \$12,335,990.$$

Tourist spending generated approximately 10.51 per cent of the total provincial treasury taxes in 1971. When tourism associated capital, repair expenditures and government expenditures are considered in addition to the spending of tourists, the resulting taxation revenue attributable to tourism becomes \$19,732,848 or 16.81 per cent of the total provincial treasury taxes in 1971.²

¹Fiscal Policy Division, op. cit., Table G-1.

²Taxation revenue attributed to the direct and indirect tourist expenditures, and tourism associated capital and repair and government expenditures in Newfoundland equals $(\$147,370,040 \times 13.39\%) = \$19,732,848.$

In addition to the taxes which accrue to the provincial government, real estate taxes and property taxes from tourist establishments and business serving these establishments accrue to municipal governments. These taxes strengthen the economic base of the communities and are extremely important because, in most municipalities, there is a low value assessed on residential properties, thereby leaving insufficient income for the improvement of public facilities.

The main public costs directly attributable to commercial recreation enterprises are for road improvement, garbage collection and disposal, and the maintenance of municipal public parks and buildings to create an attractive environment. Because an attempt to place a monetary value on this tax (municipal taxes) would be extremely difficult, no rate of return can be calculated. However, municipal revenues collected from the tourist plant are significant when compared with the necessary extra public service expenditures to compensate for the increase in demand created by tourist spending.

Although additional tourist activity would result in additional taxation revenue to the provincial and municipal governments (federal government taxation revenue is treated as are imports), it is true that equalization payments from Ottawa to the province would be decreased, as indicated on page 113. The decrease in the province's "fiscal capacity

deficiency" results in less equalization revenues coming back to the province.¹

The amount of the decrease in equalization revenues would be of a lesser magnitude than the increase in revenue to the provincial treasury associated with the increased economic activity. The exact relationship between tourist activity in the province and equalization revenues received from Ottawa is extremely difficult to quantify, if not impossible, at this period in time. Complete data regarding the revenues and basis of all the components of the equalization formula that are attributable to tourist activity are an absolute requirement, and these data are not available.

Although the net effect of the induced taxation revenues would be diminished somewhat if allowance was made for the decrease in equalization payments, an important overruling factor must be considered which would discourage application of the opportunity costs associated with the cost of equalization payments. As stated previously in this chapter, the equalization formula was designed to provide fiscal support for those provinces which have a restricted economic base and as the provincial economies are able to expand, the degree of fiscal support will diminish. Despite

¹ Fiscal capacity deficiency is defined as the province's share of the population of Canada minus the province's share of the tax base of Canada. The greater the deficiency, the greater is the amount of equalization revenues to the province.

the potential loss in revenues, all equalization receiving provinces are supposed to pursue an active policy of promoting economic growth and development.

CHAPTER V

SUMMARY AND CONCLUSIONS

This study has revealed the major criteria which determine the impact of tourist spending on the local income of the province. The factors determining the magnitude of the impact are:

- (i) the volume of visitors;
- (ii) the amount of their expenditures;
- (iii) the propensity to import goods and services;
- (iv) the type of goods and services purchased by tourists;
- (v) the propensity to consume of residents and non-resident tourists;
- (vi) the propensity to tax both directly and indirectly; and
- (vii) the fractional decline of income paid as transfer payments.

The local value added approach employed in this thesis facilitates the revealing of the underlying framework of the economy and the provision of insight into the flow of tourist expenditures through the economy. By knowing what variables inhibit the effects of tourist spending and how much effect each variable has on the basic

expenditures categories, policy-makers can forecast the results of changes whether he has control over them or not. If it is shown that models relating to tourism impact are useful for policy and planning purposes, then more than the primary objective of the thesis has been achieved.

Summary of Findings

The income multiplier applicable to the \$89,806,000 of tourist spending in the province in 1971 was determined to be approximately 1.026. The tourism associated capital and repair expenditures in 1971 approximated \$42,827,687. The estimated level of local income generated by these capital and repair expenditures was \$29,979,380. The resulting multiplier was 0.70. The tourism associated government expenditures in 1971 approximated \$19,813,614. The applicable level of local income generated by these government expenditures and the resulting multiplier were \$25,262,358 and 1.28, respectively. The overall income multiplier applicable to the initial tourist spending and the direct and induced tourism spending was 0.97. This means that for each dollar spent by tourists, a total of 97 cents of income is subsequently generated in the province. The \$89,806,000 spent by tourists in 1971 supported a range of different kinds of activities that, over the subsequent twelve to eighteen months, generated \$92,128,382 of income to the provincial economy. This represents 8.07 per cent of the total provincial personal income in 1971. The local income

generated by the direct, indirect and induced tourism spending was \$147,370,040. This represents 12.90 per cent of the total personal income in Newfoundland in 1971.

The number of man-year jobs directly and indirectly supported by tourist spending in 1971 was estimated to be 11,213.3. This represents 7.48 per cent of the total 1971 labour force, and 8.07 per cent of the average number of persons employed. When tourism associated capital and repair expenditures and government expenditures are considered in addition to the spending of tourists, the number of man-years of employment supported by tourism was found to be 17,936.9. This represents 11.97 per cent of the total 1971 labour force and 12.90 per cent of the average number of persons employed in 1971. Proper perspective is gained if it is realized that the jobs supported by the tourist industry are adversely affected by the seasonality of the tourism industry and the typically low wages paid the employees.

The taxation revenue accruing to the provincial treasury over the 'period of impact' as a result of the direct and indirect effects of tourist expenditures was approximately \$12,335,990. This represents 10.51 per cent of the province's total taxation revenue in 1971. When tourism associated capital and repair expenditures and government expenditures are considered in addition to the initial tourist expenditures, the taxation which accrued to the provincial treasury

was found to be \$19,732,848. This represents 16.81 per cent of the total provincial taxation revenue in 1971. In addition to the calculated taxation revenue, a significant contribution is made to municipalities through property taxes collected from tourists and tourist related establishments/businesses.

Other Aspects

Having regard to the implication in the social, economic and regional field of tourist development and the complex interaction of the affected sectors a successful national policy depends on the existence of a political organization competent . . . to constantly evaluate sectoral development against criteria of social, political, economic and regional interests.¹

Thus far there has been no attempt to theoretically examine the sociological, cultural and ecological impacts of tourism. The scope of this study has determined its content—namely, the economics of tourism, and more specifically, the significance of tourist expenditure on income. However, the author does realize that before an industrial strategy for tourism can be implemented all facets of the industry must be viewed. Only then can acceptable conclusions be drawn regarding the issue of whether tourism is a benefit or burden.

For many observers the benefits, both economic and social, conferred by tourism are so obvious as to be hardly worthy of deeper examination. At the other extreme are those who doubt whether tourism confers

¹International Union of Official Travel Organization, Tourist Planning (Geneva, Switzerland), p. 29.

any economic benefits at all, and who are convinced that it is socially very damaging.¹

There is evidence to support both views. For instance, Spain's economy has its main stimulus from tourism. Tourism has seemingly aided her farmers to move relatively painlessly from near-subsistence living to a level of relatively high material prosperity in less than two decades. Then there is the Caribbean where social tensions have been exacerbated because of tourism and where the economic impact of tourist spending has little effect because of the extremely high leakage coefficients. The true value of tourism surely lies somewhere between this polarization.

In Newfoundland where there exists a somewhat depressed economy relative to the Canadian scene and where high unemployment is combined with a shortage of skilled labour, tourism takes on the dimensions of a necessary growth industry. With respect to income and employment by tourism:

Visitor expenditure generates wage and other factor income, and because tourism sector is composed of several branches, the immediate impact of this expenditure is usually more widespread than is that of exports of many other goods and services.²

¹International Union of Official Travel Organizations, "The Role of Tourism in Economic Development," Travel Research Journal (1973), p. 53.

²United Nations Conference on Trade and Development: Committee on Invisibles and Financing Related to Trade, 1971 as printed in Travel Research Journal (1973), p. 61.

However, the one problem intrinsic to tourism, seasonality, is particularly significant to Newfoundland. In order to obtain the stimulus from tourism experienced by other economies, special attention must be focussed on the seasonality factor in an effort to eradicate the slow-down experienced in the off-season.

With respect to tourism and the physical environment, the collective facilities which serve the industry are relatively low in the scale of pollutants. Of all the current economic activities, tourism with its environmental orientation seems least likely to develop outside the context of a satisfactory policy for the environment. A strategy of tourism is to preserve the physical environment and enhance its beauty. Such measures insure a long-term future for tourism.

With respect to tourism and the social environment, it is very difficult to measure the benefit of the introduction of new skills, ideas, or living standards against the loss of traditional ways of life and mores. Historical change involves a mixture of gains and losses, the relative weights of which will always remain a subject for individual disagreement. There is also the question as to the relative weights of the 'blame' for the social and cultural change between tourism and the other catalysts. Then again, are these changes so undesirable? However, tourism has a vested interest in the preservation of the cultural environment.

For every abrasive encounter and every minute dilution of character due to tourism, many more instances can be claimed where it has made possible a new understanding between peoples.

Conclusion

Although social judgements about the magnitude, location, ownership, or quality of recreation facilities or development is not provided in this thesis, policy-makers should be concerned over these judgements. No attempt is made in this thesis to place monetary value on recreational experiences by the tourists. Nor is there any attempt to evaluate recreational enterprises against other kinds of economic activity in response to specific development goals or problems. Finally, this paper is not a substitute for actual feasibility investigations where access, markets and alternative supply (which are basic to investment strategies) are variables.

However, this study should enhance the deliberations of tourism policy-makers in evaluating courses of action when development is an explicitly stated public goal. The thesis' literature search and critics on past economic analysis of tourism provides an adequate source reference for planners wishing to learn about the intra- and inter-linkages, and the complexity of the tourist industry.

The task of developing an industrial strategy for tourism is arduous. To provide planners and policy-makers

with some insight as to the factors that must be considered in developing a strategy, the content of this document is interpreted into a more meaningful language.

An industrial strategy for tourism should be concerned with the marshalling of the productive resources of the province, material and human, towards the achievement of its provincial goals. Its aim should be the creation of wealth, the efficient production of the kinds of goods and services required to meet the growing economic and social needs of the Newfoundland people and with the creation of jobs in sufficient numbers and kinds to meet the growth of the labour force. The following factors are preponderate in any strategy:

- (i) the provision of adequate employment and vacation opportunities for the expanding labour force of Newfoundland;
- (ii) the reasonable distribution of income and that all elements of the Newfoundland society share in the increasing affluence of the Canadian economy;
- (iii) the directing of the management and utilization of the province's resources towards meeting the provincial objectives and requirements; and
- (iv) the efficient use of Newfoundland's resources to insure maximum advantages to the Newfoundland society.

Other more specific guidelines/considerations are as follows:

- (i) tourism has many aspects--sociological, cultural, psychological, geographic and technical. However, main interest centers on the contribution tourism can make towards the economic well being and growth of communities;
- (ii) where research on the inter-relations of tourism with the other resource based industries has preceded planning, tourism is often determined as preferably a form of economic impetus as are the competing users of investment funds;
- (iii) almost automatically the place and relative importance of tourism is assessed with reference to non-domestic tourists (balance of payments effect). This is important; however, it is wrong to ignore the fact that tourism is a domestic phenomenon with wide repercussions;
- (iv) the satisfaction of tourists' needs consists overwhelmingly of services. Industries providing tangible goods are often referred to as the only productive industries; while service industries are branded as parasitic. But affluence is directing consumption towards another aspect of tertiary service, labour saving functions, such as cultural activities and tourism;

- (v) tourism is geared to goods production industries in an indirect way. Although the demand for any destination can be considerably affected by the economic conditions in target markets, the usual pattern of demand for service industries does not apply in tourism;
- (vi) the collective facilities which serve tourism are relatively low in the scale of pollutants. Tourism would enable Newfoundland to retain its relatively unspoiled state. However, the blight of tourism can be serious if not controlled;
- (vii) uncontrolled tourism has shown to cause disruption of the economic and social equilibrium of some economies. The Newfoundland properties of the tourist industry are sound and experience has shown that it is a lack of planning, not the inherent nature of the industry/activity, that has caused disruption of economic and social equilibrium;
- (viii) hordes of non-residents during the peak season may be frowned upon and it may seem that their activities are inhibiting resident activity; however, such pressure on the social infra-structure is offset by an almost parallel exodus of residents to destinations off the island;
- (ix) tourism is a means to insure a reasonable distribution of income to all regions of the

province. It is important that all the regions share in the increasing affluence of the American and Canadian economies;

- (x) tourism's position in domestic and world trade is changing rapidly, and eventually the movement of people will be seriously considered as a means of accomplishing what the movement of goods has not been able to complete, the levelling of wealth;
- (xi) as national income rises, tourist expenditures tend to rise at a steeper rate;
- (xii) a major weakness of the Newfoundland economy is shown by the high unemployment rate and tourism is a labour intensive industry;
- (xiii) as Newfoundland matures industrially, technological advances in industry may produce a situation in which tourism could become vital in combating rising unemployment due to changes in secondary production processes;
- (xiv) tourism is an impetus to social change--directly through education and training to meet the needs of a service industry, and indirectly through the cross-fertilization of cultures;
- (xv) like other investment options, tourism is not necessarily the panacea for all problems, but must be assessed in terms of the new benefits it can provide in a given set of circumstances, and

evaluated against the potential returns from
other forms of investment.

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APPENDIX A

DEFINITIONS

APPENDIX A

DEFINITIONS

Province: Refers to the Province of Newfoundland and Labrador unless stated otherwise.

Resident: Any person whose place of residence is in the province. The term "place of residence" refers to the geographical location where a person earns or is supplied with his livelihood.

Visitor: Any person who enters the province for any purpose and whose place of residence lies outside the province. The Federal-Provincial Conference on Tourism accepts that all travellers are tourists with the exception of: migrants, students, commuters, temporary workers and in-transit travellers.

National Tourist: Any person who enters the province, excluding the exceptions noted above, whose place of residence is within one of the other nine Canadian provinces or two territories.

International Tourist: Any person who enters the province, excluding the exceptions noted above, whose place of residence is outside Canada.

Tourist Plant: The infrastructure of the tourist industry referring to highways, accommodation facilities, recreational facilities and the planning and promotional organizations.

Tourist Expenditures: The amount of money spent by resident tourists and national and international tourists.

Cost of Goods Sold: Determined by adding the beginning inventory to net purchases and deducting the ending inventory.

Operating Expenses: All costs incurred in the year's operation of a business, except the cost of merchandise.

Salaries and Wages: Payments to employees before deduction of income tax or unemployment insurance, etc. Included are salaries paid to executives of incorporated firms. Proprietors' salaries or withdrawals are included in net operating profit for unincorporated store operations.

Occupancy Expense: The cost of maintaining and occupying a place of business and includes property taxes, insurance, heat, light and power, repairs and maintenance, depreciation, mortgage interest on owned real estate and rental expense on rented premises.

Insurance: Premiums for insurance policies carried to protect the business, covering furniture and fixtures and inventories, but excluding real estate insurance and insurance on delivery equipment.

Repairs and Maintenance: Costs incurred to keep fixtures and equipment operating efficiently. (Excludes capital expenditure and delivery).

Depreciation: Allowances on fixtures and equipment (except delivery).

Supplies: Wrapping paper, twine, store and office supplies, etc.

Advertising: Displays, window dressing and sales promotion.

Delivery Expense: Salaries paid to deliverymen, truck repairs and maintenance, depreciation, licences and insurance on delivery equipment and supplies used in connection with delivery (gas, oil, etc.), all other costs from stores to customers, including amounts paid for contract delivery.

All Other Operating Expenses: Bank charges, legal, auditing and collection fees, etc.

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

HISTORICAL TOURISM STATISTICS

The tables in this appendix present a summary of the number of persons who visited the various units of the National System in Colorado from 1900 to 1970 inclusive. An obvious trend toward increasing visitation is apparent in that number of visitors grew steadily.

APPENDIX B

HISTORICAL TOURISM STATISTICS

Year	Domestic	Foreign	Total
1900	10,145	4,115	14,260
1901	16,387	7,078	23,465
1902	45,432	8,438	53,870
1903	11,818	19,389	31,207
1904	51,371	21,717	73,088
1905	70,333	28,404	98,737
1906	81,368	38,824	120,192
1907	95,428	21,628	117,056
1908	109,881	28,814	138,695
1909	112,166	24,881	137,047
1910	121,810	29,142	150,952

Source: Tourism Development Office, Department of the Interior, Bureau of Land Management, Annual Report, 1971-1972 (B.L.M. Code 201-1001).

APPENDIX B

HISTORICAL TOURISM STATISTICS

The tables in this appendix present a picture of the demand side of the tourist industry in Newfoundland for the years 1961 to 1971 inclusive. An obvious conclusion upon examining these tables is that tourism is growing very rapidly.

TABLE B-1

VOLUME OF TRAVEL INTO NEWFOUNDLAND VIA CANADIAN NATIONAL FERRIES, 1961-71

Year	Inward Passengers	Inward Passenger Cars	Inward Travel Trailers
1961	33,145	6,613	324
1962	36,347	7,076	353
1963	45,463	8,458	500
1964	51,826	10,244	400
1965	60,871	11,648	521
1966	75,985	15,938	1,040
1967	83,258	18,520	1,473
1968	95,628	21,421	1,932
1969	104,651	22,534	2,319
1970	112,166	24,805	2,628
1971	123,042	28,145	3,046

Source: Tourist Development Office, Government of Newfoundland and Labrador, Annual Report, 1961-1971 (St. John's: Queen's Printer).

TABLE B-2

VOLUME OF TRAVEL INTO NEWFOUNDLAND VIA
CANADIAN NATIONAL FERRIES BY MONTH,
1970 AND 1971

Month	Inward Passengers		Inward Passenger Cars		Inward Trailers	
	1970	1971	1970	1971	1970	1971
January	2,345	2,674	362	391	9	16
February	1,964	2,055	304	346	12	14
March	2,848	2,836	501	545	9	4
April	3,571	4,264	693	901	25	24
May	5,233	6,012	1,165	1,488	39	79
June	12,426	11,677	2,833	2,881	238	228
July	29,025	36,603	6,497	8,149	851	1,164
August	29,126	30,462	6,418	6,797	828	806
September	11,474	12,722	2,894	3,376	411	411
October	6,540	6,648	1,655	1,766	156	223
November	3,611	3,193	786	722	32	41
December	4,003	3,896	697	783	18	36
Total	112,166	123,042	24,805	28,145	2,628	3,046

Source: Tourist Development Office, Government of Newfoundland and Labrador, Annual Report, 1970 and 1971 (St. John's: Queen's Printer).

TABLE B-3

ORIGIN OF PASSENGER CARS AND TRAILERS
INTO NEWFOUNDLAND, 1961-1971

Year	Canada	United States	Other Countries
1961	4,268	1,824	14
1962	4,986	2,250	19
1963	5,749	2,601	34
1964	7,289	2,805	15
1965	8,860	2,746	25
1966	11,845	3,299	20
1967	15,760	4,009	30
1968	18,118	4,652	25
1969	18,726	5,211	20
1970	20,433	5,837	25
1971	26,191	6,412	10

Source: Tourist Development Office, Government of Newfoundland and Labrador, Annual Report, 1961-1971, (St. John's: Queen's Printer).

TABLE B-4

CANADIAN TRAVEL INTO NEWFOUNDLAND
BY PROVINCE, 1970 and 1971

Province	Cars	Trailers	Cycles
	1970		1971
Ontario	6,439		7,847
Nova Scotia	4,900		5,306
New Brunswick	1,392		1,529
Quebec	1,084		1,268
Prince Edward Island	244		268
British Columbia	173		221
Alberta	147		200
Manitoba	93		143
Saskatchewan	53		63
North West Territories	18		9
Yukon	2		3
Newfoundland	5,888		9,334
Total	20,433		26,191

Source: Tourist Development Office, Government of Newfoundland and Labrador, Annual Report, 1970 and 1971 (St. John's: Queen's Printer).

TABLE B-5
 AMERICAN TRAVEL INTO NEWFOUNDLAND
 BY STATE, 1970 AND 1971

State	Cars	Trailers	Cycles
	1970		1971
New York	893		1,024
Massachusetts	850		902
Maine	539		597
New Jersey	378		409
Connecticut	398		402
Michigan	287		313
Ohio	326		300
New Hampshire	212		294
Florida	247		238
California	191		202
Maryland	175		187
Illinois	172		185
Virginia	113		155
Vermont	127		125
Total	4,908		5,333

Source: Tourist Development Office, Government of Newfoundland and Labrador, Annual Report, 1970 and 1971 (St. John's: Queen's Printer).

TABLE B-6

VISITORS' LENGTH OF STAY IN NEWFOUNDLAND, 1962-1971

Year	Under 7 Days	7-14 Days	15-21 Days	Over 21 Days	Average Length of Stay	Percentage of Total Passengers Questioned
1962	915	4,847	921	1,473	14.9	26.0
1963	1,045	5,789	930	895	13.2	25.7
1964	1,496	8,286	1,739	1,446	14.6	29.6
1965	1,900	9,586	2,486	1,956	16.3	34.3
1966	2,738	11,585	3,597	3,033	15.9	34.5
1967	2,534	6,985	1,881	1,469	14.1	19.0
1968	3,344	10,301	2,601	1,655	13.5	24.9
1969	4,163	12,498	3,672	1,993	13.5	35.1
1970	4,775	14,016	3,495	2,184	13.3	30.7
1971	4,232	12,612	3,366	1,965	17.0	27.6

Source: Tourist Development Office, Government of Newfoundland and Labrador,
Annual Report, 1962-1971 (St. John's: Queen's Printer).

TABLE B-7

PURPOSE OF VISIT BY VISITORS ENTERING
NEWFOUNDLAND VIA CANADIAN
NATIONAL FERRIES, 1962-1971
(%)

Year	General Vacation	Visit Friends and Relatives	Hunting	Fishing	Business	Other
1962	52.2	27.4	11.9	3.7	2.6	2.2
1963	52.4	27.3	11.5	3.0	4.4	1.4
1964	31.6	50.4	8.3	4.1	4.9	0.7
1965	30.9	50.9	6.3	5.2	5.7	1.0
1966	36.0	45.0	4.0	9.0	5.0	1.0
1967	39.3	43.0	2.5	6.6	6.8	1.8
1968	42.0	39.0	3.0	10.0	5.0	1.0
1969	40.1	41.3	2.3	10.2	5.1	1.0
1970	38.1	40.3	5.1	10.4	4.7	1.4
1971	43.1	38.4	3.0	8.8	5.5	1.2

Source: Tourist Development Office, Government of
Newfoundland and Labrador, Annual Report,
1962-1971 (St. John's: Queen's Printer).

TABLE B-8

VISITORS TO NEWFOUNDLAND BY OCCUPATION, 1969

TABLE B-8

PAST TRAVEL TO NEWFOUNDLAND BY VISITORS
ENTERING VIA AIR CANADA AND CANADIAN
NATIONAL FERRIES, 1969
(%)

Origin	First Trip to Newfoundland					
	Yes		No		No Answer	
	AC	CN	AC	CN	AC	CN
Maritimes	29	31	66	68	4	1
Quebec	35	52	61	48	4	0
Ontario	35	33	60	65	5	2
Western Canada	53	88	41	9	6	3
United States	34	54	62	43	4	3
Other	63	40	37	60	0	0

Source: Canadian Government Travel Bureau, Department of Industry, Trade and Commerce, Newfoundland Travel Survey, Summer, 1969 (Ottawa: Queen's Printer, 1970), pp. 11-12.

Source: Canadian Government Travel Bureau, Department of Industry, Trade and Commerce, Newfoundland Travel Survey, Summer, 1969 (Ottawa: Queen's Printer, 1970), p. 1.

TABLE B-9

VISITORS TO NEWFOUNDLAND BY OCCUPATION, 1969
(%)

Occupation	Visitors Entering via	
	Air Canada	Canadian National Ferries
Executive/managerial	22	16
Professional/technical	19	18
Housewife	10	3
Student	7	1
Secretarial/clerical	6	4
Teacher/professor	6	8
Craftsman/mechanic/ factory worker	7	22
Salesman/buyer	6	4
Government	5	6
Military	3	7
All other	6	9
No answer	3	2
Total	100	100

Source: Canadian Government Travel Bureau, Department of Industry, Trade and Commerce, Newfoundland Travel Survey, Summer, 1969 (Ottawa: Queen's Printer, 1970), p. 9.

TABLE B-10
VISITORS OBTAINING INFORMATION ABOUT NEWFOUNDLAND
BY SOURCE, 1969

Source	Visitors Entering via	
	Air Canada	Canadian National Ferries
Newfoundland Government Tourist Office	6	25
Canadian Government Travel Bureau	4	20
Oil Company touring offices	1	12
Automobile associations	1	12
Travel Agents	6	4
Airline or steamship companies	5	6
Friends and relatives	13	14
Total	36	93

Source: Canadian Government Travel Bureau, Department of Industry, Trade and Commerce, Newfoundland Travel Survey, Summer, 1969 (Ottawa: Queen's Printer, 1970), p. 20.

TABLE B-11

VISITORS ENTERING NEWFOUNDLAND VIA AIR CANADA
 BY TYPE OF ACCOMMODATION
 BY ORIGIN, 1969
 (%)

Accommodation	Maritimes	Quebec	Ontario	Western Canada	United States	Other
Hotel/Motel	59	63	49	63	34	46
Home of friend/ relative	34	25	51	41	64	26
Other	4	6	2	2	3	3

Source: Canadian Government Travel Bureau, Department of Industry, Trade and Commerce, Newfoundland Travel Survey, Summer, 1969 (Ottawa: Queen's Printer, 1970), pp. 13-14.

TABLE B-12
 VISITORS ENTERING NEWFOUNDLAND VIA CANADIAN
 NATIONAL FERRIES BY TYPE OF ACCOMMODATION
 BY ORIGIN, 1969
 (%)

Accommodation	Maritimes	Quebec	Ontario	Western Canada	United States	Other
Hotel/motel	48	55	34	47	48	10
Home of friend/ relative	59	35	70	44	40	10
Tent/trailer	18	31	17	56	32	30
Cottage	1	0	4	0	0	0

Source: Canadian Government Travel Bureau, Department of Industry, Trade and Commerce, Newfoundland Travel Survey, Summer, 1969 (Ottawa: Queen's Printer, 1970), pp. 13-14.

APPENDIX C

OPERATING RESULTS

In order to determine the operating results of the Newfoundland businesses for the transportation group and the food and beverage group, the following steps were taken:

- (i) the average volumes of annual net sales of these businesses were identified;
- (ii) the operating results relevant to the respective annual volume of net sales, as per Statistics Canada publications, were identified; and
- (iii) each item of the operating results for each of the transportation and food and beverage businesses was averaged.

The end result is two sets of operating results representative of the transportation and food and beverage businesses in the province.

Table C-1 shows the average volume of yearly net sales for the relevant businesses on the aggregated Canadian level and the provincial level. Table C-2 presents the allocation of operating expenses for the Newfoundland transportation group of businesses. Table C-3 presents the allocation of operating expenses for the food and beverage group of businesses in Newfoundland.

TABLE C-1

AVERAGE ANNUAL VOLUME OF NET SALES BY CATEGORY
OF BUSINESS FOR CANADA AND NEWFOUNDLAND

Category of Business	Canada Average	Newfoundland Average
Accessory, tire, battery shops	\$128,550	\$115,906
Service stations (with and without restaurants)	89,286	74,816
Retail and service garages	36,287	76,452
Grocery stores	191,564	55,098
Combination stores	171,079	50,000-99,999
Meat markets	103,459	86,770
Confectionery stores	30,776	16,562
Fruit and vegetable stores	68,515	64,870
Delicatessen stores	66,325	67,300

Source: Statistics Canada, Retail Trade, Statistics Canada publication No. 97-611 (Ottawa: Queen's Printer, 1966), Bulletin AM-2.

There is no data available to allow for the calculation of the Newfoundland average annual volume of net sales for combination stores. The chain combination stores' sales figures in Newfoundland were assumed to be in the lowest range, under \$10,000,000 annual sales. For unincorporated and incorporated independent combination stores, the typical Newfoundland average is assumed to be within the range of \$50,000-\$99,999. This is based on the fact that the Canadian

average for combination stores and grocery stores are \$171,029 and \$191,564, respectively; and, grocery stores have a Newfoundland average equal to \$55,098. Because the Canadian averages are within the same range of annual net sales, the Newfoundland averages are assumed to be within the same range of annual net sales. This is reinforced by the fact that these stores, grocery and combination, are very similar in the nature of their operations.

TABLE C-2

PERCENTAGE DISTRIBUTION OF OPERATING EXPENSES FOR
NEWFOUNDLAND TRANSPORTATION
GROUP OF BUSINESSES
(%)

Expense	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Cost of Goods Sold	72.75	74.21	72.23	72.1	73.73	77.42	28.80	78.47	75.37	72.39	82.04	84.36	70.09	63.83	65.21	69.52	60.93	60.78	54.88	71.53
Salaries & Wages	14.05	7.92	8.40	14.30	12.41	11.24	6.48	6.70	13.39	16.22	3.71	2.92	12.14	14.86	19.92	11.41	13.51	26.61	28.65	12.69
Occupancy Expenses	5.54	4.45	6.05	4.33	6.29	2.15	4.57	5.55	3.74	6.04	5.49	4.52	5.19	5.60	7.45	5.53	6.76	5.06	8.67	5.42
Office & Stores Supplies	1.20	0.34	0.74	0.40	0.39	0.53	0.28	0.26	0.84	0.36	0.46	0.87	0.27	1.49	0.58	0.35	0.54	1.10	0.06	0.58
Advertising	2.20	0.69	1.03	0.67	0.97	1.16	0.32	0.39	0.48	0.35	0.23	0.12	0.21	0.33	0.40	0.27	0.54	0.73	1.81	0.68
Delivery Expense	0.27	0.57	1.15	0.90	0.79	0.13	0.03	0.02	0.00	0.00	0.46	0.00	0.05	0.00	0.00	0.02	0.00	0.00	0.00	0.23
Other Expenses	3.77	2.43	2.55	3.75	3.05	2.80	2.58	1.99	2.65	3.01	2.53	1.39	2.83	3.50	3.71	3.46	4.50	3.91	5.39	3.15
Net Operating Profit	0.00	9.01	7.52	4.59	1.99	3.27	6.72	6.46	3.53	1.14	5.08	5.81	8.36	10.30	2.33	9.18	13.20	1.35	0.19	5.26
Total	99.78	99.62	99.67	101.04	99.62	98.7	99.78	99.84	100.04	99.51	100.00	99.99	99.14	99.91	99.6	99.74	99.96	99.54	99.65	99.74

Sources: Statistics Canada, Automobile Dealers, Accessories, Tire and Battery Shops, Service Stations, Garages and Paint and Body Shops (Independent) Operating Results, Statistics Canada Publication No. 63-408 (Ottawa: Queen's Printer, 1963), pp. 11-12, 14-20; Statistics Canada, Automobile Dealers, Accessories, Tire and Battery Shops and Service Stations (Chain) Operating Results, Statistics Canada Publication No. 63-426 (Ottawa: Queen's Printer, 1965), pp. 7-8.

where, A = Incorporated (chain) accessory, tire and
battery shops;

B = unincorporated (independent) accessory, tire
and battery shops--owned premises;

C = unincorporated (independent) accessory, tire
and battery shops--rented premises;

D = incorporated (independent) accessory, tire and
battery shops--owned premises;

E = incorporated (independent) accessory, tire and
battery shops--rented premises;

F = incorporated (chain) service stations;

G = unincorporated (independent) service stations--
owned premises;

H = unincorporated (independent) service stations--
rented premises;

I = incorporated (independent) service stations--
owned premises;

J = incorporated (independent) service stations--
rented premises;

K = unincorporated (independent) service stations
with restaurants--owned premises;

L = unincorporated (independent) service stations
with restaurants--rented premises;

M = unincorporated (independent) retail garages--
owned premises;

N = unincorporated (independent) retail garages--
rented premises;

- O = incorporated (independent) retail garages--
rented premises;
- P = unincorporated (independent) service garages--
owned premises;
- Q = unincorporated (independent) service garages--
rented premises;
- R = incorporated (independent) service garages--
owned premises;
- S = incorporated (independent) service garages--
rented premises;
- T = the resulting typical operating results of the
transportation group of businesses in New-
foundland.

TABLE C-3

PERCENTAGE DISTRIBUTION OF OPERATING EXPENSES FOR
NEWFOUNDLAND FOOD AND BEVERAGES
GROUP OF BUSINESSES
(%)

Expense	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Cost of Goods Sold	84.80	83.80	79.57	84.31	82.69	78.00	77.73	78.52	83.68	80.33	83.73	81.25	79.63	84.22	81.59
Salaries & Wages	2.10	1.78	12.39	3.96	4.15	9.97	5.35	4.61	0.10	0.34	1.65	1.63	5.34	7.74	4.31
Occupancy Expenses	3.50	4.64	6.51	3.61	4.31	3.37	4.62	4.24	5.96	10.14	3.43	6.52	7.02	2.16	4.98
Office & Stores Supplies	0.36	0.52	0.47	0.43	0.50	0.36	1.08	0.77	0.46	0.22	0.81	1.81	0.58	0.99	0.67
Advertising	0.41	0.36	0.52	0.51	0.46	0.40	0.63	0.26	0.07	0.02	0.80	0.11	0.32	1.36	0.45
Delivery Expense	1.36	1.57	0.96	1.29	1.44	0.72	2.21	2.01	1.47	0.85	0.79	1.82	0.69	0.49	1.26
Other Expenses	1.39	1.04	2.73	1.20	1.41	1.34	2.02	1.47	0.80	2.23	1.05	0.85	2.56	0.86	1.50
Net Operating Profit	5.96	6.17	0.00	5.32	4.87	5.40	6.32	6.07	7.42	5.86	8.04	5.97	3.78	0.21	5.24
Total	99.88	99.88	103.15	99.63	99.63	99.56	99.96	99.95	99.96	99.99	100.00	99.96	99.97	98.03	100.00

Sources: Statistics Canada, Food Chain Stores Operating Results, Statistics Canada Publication No. 63-403 (Ottawa: Queen's Printer, 1966), p. 6; Statistics Canada, Food Stores (Independent, including stores organized in voluntary chains) Operating Results, Statistics Canada Publication No. 63-409 (Ottawa: Queen's Printer, 1966), pp. 7-8, 10-11, 14, 17, 19, 22.

where, A = unincorporated (independent) grocery stores--
owned premises;

B = unincorporated (independent) grocery stores--
rented premises;

C = incorporated (independent) grocery stores--
rented premises;

D = unincorporated (independent) combination stores--
owned premises;

E = unincorporated (independent) combination stores--
rented premises;

F = incorporated (independent) combination stores--
rented premises;

G = unincorporated (independent) meat markets--
owned premises;

H = unincorporated (independent) meat markets--
rented premises;

I = unincorporated (independent) confectionery stores--
owned premises;

J = unincorporated (independent) confectionery stores--
rented premises;

K = unincorporated (independent) fruit and vegetable
stores--owned premises;

L = unincorporated (independent) fruit and vegetable
stores--rented premises;

M = unincorporated (independent) delicatessen stores--
rented premises;

N = chain combination stores;

O = the resulting typical operating results of the food and beverage group of businesses in Newfoundland.

APPENDIX D

SENSITIVITY ANALYSIS

The sensitivity analysis was conducted to determine the effect of changes in the input variables on the output variables. The input variables were the unit price of the product, the unit price of the raw materials, the unit price of the labor, and the unit price of the capital. The output variables were the total cost, the total revenue, and the total profit. The sensitivity analysis was conducted by varying each input variable by 10% and observing the effect on the output variables. The results of the sensitivity analysis are shown in Table D-1. The results indicate that the total cost is most sensitive to changes in the unit price of the raw materials, followed by the unit price of the labor. The total revenue is most sensitive to changes in the unit price of the product. The total profit is most sensitive to changes in the unit price of the product, followed by the unit price of the raw materials. The unit price of the capital has the least effect on the output variables.

APPENDIX D

SENSITIVITY ANALYSIS

In order to determine the gravity of accepting that the important components of the accommodation and sightseeing and entertainment expenditures move through the economy in a manner similar to the transportation expenditures, and that the important components of the purchase expenditures move through the economy in a manner similar to the food and beverage expenditures, sensitivity analysis is conducted.

Upon first examination it would appear that even an extremely large, and improbable, variance in the income multipliers of the accommodation, sightseeing and entertainment, and purchase categories of tourist expenditures would not have an appreciable effect on the overall income multiplier applicable to total tourist expenditures. The three expenditure categories under examination represent only 27 per cent of the total tourist expenditures. Table D-1, Variances in the Tourist Expenditures' Income Multiplier with Changes in a Component Multiplier, indicates that with a ± 10 per cent change in the income multiplier assumed applicable to these expenditures, the overall income multiplier changes by only -2.83 per cent and +2.73 per cent.

Further, given the size of the province's economic base, variances of 10 per cent or greater are extremely unlikely.

A closer investigation of the sensitivity of the overall tourist expenditures' income multiplier to changes in the dispersion of the operating expenses of the accommodation, sightseeing and entertainment, and purchase expenditures through the economy are afforded in the following tables. These tables will assist in drawing a more definitive conclusion regarding the significance of accepting the procedure adopted in the text.

Table D-2, Dispersion of the Transportation Expenditures and the Resulting Income Multiplier, summarizes the dispersion of the initial tourist expenditures on transportation. In the text the dispersion of the accommodation and sightseeing and entertainment expenditures are assumed to approximate the dispersion of the transportation expenditures. Table D-3, Variances in the Accommodation Income Multiplier with Changes in the Dispersion of the Operating Expenses, indicates the changes in the multiplier of the accommodation expenditures as a result of changes being made in the amount of the initial tourist expenditures on accommodation which went, in the first instance, to wages and salaries (H_1). Worthy of note is that wages and salaries is the most significant factor in determining the amount of local income generated. As the notes to Table D-3 state,

changes in H_1 of ± 15 per cent result in changes in the accommodation income multiplier of -4.27 per cent and +4.09 per cent. The next question to be posed is, "What effect do the variances of -4.27 per cent and +4.09 per cent in the accommodation multiplier have on the overall tourist expenditures' multiplier?" Table D-4, Variances in the Tourist Expenditures' Income Multiplier with Changes in the Accommodation Expenditures' Income Multiplier, demonstrates that the resulting variances were less than one per cent (-0.48 per cent and +0.48 per cent). A significant change in the dispersion of the accommodation expenditures from what was assumed in the text has absolutely no significant effect on the overall tourist expenditures' income multiplier.

Further, because the dispersion of the accommodation, sightseeing and entertainment expenditures are both assumed to 'resemble' the dispersion of the transportation expenditures, changes in the dispersion of the sightseeing and entertainment expenditures similar to those made for the accommodation expenditures would result in variances in the sightseeing and entertainment income multiplier of approximately the same magnitude. Therefore, the conclusion drawn in the previous paragraph applies to the accommodation and sightseeing expenditures as well.

Table D-5, Dispersion of the Food and Beverage Expenditures and the Resulting Income Multiplier, summarizes the dispersion of the initial tourist expenditures on food

and beverages. In the text, the dispersion of the preparation and purchase expenditures are assumed to approximate the dispersion of the food and beverage expenditures. Table D-6, Variances in the Preparation and Purchases' Income Multiplier with Changes in the Dispersion of the Operating Expenses, indicates the changes in the multiplier of the preparation and purchase expenditures as a result of changes being made in the amount of the initial tourist expenditures on preparations and purchases which went, in the first instance, to wages and salaries (H_1)--wages and salaries being the most significant factor in determining the amount of local income generated. As the notes to Table D-6 state, changes in H_1 of ± 15 per cent result in changes in the preparation and purchases' income multiplier of -2.12 per cent and $+2.12$ per cent. What effect do the variances of ± 2.12 per cent in the preparation and purchases' multiplier have on the overall tourist expenditures' multiplier? Table D-7, Variances in the Tourist Expenditures' Income Multiplier with Changes in the Preparation and Purchases' Expenditures Income Multiplier, demonstrates the resulting variances were less than one per cent (± 0.2 per cent). A significant change in the dispersion of the preparation and purchase expenditures from what was assumed in the text has an insignificant effect on the overall tourist expenditures' income multiplier.

In conclusion, the overall income multiplier applicable to tourist expenditures is not sensitive to significant

changes in the dispersion of the accommodation, sightseeing and entertainment, and preparation and purchase expenditures from the dispersion assumed in the text.

TABLE D-1

VARIANCES IN THE TOURIST EXPENDITURES' INCOME MULTIPLIER
WITH CHANGES IN A COMPONENT MULTIPLIER

Type of Expenditure	Amount of Expenditure	Multiplier			Local Income Generated		
		A	B	C	A	B	C
$E_{T1} + E_{T2} + E_{T6}$	\$ 730.00	1.015	1.015	1.015	\$740.95	\$ 740.95	\$ 740.95
$E_{T3} + E_{T4} + E_{T5}$	270.00	0.949	1.055	1.160	256.23	284.85	313.20
Total	\$1,000.00	0.997	1.026	1.054	\$997.18	\$1,025.80	\$1,054.15
Variance		-2.83%	0	+2.73%			

where, E_{T1} = transportation expenditures,
 E_{T2} = food and beverage expenditures,
 E_{T3} = accommodation expenditures,
 E_{T4} = sightseeing and entertainment expenditures,
 E_{T5} = preparation and purchase expenditures,
 E_{T6} = miscellaneous expenditures.

- Notes: 1. Case B represents the situation as presented in the text.
2. Case A represents the situation when there is a -10 per cent change in the multiplier applicable to $E_{T3} + E_{T4} + E_{T5}$ which represents 27 per cent of the total expenditures.
3. Case C represents the situation where there is a +10 per cent change in the multiplier applicable to $E_{T3} + E_{T4} + E_{T5}$ which represents 27 per cent of the total expenditures.

TABLE D-2

DISPERSION OF THE TRANSPORTATION EXPENDITURES
AND THE RESULTING INCOME MULTIPLIER

Category of Operating Expenses	Amount of Operating Expenses		Income Coefficient	1st Round Income		Multiplier Calculations
	\$	%		\$	%	
H ₁	48.04	15.79	100%	48.04	31.32	Initial Impact (H ₁ +H ₂ +H ₄) - \$69.58
H ₂	17.74	5.83	23%	4.08	2.66	
H ₃	19.71	6.48	30%	5.91	3.85	6 rounds after initial impact - \$271.96
H ₄	3.80	1.25	40%	1.52	1.00	
H ₅	213.24	70.10	44%	93.83	61.17	Multiplier - \$341.54
H ₆	1.68	0.55	0%	0	0	\$304.21
Total	\$304.21	100%		\$153.38	100%	1.123

where H₁ = wages and salaries,
 H₂ = profit, rents and interest,
 H₃ = municipal and provincial taxes,
 H₄ = depreciation,
 H₅ = purchases,
 H₆ = imports.

TABLE D-3

VARIANCES IN THE ACCOMMODATION INCOME MULTIPLIER WITH
CHANGES IN THE DISPERSION OF THE OPERATING EXPENSES

A

Category of Operating Expenses	Amount of Operating Expenses		Income Coefficient	1st Round Income		Multiplier Calculations
	\$	%		\$	%	
H ₁	20.70	18.16	100%	20.70	35.09	Initial impact (H ₁ +H ₂ +H ₄) - \$ 28.77
H ₂	6.65	5.83	23%	1.53	2.59	
H ₃	7.39	6.48	30%	2.22	3.76	6 rounds after initial impact - \$104.58
H ₄	1.42	1.25	40%	0.57	0.97	
H ₅	77.21	67.73	44%	33.97	57.59	Multiplier - \$133.35 \$114.00
H ₆	0.63	0.55	0%	0	0	
Total	\$114.00	100%		\$58.99	100%	1.169

B

TABLE D-3 (Continued)

Category of Operating Expenses	Amount of Operating Expenses		Income Coefficient	1st Round Income		Multiplier Calculations
	\$	%		\$	%	
H ₁	15.30	13.42	100%	15.30	27.34	Initial impact (H ₁ +H ₂ +H ₄) - \$ 23.37
H ₂	6.65	5.83	23%	1.53	2.73	
H ₃	7.39	6.48	30%	2.22	3.97	6 rounds after initial impact- \$ 99.23
H ₄	1.42	1.25	40%	0.57	1.02	
H ₅	82.61	72.47	44%	36.35	64.94	Multiplier - \$122.60 \$114.00
H ₆	0.63	0.55	0%	0	0	
Total	\$114.00	100%		\$55.97	100%	1.075

where, H₁ = wages and salaries,
H₂ = profit, rent and interest,
H₃ = municipal and provincial taxes,
H₄ = depreciation,
H₅ = purchases,
H₆ = imports.

- NOTES: 1. In A, H₁ is increased by 15 per cent. The resulting variance in the income multiplier is $(1.169 \div 1.123) + 4.09\%$.
2. In B, H₁ is decreased by 15 per cent. The resulting variance in the income multiplier is $(1.075 \div 1.123) - 4.27\%$.

TABLE D-4

VARIANCES IN THE TOURIST EXPENDITURES' INCOME MULTIPLIER
WITH CHANGES IN THE ACCOMMODATION
EXPENDITURES' INCOME MULTIPLIER

Type of Expenditure	Amount of Expenditure	Multiplier			Local Income Generated		
		A	B	C	A	B	C
E _{T1}	\$ 305.00	1.123	1.123	1.123	\$342.52	\$342.52	\$342.52
E _{T2}	202.00	0.942	0.942	0.942	190.28	190.28	190.28
E _{T3}	114.00	1.075	1.123	1.169	122.55	128.02	133.26
E _{T4}	58.00	1.123	1.123	1.123	65.13	65.13	65.13
E _{T5}	98.00	0.942	0.942	0.942	92.32	92.32	92.32
E _{T6}	223.00	0.942	0.942	0.942	210.07	210.07	210.07
Total	\$1,000.00	1.123	1.028	1.033	\$1,022.87	\$1,028.34	\$1,033.58
Variance		-0.48%	0%	+0.48%			

where, E_{T1} = transportation expenditures,
 E_{T2} = food and beverage expenditures,
 E_{T3} = accommodation expenditures,
 E_{T4} = sightseeing and entertainment expenditures,
 E_{T5} = preparation and purchase expenditures,
 E_{T6} = miscellaneous expenditures.

NOTES TO TABLE D-4:

1. Case B represents the situation as presented in text.
2. Case A represents the situation when there is a decrease in the Accommodation multiplier of 4.27%.
3. Case C represents the situation when there is an increase in the Accommodation multiplier of 4.07%.
4. The multiplier presented in Table III-15, Chapter III, is 1.026. The multiplier presented in Case B, Table D-4 is 1.028. The difference of 0.002 is the result of applying multipliers with three digits after the decimal in Table D-4, rather than two digits after the decimal as in Table III-15.

TABLE D-5

DISPERSION OF THE FOOD AND BEVERAGE EXPENDITURES
AND THE RESULTING INCOME MULTIPLIER

Category of Operating Expenses	Amount of Operating Expenses		Income Coefficient	1st Round Income		Multiplier Calculations
	\$	%		\$	%	
H ₁	13.32	6.59	100%	13.32	14.63	Initial Impact (H ₁ +H ₂ +H ₄) -\$ 28.84
H ₂	13.21	6.54	23%	3.04	3.34	
H ₃	13.61	6.74	30%	4.08	4.48	6 rounds after initial impact-\$161.47
H ₄	2.31	1.14	40%	0.92	1.01	
H ₅	158.44	78.44	44%	69.71	76.54	Multiplier - \$190.31 \$202.00
H ₆	1.11	0.55	0%	0	0	
Total	\$202.00	100%		\$91.07	100%	0.942

where, H₁ = wages and salaries,
H₂ = profit, rents and interest,
H₃ = municipal and provincial taxes,
H₄ = depreciation,
H₅ = purchases,
H₆ = imports.

TABLE D-6

VARIANCES IN THE PREPARATION-PURCHASES' INCOME MULTIPLIER
WITH CHANGES IN THE DISPERSION OF THE OPERATING EXPENSES

A

Category of Operating Expenses	Amount of Operating Expenses		Income Coefficient	1st Round Income		Multiplier Calculations
	\$	%		\$	%	
H ₁	7.43	9.58	100%	7.43	16.61	Initial Impact (H ₁ +H ₂ +H ₄) - \$14.96
H ₂	6.41	6.54	23%	1.47	3.29	
H ₃	6.60	6.74	30%	1.98	4.43	6 rounds after initial impact - \$99.31
H ₄	1.12	1.14	40%	0.45	1.00	
H ₅	75.90	77.45	44%	33.40	74.61	Multiplier - \$94.27 \$98.00
H ₆	0.54	0.55	0%	0	0	
Total	\$98.00	100%		\$94.73	100%	0.962

TABLE D-6 (Continued)

B

Category of Operating Expenses	Amount of Operating Expenses		Income Coefficient	1st Round Income		Multiplier Calculations
	\$	%		\$	%	
H ₁	5.49	5.60	100%	5.49	12.58	Initial impact (H ₁ +H ₂ +H ₄) - \$13.02
H ₂	6.41	6.54	23%	1.47	3.37	
H ₃	6.60	6.14	30%	1.98	4.54	6 rounds after initial impact - \$17.38
H ₄	1.12	1.14	40%	0.45	1.03	
H ₅	77.84	18.43	44%	34.25	78.48	Multiplier - \$90.40
H ₆	0.54	0.55	0%	0	0	\$98.00
Total	\$98.00	100%		\$43.64	100%	0.922

where, H₁ = wages and salaries,
H₂ = profit, rent and interest,
H₃ = municipal and provincial taxes,
H₄ = depreciation,
H₅ = purchases,
H₆ = imports.

NOTES: 1. In A, H₁ is increased by 15%. The resulting variances in the income multiplier is +2.12% (0.962÷0.942).
2. In B, H₁ is decreased by 15%. The resulting variance in the income multiplier is -2.12% (0.922÷0.942).

TABLE D-7

VARIANCES IN THE TOURIST EXPENDITURES' INCOME MULTIPLIER
WITH CHANGES IN THE PREPARATION AND PURCHASE
EXPENDITURES' INCOME MULTIPLIER

Type of Expenditure	Amount of Expenditure	Multiplier			Local Income Generated		
		A	B	C	A	B	C
E _{T1}	\$305.00	1.123	1.123	1.123	\$342.52	\$342.52	\$342.52
E _{T2}	202.00	0.942	0.942	0.942	190.28	190.28	190.28
E _{T3}	114.00	1.123	1.123	1.123	128.02	128.02	128.02
E _{T4}	58.00	1.123	1.123	1.123	65.13	65.13	65.13
E _{T5}	98.00	0.922	0.942	0.962	90.35	92.32	94.27
E _{T6}	223.00	0.942	0.942	0.942	210.07	210.07	210.07
Total	\$1,000.00	1.026	1.028	1.030	\$1,026.37	\$1,028.34	\$1,030.29
Variance		-0.2%	0%	+0.2%			

where, E_{T1} = transportation expenditures,
 E_{T2} = food and beverage expenditures,
 E_{T3} = accommodation expenditures,
 E_{T4} = sightseeing and entertainment expenditures,
 E_{T5} = preparation and purchase expenditures,
 E_{T6} = miscellaneous expenditures.

NOTES TO TABLE D-7:

1. Case B represents the situation as presented in the text.
2. Case A represents the situation when there is a decrease in the Preparation and Purchases' multiplier of 2.12%.
3. Case C represents the situation when there is an increase in the Preparation and Purchases' multiplier of 2.12%.
4. The multiplier presented in Table III-15, Chapter III, is 1.026. The multiplier presented in Case B, Table D-7, is 1.028. The difference of 0.002 is the result of applying multipliers with three digits after the decimal in Table D-7, rather than two digits after the decimal as in Table III-15.

APPENDIX E

TOURIST MULTIPLIER RELATED TO DIRECT
GOVERNMENT EXPENDITURES

The following table shows the multiplier related to the
identification of the stage

(a) Direct government expenditure on goods and services

- Tourist Multiplier	1.00
- Provincial Trade	1.00
- Federal Trade	1.00
- State Canada	1.00

APPENDIX E

TOURIST MULTIPLIER RELATED TO DIRECT GOVERNMENT EXPENDITURES

Source: Statistics Canada, Ottawa, Ontario, Canada,
Department of Finance, Statistics, Ottawa, Ontario,
February 1978.

(b) Amount of the \$1,000,000 expenditure on wages and
salaries

- Tourist Multiplier	1.00
- Provincial Trade	1.00
- Federal Trade	1.00
- State Canada	1.00

Source: Same as for (a) above

(c) Initial impact

APPENDIX E

TOURIST MULTIPLIER RELATED TO DIRECT GOVERNMENT EXPENDITURES

The following calculations serve as a guide to the identification of the range:

(i) direct government expenditures, current accounts

- Tourist Development Office, 1971/72	- \$ 662,100	
- Provincial Parks Service, 1971/72	- \$1,030,300	
- Parks Canada (in Newfound- land), 1971/72	- \$ 693,634	\$2,386,034

Sources: Province of Newfoundland and Labrador, Estimates 1972-73, pp. 59-61; Interview (by phone) with Mr. Porter, Atlantic Regional Office, Parks Canada, Government of Canada, Halifax, Nova Scotia, February 10, 1975.

(ii) amount of the \$2,386,034 expended on wages and salaries

- Tourist Development Office	- \$ 160,000	
- Provincial Parks Service	- \$ 591,000	
- Parks Canada	- \$ 208,000	\$ 959,000

Sources: Same as for (i) above.

(iii) initial impact \$ 959,000

(iv) first round impact* \$1,586,900

*The first round impact is derived by applying the purchases' leakage coefficient of 44 per cent to the expenditures other than wages and salaries, and then adding on the initial impact--

- (\$2,386,034 - \$959,000) x 44% + (\$959,000) \$1,586,900

(v) subsequent rounds' impact*

*The subsequent rounds' impact is approximated by applying the subsequent rounds' leakage coefficient, as per the tourist expenditures' multiplier, to the first round impact--

- round 2 (\$1,586,900) x 44.01% = \$698,400

- round 3 (\$1,586,900) x (44.01%)² = \$307,360

- round 4 (\$1,586,900) x (44.01%)³ = \$135,270

- round 5 (\$1,586,900) x (44.01%)⁴ = \$ 59,530

- round 6 (\$1,586,900) x (44.01%)⁵ = \$ 26,200 \$1,226,760

(vi) total impact \$3,772,660

(vii) income multiplier 1.58

The multiplier of 1.58 is relatively high chiefly because of the high proportion of the initial expenditures which are allocated to wages and salaries. Because the three agencies applied in this illustration may have more of their expenditures going into wages and salaries than do the agencies relating to the indirect and induced government expenditures, to avoid overstating the multiplier effect, the upper limit of the range applied in the text was assumed to be 1.55.



