

Horwath Tourism & Leisure Consulting
Member of Horwath International



Tourism Multipliers Explained

**Published in Conjunction with the
World Tourism Organisation**

November 1981

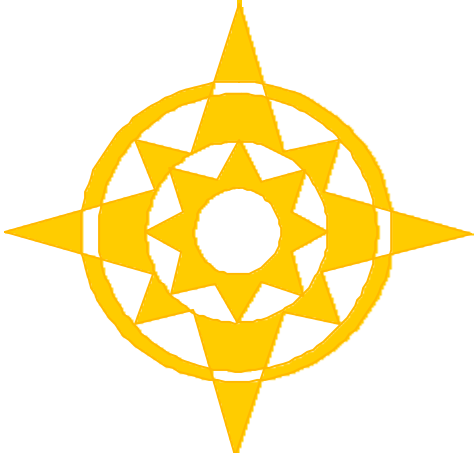




Table Of Contents

Introduction	1
1. The Multiplier Concept	3
2. Models	5
3. Weaknesses and Limitations of Tourism Multipliers	7
3.1 Data Deficiency	7
3.2 Restrictive Assumptions and Limitations	7
3.3 Existence of Supply Constraints	8
3.4 Use of Homogeneous Consumption Functions	8
3.5 Repercussive Feedback Mechanism	9
3.6 Speed of Transactions Within the Economy	9
3.7 Sensitivity of Coefficients	9
4. The Suitability of Multipliers	10
5. Multiplier Values	11
5.1 Introduction	11
5.2 Tourism Output/Sales Multiplier	11
5.3 Tourism Income Multipliers	12
5.4 Generalisation Relating to Size of Multiplier	13



Introduction

The following document was issued by the Secretary General of the World Tourism Organisation to its members on 5 November 1981. It was prepared by the Investment in Tourism working party of the Affiliate Members of WTO which is made up of:

- Horwath & Horwath (UK) Ltd – Chairman, representing Horwath & Horwath International
- Centre d' Etudes du Tourisme (Canada)
- Iberia (Spain)
- Institut fur Fremdenverkehrs-Entwicklung (Austria)
- International Hotel Association
- Kenya Tourist Development Corporation
- Promotour (France)
- Spantax (Spain)
- Travel Industry Association of America

The paper sets out to explain tourism multipliers, and the state of knowledge of them, in simple layman's terms. It is intended to aid practitioners in tourism who do not have direct technical knowledge.

It was prepared for the working party by Martin W. Gerty of Horwath & Horwath (UK) Ltd under the guidance of professor Brian Archer (Department of Hotel and Tourism Management, University of Surrey), and J.A. Bodlender (Horwath & Horwath International), Chairman of the working party. Professor Archer also edited the paper. The working party's thanks are expressed both to Professor Archer and Mr Gerty for their time and effort in preparing this paper.

The paper does not necessarily represent the views of the World Tourism Organisation, its affiliate members or the working party.

It has been written to focus attention on the effects of the tourism multiplier and the economic benefit, which can therefore be derived from the introduction of additional tourist expenditure into a region, and on the factors to be considered when evaluating this benefit. In this context accommodation is of particular importance, because it accounts for a high proportion of tourist spending in a destination, and because serviced accommodation is labour intensive, resulting in



significant direct and induced secondary and tertiary benefits to the local economy. This is fundamental to the encouragement of investment in tourist facilities, and particularly hotels, in Third World countries.

We have reproduced this document for private circulation to a select number of the clients of our member firms and their contacts within the industry, with the specific permission of the Secretary General of WTO, for which we express our thanks. A number of copies are also being supplied to International Hotel Association for private circulation. Copies of the original document in Spanish and French are available from WTO, Madrid.

1. The Multiplier Concept

1.1 The Multiplier measures the impact of extra expenditure introduced into an economy. It is therefore concerned with the marginal rather than average changes. In the case of tourism this extra expenditure in an area can take many forms, including the following:

- spending on goods and services by tourists visiting the area;
- investment by external sources;
- government (domestic or foreign) spending (e.g. domestic government spending on infrastructure in a region or foreign government aid);
- exports of goods stimulated by tourism.

1.2 The expenditure can be analysed as follows:

- **Direct Expenditure** – in the case of tourism this is expenditure made by tourists on goods and services in hotels, restaurants, shops, other tourist facilities, and for tourism generated exports, or by tourism related investment in the area.
- **Indirect Expenditure** – this covers successive rounds of inter-business transactions which result from the direct expenditure, such as purchases of goods by hoteliers from local suppliers and purchases by local suppliers from wholesalers.
- **Induced Expenditure** – this is the increasing consumer spending resulting from the additional personal income generated by the direct expenditure, e.g. hotel workers using their wages for the purchase of goods and services. Indirect and induced expenditure together are called secondary expenditure.

1.3 However, there are different and conflicting concepts of the multiplier, with four types of multiplier, which are intrinsically linked, being in common use:

- **Sales (Transaction) Multiplier** – this measures the extra business turnover created (direct and secondary) by an extra unit of tourist expenditure.
- **Output Multiplier** – this is similar to the Sales Multiplier but it also takes into account inventory changes, such as the increase in stock levels by hotels,

restaurants and shops because of increased trading activity. It should be noted that few researchers specify whether or not inventory changes have been taken into account.

- **Income Multiplier** – this measures the income generated by an extra unit of tourist expenditure. Confusion arises over the definition of income. Many researchers define income as disposable income accruing to households within the area, which is available for them to spend. However, although salaries paid to overseas residents are often excluded, a proportion of these salaries may be spent in the local area and should therefore be included. In considering national economies some studies include revenue accruing to the government in income.

Income multipliers can be expressed in one of two ways: the ration method, which expresses the direct and indirect incomes (or the direct and secondary incomes) generated per unit of direct income; or the normal method, which expresses total income (direct and secondary) generated in the study area per unit increase in final demand created within a particular sector.

Ratio multipliers indicate the internal linkages which exist between various sectors of the economy, but do not relate income generated to extra sales. Hence, on their own, ratio multipliers are valueless as a planning tool.

- **Employment Multiplier** – this can be expressed in one of two ways: as a ration of the combination of direct and secondary employment generated per additional unit of tourist expenditure to direct employment generated, or as the employment created by tourism per unit of tourist expenditure.

1.4 Multipliers can be further categorized by the geographical area which is covered by the research, such as a local community, a region within a country, or a country as a whole.

2. Models

2.1 Multiplier evaluation necessitates the use of models. The degree of sophistication of these models varies. However, there are three elemental forms:

- (i) **Base Model** – this is very simplistic and rarely used in practical research. It assumes that one can divide the economy under research into export activities and local (non-export) activities, and that a stable relationship exists between the export and local sectors, with these sectors linked by linear relationships. It further assumes that unemployed resources are available within the economy, and that the scale of the export activities is the sole determinant of the level of income and employment within the area.
- (ii) **Keynesian Model** – this is based on identifying streams of income and employment which are generated in “rounds”, which diminish in geometric progression because of leakages at each round.
- (iii) **Input-Output Model** – the input-output concept analyses the economy into its sectors and expresses a relationship of these sectors in matrix form, based on the results of research into the effects of tourist expenditure.

2.2 Most multipliers in common use incorporate the general principle of the Keynesian model. Keynesian multipliers have been developed into modified forms of input-output analysis with separate formulae being utilised for each principal business activity – one for businesses which are not primarily dependent upon tourism expenditure and will continue to exist without it, and the second for businesses which are dependent on tourism for their existence.

2.3 Fundamental to multiplier research is the concept of “leakages” from the economy. It is such leakages which result in rounds of income and employment, identified in Keynesian models, diminishing. The exact nature of these leakages will depend on the characteristics of the particular study. Some examples of leakages are as follows:

- payment for goods and services produced outside, and imported into, the study area;

- remittance of incomes outside the study area, for example, by foreign workers;
- indirect and direct taxation where the tax proceeds are not present in the study area; and
- savings out of income received by workers in the study area (i.e. where there is a low propensity to consume).

3. Weaknesses and Limitations of Tourism Multipliers

Tourism multiplier research suffers the following limitations:

3.1 Data Deficiency

Multiplier analysis requires a detailed database. In many cases researchers generate their own data. However, this takes considerable time and money. In general terms the smaller the research area the less likely it is to have data available in a suitable format.

This situation is compounded by the fact that tourism is a multi-product industry, covering a broad spread of economic sectors. Any economic data, which is readily available, does not usually analyse the economy in sufficient detail.

3.2 Restrictive Assumptions and Limitations

Many of the weaknesses and limitations of multiplier analysis result from restrictive basic assumptions, which are made in constructing the models. The more sophisticated models eliminate or reduce some of these weaknesses.

- base theory models and the simpler Keynesian-type models do not take into consideration the different effects of expenditure in different sectors of the economy. For example, they treat a unit of expenditure by a tourist for hotel accommodation in the same way as that of a tourist purchasing consumable goods from a supermarket.
- models may be of static form. This assumes that production and consumption functions are directly proportional, i.e. that further production undertaken by each sector of the economy will require purchases of inputs in the same proportions as previously. This has the following limitations:
 - it ignores the possibilities of economies or diseconomies of scale;
 - it uses average rather than marginal relationships between production and consumption;
 - it assumes that trading patterns remain stable, i.e. that a particular sector will continue to import and to purchase from other sectors

within the local economy in the same proportions as previously. This takes no account of supply constraints.

3.3 Existence of Supply Constraints

Most multiplier studies assume that supply is “elastic” in all sectors of the economy, i.e. that the increase in output required to meet the increased demand resulting from tourism will be met by purchases from the same sources. This may not be possible because of technical constraints. Supply constraints cited in research include the following:

- lack of available resources (capital, land, labour etc) in the local economy, thus limiting local production;
- lack of foreign exchange to enable the purchase of capital goods and other necessary imports, thus limiting local production;
- the inability of sectors of the local economy to respond to increased demand for their product. For example, the inability of domestic agriculture to meet increased demand, which results from a significant increase in tourism, for its produce. Such an increase in demand may also lead to price increases, which in turn result in imports becoming price competitive and hence replacing domestic produce.

In its static form input-output analysis can be used to identify potential supply constraints.

3.4 Use of Homogeneous Consumption Functions

Most multiplier models assume that as household incomes rise these incomes will be spent on the same products as previously. Clearly in practice it is likely that such rises in incomes will result in changes in the type of goods purchased.

Research indicates that allowance for changes in consumption patterns increases leakages and reduces the multiplier effect, particularly in developing countries, which tend to have higher propensity to import.

3.5 Repercussive Feedback Mechanism

Few multiplier models take into account the effects of increased incomes outside the study area which result from exports to the study area. This may in turn generate tourism and expenditure in the study area. Research, which has only been conducted on small economies, indicates that this has only a minimal effect.

3.6 Speed of Transactions within the Economy

Static multiplier models take no account of the length of time the multiplier effect takes to work its way through the economy. However, research indicates that different multiplier values can result from different estimates of the speed with which the resultant transactions occur in the economy. Little is known about the way in which a multiplier works its way through economy. However, it has been suggested* that direct tourist expenditure is likely to “turnover” five to six times in a 12 month period.

3.7 Sensitivity of Coefficients

In constructing a multiplier model a balance has to be reached on its sensitivity. It must be robust enough to withstand substantial changes in the value of coefficients (such as the propensity to consume), yet sensitive enough to react to changes in the pattern of tourist expenditure. The success of researchers in achieving this balance varies.

Footnote: * 1963 USA Presidential Report

4. The Suitability of Multipliers

- 4.1 The major criticism voiced about the suitability of using the multiplier approach to analyse the impact of tourism, particularly in the context of developing countries, is that it ignores the opportunity cost of resources and factors of production, which would be diverted from other uses. Even if spare capacity exists it does not indicate whether or not tourism is the most efficient way of employing this spare capacity in the short term.

- 4.2 However, it should be noted that the above aspects relate to the need to make a sensible investment decision. This can be evaluated by the use of cost-benefit analysis. Multiplier analysis relates to a different policy question, and is more suitable for the examination of the economic effect of increased tourist expenditure and its impact on other sectors of the economy.

5. Multiplier Values

5.1 Introduction

The size of a tourism multiplier depends on the specific circumstances of the case under study, including the nature of the local economy and particularly the degree to which its various sectors are inter-linked in their trading patterns.

It should be noted that, whilst a considerable number of tourism multiplier studies have been carried out in recent years, some of these studies have been conducted with a lack of expertise and have given misleading results.

The following sub-sections give values of tourism multipliers indicated from past research.

5.2 Tourism Output/Sales Multiplier

A range of tourism output/sales multipliers resulting from specific researches is given in the table below. These range from 1.16 in Gwynedd (a regional economy in Great Britain) to 2.339 – 3.198 for the Turkish economy. This latter figure is shown as a range because the researchers quantified an unconstrained multiplier (3.198) and one which includes allowance for foreign trade constraint (2.339).

Tourism Income Multipliers

Country or Region		Tourism Output/Sales Multiplier
Turkey	(1)	2.339 – 3.198
Door County, Wisconsin	(2)	2.17
Clinton County, Pennsylvania	(3)	1.98
Grand County, Colorado	(4)	1.94
(a) Fisherman		1.95
(b) Hunters		1.91
Southwestern Wyoming	(5)	n/a
(a) Lodgings		2.30
(b) Food and Drink		1.84
(c) Gas and Auto Sales		1.73
Walworth County, Wisconsin	(6)	1.87

Country or Region		Tourism Output/Sales Multiplier
Sullivan County, Pennsylvania	(3)	1.60
(a) Wildlifers		1.56
(b) Tourists		1.62
(c) Vacation Home Owners		1.62
Barbados	(7)	1.41
Gwynedd, North Wales	(8)	1.16

Sources: *The numbers in brackets refer to the relevant studies mentioned in the Bibliography*

It can be seen from this table that the multiplier for Barbados has a relatively low value. This is because of the relatively weak backward linkages in the economy, which is typical of small island economies.

5.3 Tourism Income Multipliers

The following table shows tourism income multipliers for 21 countries or regions.

Country or Region		Tourism Income Multiplier Normal Value (Ration Value)
Ireland	(9)	1.776 - 1.906 (2.674 to 2.87)*
United Kingdom	(9)	1.683 - 1.784 (3.163 to 3.354)*
Dominica	(10)	1.195
Bermuda	(11)	1.099
Eastern Caribbean	(12)	1.073
Antigua	(10)	0.880
Missouri State	(13)	0.879**
Antigua	(14)	0.866 (1.63)*
The Bahamas	(11)	0.782
Walworth County, Wisconsin	(6)	0.777 (1.52)*
Cayman Islands	(10)	0.650
Grand County, Colorado	(4)	0.598 (1.34 to 2.50)*
Door County, Wisconsin	(2)	0.550**
Sullivan County, Pennsylvania	(3)	0.443
Southwestern Wyoming	(5)	0.389 – 0.528**
Gwynedd, North Wales	(8)	0.370
St. Andrew’s, Scotland	(15)	0.337
South West England	(16)	0.330 – 0.470
Greater Tayside, Scotland	(17)	0.321
East Anglian Coast, Scotland	(18)	0.320
Isle of Skye, Scotland	(19)	0.250 – 0.410

Sources: *The numbers in the brackets refer to the relevant studies mentioned in the Bibliography.*

- * These multipliers were expressed originally in their “ratio” form. The “normal” values were calculated from data supplied in the original texts.
- ** These multiplier values were not stated in the original text, but were derived from data contained in the relevant articles. In the case of Southwestern Wyoming, the figures relate to sectoral income multipliers.

With the exception of Ireland and the United Kingdom the national multipliers relate to small economies and range from 0.65 in the Cayman Islands to 1.195 in Dominica. The remaining income multipliers in the table relate to regional or local economies.

5.4 Generalisation Relating to Size of Multiplier

An area’s economic composition is the key factor determining the size of a multiplier. The wider the range of economic activities within the area, the greater the amount of trading which is likely to take place between them, and hence the larger the size of the multiplier. The propensity to import goods and services is particularly important. The higher the propensity to import, the lower the resultant value of the multiplier, and hence the lower the benefit to the economy.